

Le Corbusier's numbers and measures

# A Keyboard of Possibilities



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**He divided man up into sections and rejected the metric system. Even though he never visited Poland, his rules have become an inspiration for Polish architects and designers. What was Le Corbusier's vision?**

Poland's artistic and architectural elites have been familiar with him since at least 1921, when a group of students and lecturers from the Faculty of Architecture at the Warsaw Polytechnic held an exhibition of his works following a team trip to France. It kicked off a Modernist revolution in the consciousness of an entire generation of Poland's first Modernists.

## Architect or demiurge?

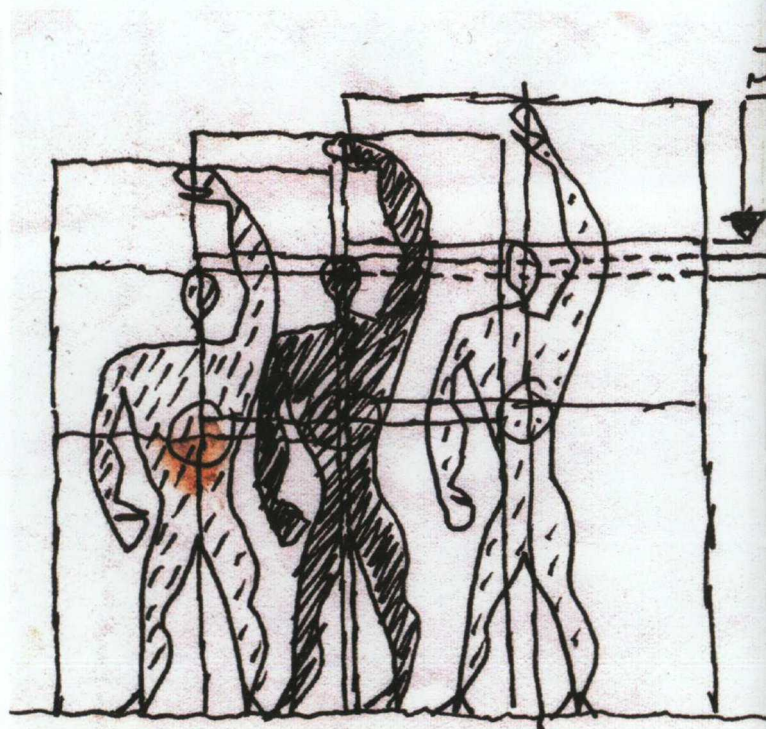
Le Corbusier's Parisian workshop at rue de Sevres 35 was soon visited by several Polish architects and apprentices; in the 1920s, his books were reviewed by Leon Chwistek, Władysław Tatarkiewicz, Tadeusz Peiper, Lech Niemojewski and Witkacy, the latter envious of the innovative magazine *L'Esprit Nouveau*. Reading Le Corbusier, they noted his radical anti-academic and anti-canonical stance; he charmed the avant-garde with the linear, "wiry" style of his simple drawings, the non-linear and passionate rhetoric of his "written architecture," and his theories.

As active members of CIAM (Congres International d'Architecture Moderne, founded 1928), Szymon and Helena Syrkus had close ties with Le Corbusier; they included his concepts in their "scientific spatial design" and "bearing" architecture, based on praxeological concepts of Taylorism and Fordism, which was to play a regulatory, organizational and control part in community living, delivering the message through a combination of pressure and coercion. The program was a typical manifestation of technocratic consciousness characterized by the desire to control and shape society "the way we

control nature" (Habermas), where avant-garde architects would play a key part using their unique ability to perceive simultaneism: a feature of contemporary cities organizing the world using directorial means "in order to provide movement composition with plastic as well as functional characteristics" (Szymon Syrkus, *Tempo architektury* [Tempo of architecture], 1930).

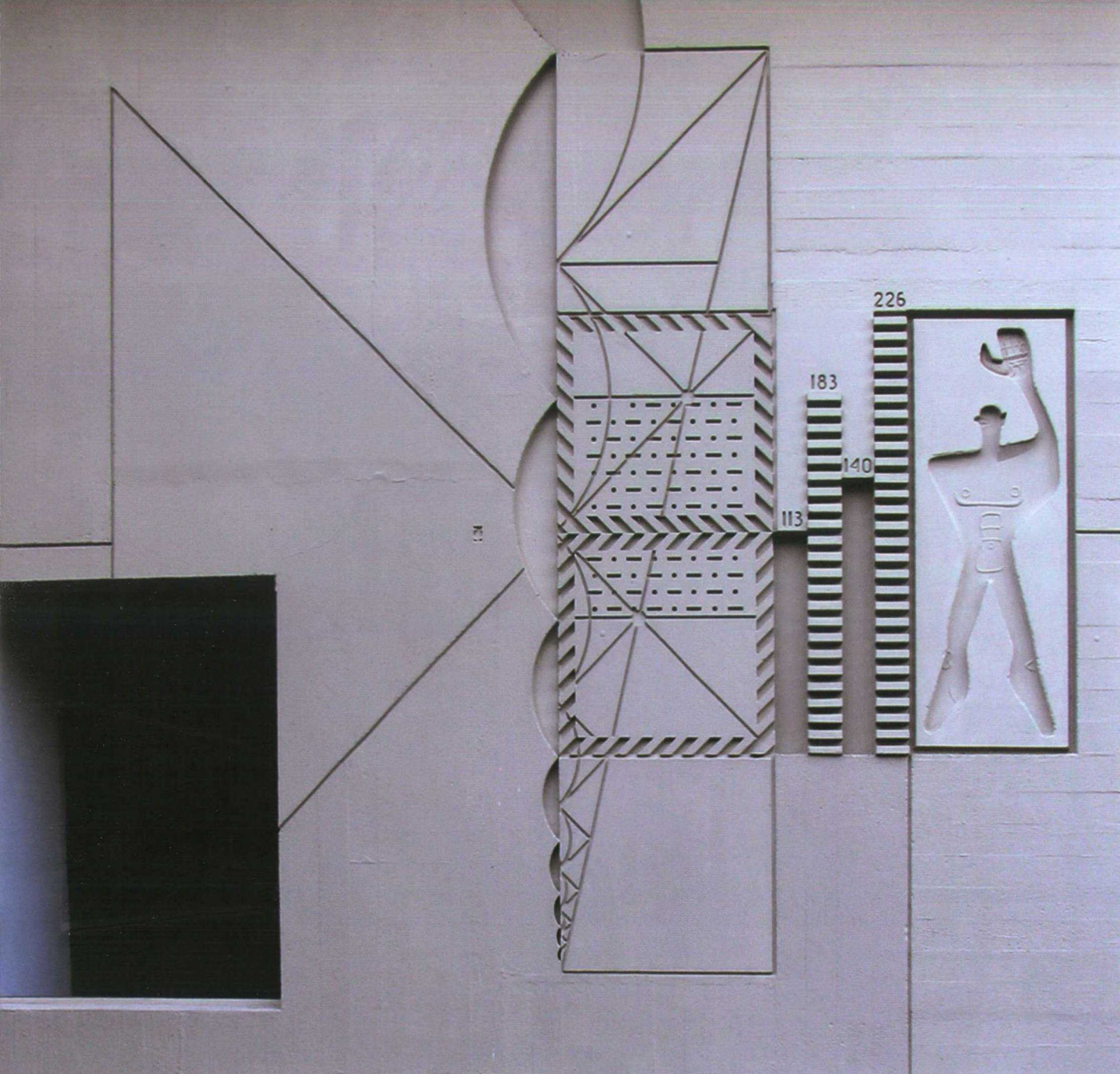
The radicalism of Syrkus and Władysław Strzemiński, who took Le Corbusier's "linear city" concept - combined with its Soviet mutation of Milyutin's linear cities - to an extreme of the unistic "parallel city," went far further than Le Corbusier's programs. However, all three agreed as to the role of architecture as an organized system and mechanism, and the role of architects, whose cult during Modernism elevated them to a quasi-religious, Nietzschean status originating in the early-Modernist theory of art as a new religion, with artists/architects serving as high priests or even creators. From the perspective of the ontology of Modernism as a new cultural project, architects were seen as demiurges and directors of a new mass spectacle of the Modernist city,

Museum of the Warsaw Academy of Fine Arts



**Jerzy Sołtan, Modulor, drawing from 1995; original held in the collection of the Academy of Fine Arts Museum in Warsaw**





Modulor on the wall of the Berlin Unité designed by Le Corbusier

shaped in the same way as abstract graphic compositions. Strzemiński's "functionalized Łódź" as a Polish mutation of Le Corbusier's contemporary city applies Le Corbusier's models to the theory of unistic cities as unlimited in their total, boundless space, asemantic, deprived of representation. Strzemiński defines this in an old Manichean convention: as a battle between sensible, planned, logical and ordered system and senseless chaos. These speculations of the Polish primary avant-garde reveal a "virus" of pathology and deviation infecting Modernist utopias of total spatial unity, at once aesthetic, social, and ideological. Comparing the praxeology of the factory to a good government and city-machine as the necessary apparatus affecting the creation of a New Society was the reason behind Europe's architectural avant-garde movement forming ties with the totalitarian regimes of the 20th century.

### Le Corbusier's concepts in Poland

Polish Modernists copied Le Corbusier's models of the city/home-machine, intertwined with elements of German and Dutch avant-garde. However, their concepts were not fully understood; they were interpreted in terms of eugenics as a source of a moral revival of society (Lech Niemojewski), while others believed that no one in Poland understood Le Corbusier, since he was "too difficult" (Jerzy Sołtan). This likely stemmed from an inability to notice, or a desire to conceal or displace, the essence of Le Corbusier's eclectic thought, which has recently been shown to be centered around Masonic and Occult symbolism (Birksted).

In any event, people were striving to understand the phenomenon that was Le Corbusier, both from the perspective of the forms he employed and the language he used, thus shaping a new rhetoric in describing modernization processes. This new language was loquacious, restless,



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Modulor on the wall of Le Corbusier's summer workshop "Le Cabanon" in Cap Martin, France

polemic, anxious, used by Le Corbusier to "speak with an impetus of passion, pounding the reader with blocks of concentrated faith bordering on fanaticism, [...] [the faith] of puritans, iconoclasts, Anabaptists or a kind of Savonarola who desired [...] purity and power in architecture" (Jan Kleszczyński, 1926). "Le Corbusier is a seducer; he doesn't convince, but rather he enchants," wrote Niemojewski (1934), subconsciously revealing the psychoanalytical basis for the architect's output (and creative output in general), whose essence is not unlike a sexual desire to seduce, aiming to charm the viewer/reader with the overall aim of "possessing" him. Le Corbusier did in fact use an exceptionally effective strategy of avant-garde agitation and propaganda, while the language he used to write his treatises was complementary to modern aesthetic of purist architecture and philosophy of contemporary urban space guided by geometry – the basic tool of aesthetic improvement and theoretical modernization of urban space, perceived as a system appropriate for contemporary artworks. In other words, abstract geometric forms, sketched and textualized, were an externalization of the need for order and support for functional transformation of reality into a rationalized structure (Sztabiński, 1990).

### Returning to anthropometry

This perspective reveals the multitude of research topics constantly being discovered in his work. Le Corbusier is still being analyzed and interpreted in global literature; however, he was never comprehensively studied in Poland (aside from scrutiny of the significant number of achievements representing the Le Corbusier trend). The first Polish edition of one of his 47 books underpinning contemporary architectural theory took almost 90 years to be published: his canonical "Towards an Architecture" was only published in Polish in 2012 to commemorate the 125th anniversary of the architect's birth.

Theoretical reflection focuses on the central point in Le Corbusier's theory – his Modulor system, devised during the 1940s (*Le Modulor*, vol. 1 1948 and vol. 2 1949) in close collaboration with the Polish architect Jerzy Sołtan. Le Corbusier's anthropometric modular system was created on the basis of Vitruvius' canon of proportions (1st century B.C.) and its later followers (Albrecht Dürer, Leonardo da Vinci, J.B. Alberti and so on) and the golden ratio. In Le Corbusier's view, the return to anthropometry as a design basis would return architectural space to the human scale, lost in the wake of the French Revolution after the introduction of



the “abstract” metric system (in which one meter equals one ten-millionth of the distance from the Earth’s equator to the North Pole). According to Le Corbusier, the metric system was unnatural, based on a speculative measurement method, and was the main driving force behind the collapse of architectural tradition; he went as far as saying “it seems to be responsible for the dislocation and deviation of architecture, [for] displacement, disruption in relation to the object whose aim is to contain man” (Le Corbusier); we must step away from it and return to basics.

### Golden ratio

The starting point of his modular system were the proportions of the human male body as a basic canon of (all) proportions, combining the Vitruvian systematic of human measurements with the golden ratio presented geometrically or with an analytical formula: the ratio of the whole fragment to its major section is equal to the ratio of the major section to the minor section, and it is the relationship between the square, the circle and the triangle. Following Fibonacci, Le Corbusier used the golden ratio to separate three segments of the human body (foot, solar plexus, head, fingers of an outstretched hand); his model was a healthy European man of average height (175cm), with the sections measuring 108.2, 66.8, 41.45, and 25.4 cm. He used this proportion to derive measurements upwards and downwards (red series), modified by a parallel blue series derived from body height with arm extended upwards (226 cm) (Modulor 2, 1955). Doubled values of sections of the red series together with the blue series have become the basis of all proportions in Le Corbusier’s theory used both for exteriors and interiors. Musicology studies stress the musicality of the model resulting from the application of the golden ratio and the logarithmic scale (Ludwik Bielawski, 1976), as noted by Le Corbusier himself: through its dependence on the golden ratio and the practically unlimited combinations, Modulor “is a kind of a keyboard on which many scales can be played, different scales, although all their elements can be combined with their neighbors into a whole,” (Jerzy Sołtan, *The Modulor Measurement System*, 1948).

### Product of two systems

Le Corbusier distanced himself from the metric system, believing it to be alien to human nature, and taking his cue from Vitruvius he reinstated an older, anthropometric system of natural measurements as the only ones able to return architecture to the human scale. The essence of the model was based on Le Corbusier’s obsessive dream of an elementary, “new-old” human scale, leading to “everything being the result of conjugated systems: cosmic and human” (Le Corbusier, 1949). Polish Modernist and Late Modernist architects followed this rule in their designs, from major housing estates (the Linear Continuous System by Oskar and Zofia Hansen) to small-scale architecture and furniture,

firmly rooting Le Corbusier and his architectural philosophy – one of the foundations of contemporary culture – as part of Poland’s cultural landscape.

This article was prepared alongside the author’s research into the reception of Le Corbusier in Poland. ■

#### Further reading:

- Leśniakowska M. (2012). *Oczy Le Corbusiera*. [LeCorbusier’s Eyes]. In: Le Corbusier, *W stronę architektury* [Towards an Architecture]. Fundacja Architektury: Warsaw.
- Leśniakowska M. (2009). Le Corbusier i Polki. Helena Syrkus na EXPO1937. [Le Corbusier and Polish Women - Helena Syrkus at EXPO 1937]. In: *Wystawa Paryska 1937. Materiały z konferencji naukowej IS PAN październik 2007* [Paris Expo 1937 - Materials from the PAS Institute of Art Conference in October 2007]. [ed.] Sosnowska J. IS PAN: Warsaw.

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Fragment of the Berlin Unité building, designed by Le Corbusier