

# Ludwig Hilberseimer at the Illinois Institute of Technology: Architectural Education, Organic Democracy and Colonization.

Ludwig Hilberseimer's role at defining trends in architectural education in the United States is a relevant one, and deserves special attention due to its rigorous method. This article aims to cast light at his teaching experience at IIT, where he promoted an integration of urban theory and political ideals. Understood as an act of cultural colonization, architectural education appears as a powerful tool to reshape the territory in the United States and the world, as part of an ongoing process of Modern postwar globalization.

By Plácido González Martínez

It may seem paradoxical, but when asked about the names of his most influential teachers, Ludwig Hilberseimer did not mention one, but a list of books. Towards the end of his life and being the compulsive reader he had always been, he was convinced of the power of paper as an effective way of conveying knowledge, in contrast to the vanishing corporeity of old professors and the uncertainty of their variable opinions.

Nevertheless, Hilberseimer's teaching experience is quite an exceptional story within the evolution of architectural education in the United States. And following our thesis, books mattered to Hilberseimer because they provided him with ethical guidelines for the development of a curriculum. Hilberseimer specifically referred to Piotr Kropotkin's work in his interview for the *Aufbau* magazine in 1959, where he found organic and autonomous definition of society.<sup>1</sup> The civic ideals expressed by Kropotkin were transferred to the act of teaching, as an empowerment of students, both as future professionals and citizens.

By following the careers of Hilberseimer's former IIT students, we can observe how his rigorous Socratic method proved to be extremely successful. It fostered critical thinking and the constant questioning prejudices and opinions in the quest for the most successful results. But Hilberseimer's teaching strategies did not rely solely on his renowned ingenious wit. His strive to achieve an organic society also relied on the merging of theory and practice, in the didactic dimension of his urban model known as the *Settlement Unit*.

### Structure and Form: the Secrets of Practice

Defined by Hilberseimer in 1927, after his collaboration with Mies van der Rohe at the Weissenhof Siedlung in Stuttgart, the *Settlement Unit* was later published under Paul Theobald's label, in *The New City* (1944), *The New Regional Pattern* (1949), and *The Nature of cities* (1955).

< Figure 1. "A New Settlement Unit", Ludwig Hilberseimer: *The New City*. Principles of Planning. Chicago, Paul Theobald, 1944, 106.

The hierarchical scheme of the *Settlement Unit* served as a translation of Kropotkin's organic social ideals into urban forms and principles. The democratic ideals underlying its design provided a powerful ideological backing to Hilberseimer's teaching methods at IIT.

Following Mies van der Rohe's definition of architecture as "structure plus the expression of structure", the fish spine diagram of the *Settlement Unit* offered an urban structural archetype that remained undefined as of its formal expression. It showed a residential unit of minimal density, supported by a hierarchical circulation system and flooded by the overwhelming scale of the surrounding open space [figure 1].

For Hilberseimer, the *Settlement Unit* meant the accomplishment of his wish to merge city and nature, a notion that was rooted both in the mythical origins of the United States—through Thomas Jefferson's thoughts and projects—and in the philosophical basis of 19<sup>th</sup> century Transcendentalism. But, due to its character, it was meant to go beyond being a mere ideal: Hilberseimer gave life to the *Settlement Unit* expressing its structure through the four stage dynamics.

The four stage dynamics appears in Hilberseimer's projects and books, as well as in his teaching methods for the urban design courses at IIT—*City Planning*, *Applied City Planning* and *Applied Regional Planning*—, as a keystone for urban form. The starting point of this process was a state of urban chaos, which slowly evolved through the rearrangement of streets, housing and industry, until a stable final condition was reached and guaranteed by the means of the fish spine diagram. The city was shaped by the *Settlement Unit* as an archetypal chisel under the design principles of physical planning, adopting an infinite variety of forms, due to different geographic, cultural and economical factors [figure 2].

### Principles and Methods: the Act of Teaching

Hilberseimer also pursued a further understanding of organic development by means of the definition of clear design principles to be applied through a strict teaching method. This set of rules would become the only guaran-

tee for the future development of cities regarding issues such as housing and landscape, which was Hilberseimer's main contribution to Modern teaching in urban planning after 28 years at IIT.

This implied a new freedom of form, which by no means contradicts the rigid structural constraints of the Settlement Unit. As useful teaching assets, the simple set of rules that Hilberseimer established deliberately left out the issue of defining specific solutions and served as a reference for solving universal problems:

- All houses should be exposed to at least 4 hours of direct sun light during the Winter solstice.
- All residents should live within 30 to 40 minutes walking distance from work.
- All children should be able to walk to school without needing to cross any streets.

As a man of principles, these rules were essential to Hilberseimer, even if, a priori, they could also mean a complete formal homogenization of the city and its territory. Nevertheless, the influence of geography was crucial to Hilberseimer, who showed a sharp sensitivity towards landscape and an ecological approach to planning.

Hilberseimer's teaching legacy, as seen through the 48 master theses that he supervised at IIT between 1943 and 1966, shows the overall influence of these principles applied through the tireless repetition of his method. These theses always adhere to the same structure, including a historical analysis, the detection of problems, the definition of an intervention plan through the four stage dynamics, as well as the reaching of conclusions, which served as guidelines for the development of the project [figures 3, 4].

Even if this may seem monotonous compared to contemporary architectural education, its main goal was to transfer Modern principles of order to society through architectural and urban design, following a strategy of colonization. Just as the Roman regulation did for the founding of new cities, the diagrammatic character of Hilberseimer's scheme had infinite potential, transcending the mere urban scale and reaching regional planning, a field traditionally taken over by the disciplines of geography and economy.

### Chicago as a Context

Structure and form, as well as principles and method, expressed the continuity of the Bauhaus in the United States through the curriculum of the IIT<sup>2</sup> and greatly influenced the postwar American architectural education system. Nevertheless, the beginnings were modest. As founders of the new school, Mies van der Rohe, Walter Peterhans and Ludwig Hilberseimer settled in Chicago one year before the outbreak of World War II, and

spent the first years of the conflict designing this new curriculum for the Armour Institute, as well as teaching the small amount of students that did not enroll the Army.<sup>3</sup>

But after 1945 the situation in American universities, and particularly at IIT in Chicago, completely changed. By going back to college, former American soldiers were aware of their contribution to the ascent of the United States as the new superpower in the postwar geopolitical scenario. The experience and skills they acquired in the Army, especially in matters of engineering, as well as their widened international scope after campaigning all over the world, boosted college activity. Meanwhile, the arrival of international students, attracted mostly by the mythical personality of Mies, further intensified cultural debate at all levels.

Amidst this optimistic postwar context of expansion, Hilberseimer's contribution to the IIT curriculum can be interpreted as a first class tool for cultural colonization. The geographic variety of the master thesis proposals to which he was the advisor, shows the international repercussion it had,<sup>4</sup> a fact later confirmed by the careers of some of his students. Even though at IIT, as well as at other famous Modern schools, we can confirm the fact that the new generations of architects taught by Hilberseimer and Mies did not achieve the international recognition that their masters had previously received, this poses no particular contradiction. Following the ethical ideals of an organic democracy, the main goal of this curriculum was not the creation of elites, but the more ambitious challenge of educating a generation of designers who could humbly approach the needs of everyday reality.

### Conclusion

The application of principles and to create structures and forms in Modern architectural education led to the adoption of new creative methods. These methods, based upon open discussion and critiques, showcase the creation of a new generation of professionals in architectural history, the first to become active players in western globalization, guided by the democratic practices instilled in their education and political ideals.

Further adoption of these principles helped to establish a pragmatic approach, not only in the practice of architecture, but also by setting the path to a new sense of citizenship and responsibility. In this sense, Hilberseimer certainly walked his talk, showing his advocacy of pedestrian cities by walking, every class day, the 8.5km that separated his apartment at 1510, North Dearborn Street, from the IIT campus in Chicago's South Side. However, he is remembered as someone who avoided the sun.<sup>5</sup> He always preferred walking under the shade.

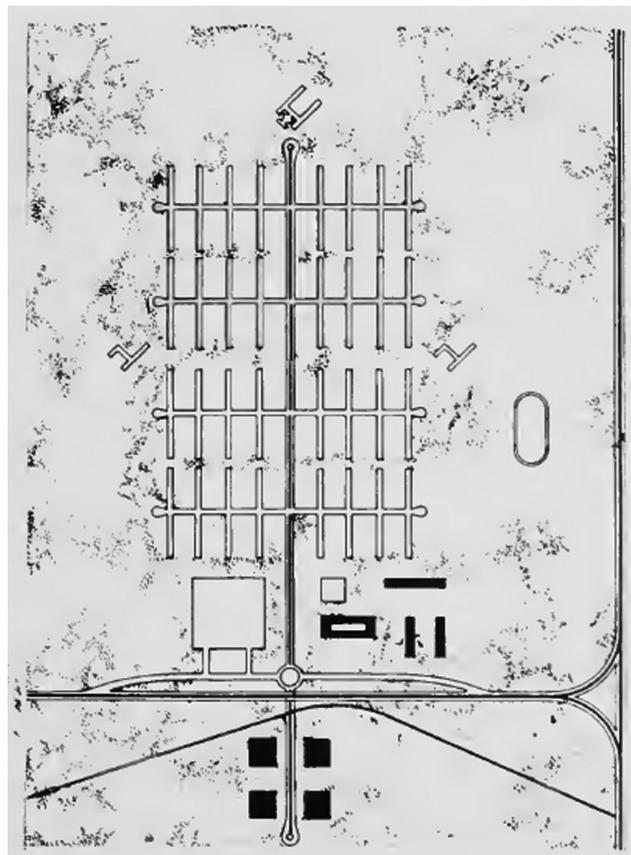
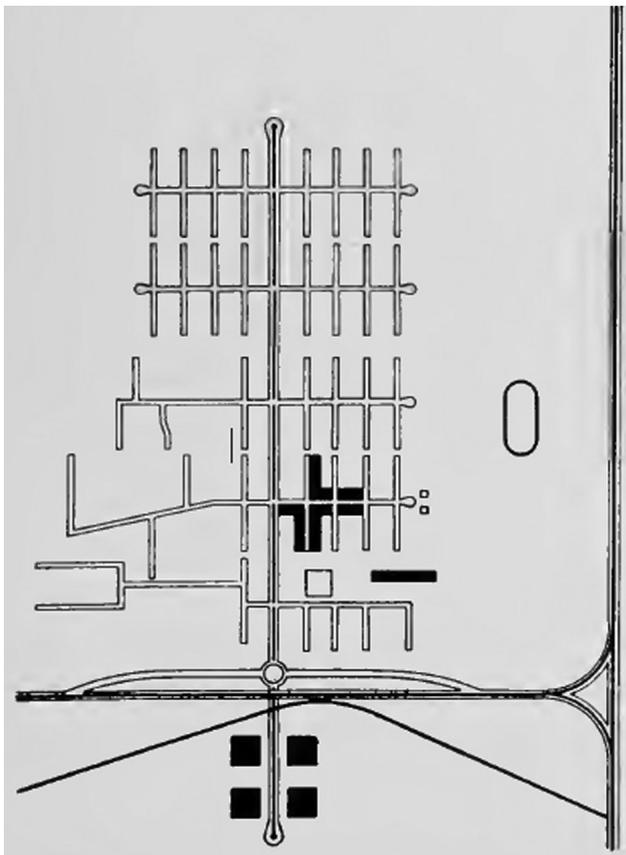
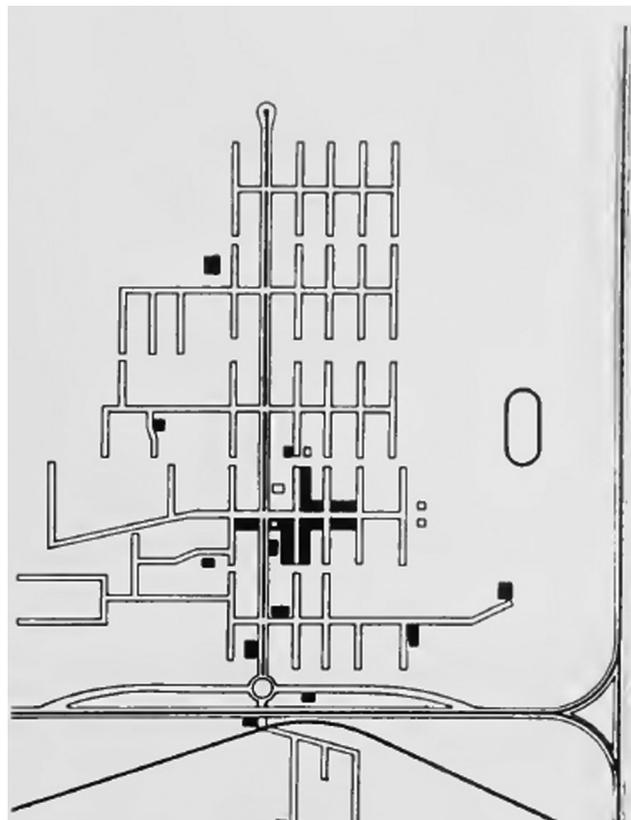
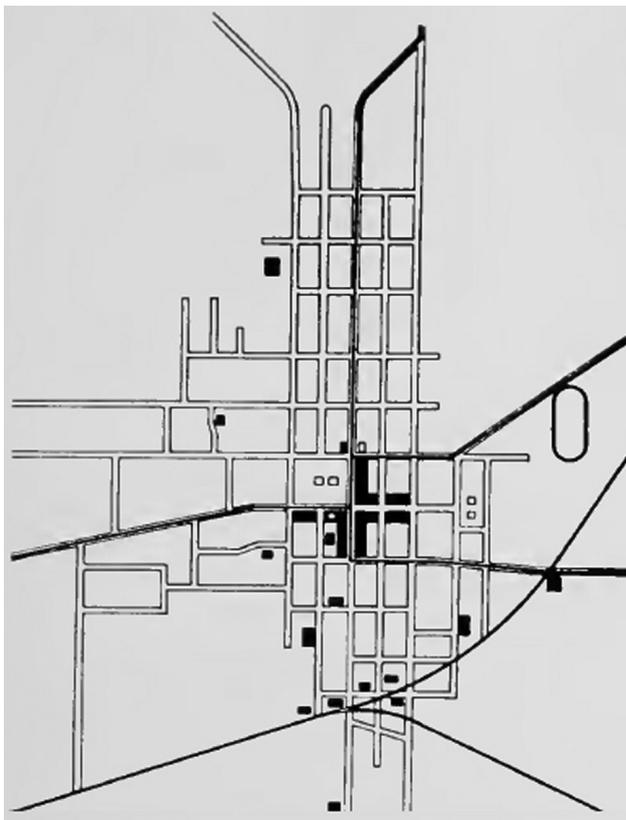


Figure 2. "Elkhorn Replanned", **Ludwig Hilberseimer**: *The Nature of Cities*. Chicago, Paul Theobald, 1955, 233.

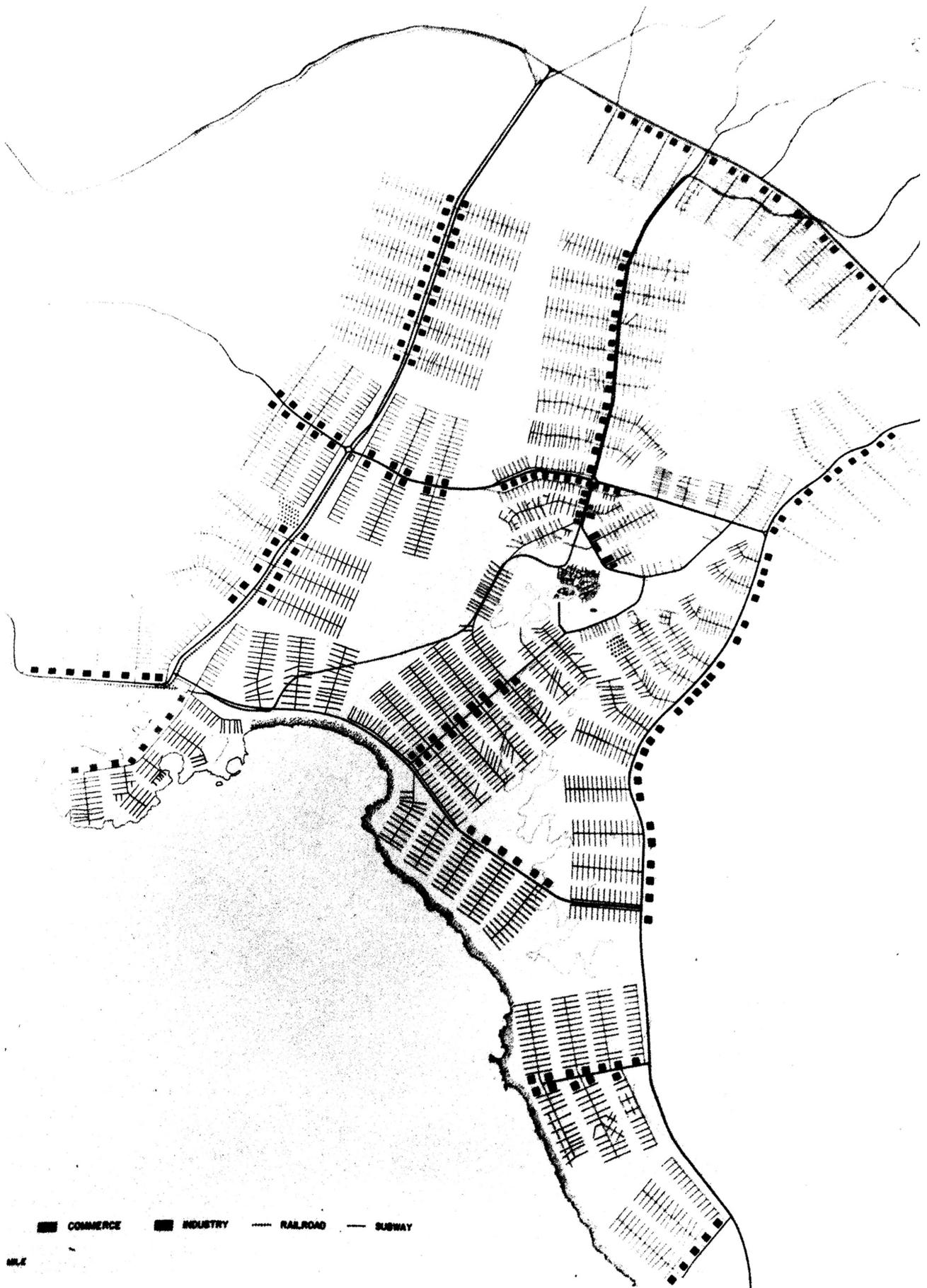


Figure 3. Myrto Costikas, *Athens Replanned*. Master Thesis (not published), Paul V. Galvin Library, Illinois Institute of Technology, 1960.



Figure 4. **Fikry Maguib Morkos**, *The Egyptian Village*. Ph.D. Thesis (not published), Paul V. Galvin Library, Illinois Institute of Technology, 1958.

#### Notes

1. This is confirmed by Hilberseimer's frequent underlining and side notes that appear in his two books at the Graham Resource Center Architecture Library at IIT: Kropotkin, Peter, *Selections from his writings*, London, Freedom Press, 1942, and Kropotkin, Peter, *Memoirs of a revolutionist*, Boston and New York, Houghton Mifflin Company, 1899.
2. A depiction of the controversy regarding the new foundation of the Bauhaus can be found at Harrington, Kevin, "Order, Space, Proportion—Mies's Curriculum at IIT", in Achilles, Rolf; Harrington, Kevin; Myhrum, Charlotte, ed., *Mies van der Rohe. Architect as Educator*, Chicago, Illinois Institute of Technology, 1986, 51.
3. Hilberseimer lectured almost all courses in those years. As well as other Universities in the United States, IIT contributed to the efforts of war through education, mainly engineering courses for the US Army Corps of Engineers, as well as urban camouflage seminars.
4. Besides the 18 master thesis projects that dealt with case studies in the United States, other locations were: Canada, Germany and India (4 projects), Peru, Puerto Rico and Greece (2 projects), and Lebanon, Ecuador, Jamaica, Egypt, Haiti, Ireland, Lithuania, Japan, Colombia, Switzerland, France and Iran (1 project). This speaks of the high degree of internationalization of IIT during Hilberseimer's years.
5. *Oral history of Jacques Calman Brownson* / interviewed by Betty J. Blum, compiled under the auspices of the Chicago Architects Oral History Project, Department of Architecture, the Art Institute of Chicago, 1996, 84.

#### References

- Achilles, Rolf; Harrington, Kevin; Myhrum, Charlotte, *Mies van der Rohe. Architect as Educator*, Chicago, Illinois Institute of Technology, 1986.
- Harrington, Kevin; Pommer, Richard; Spaeth, David, *In the Shadow of Mies. Ludwig Hilberseimer: Architect, Educator and Planner*, Chicago, The Art Institute of Chicago, 1988.
- Hilberseimer, Ludwig, "Raumdurchsonnung", *Moderne Bauformen* 34, January 1935, 29-36.
- Hilberseimer, Ludwig, "Raumdurchsonnung und Siedlungsdichtigkeit", *Moderne Bauformen* 35, February 1936.
- Hilberseimer, Ludwig, *The New City. Principles of Planning*, Chicago, Paul Theobald, 1944.
- Hilberseimer, Ludwig, *The New Regional Planning. Industries and Gardens. Workshop and Farms*. Chicago, Paul Theobald, 1949.
- Hilberseimer, Ludwig, *The Nature of Cities*, Chicago, Paul Theobald, 1955.
- L. Hilberseimer. *The Man and the Work. A Concordia*. Graham Foundation, Chicago, 21st March 1987.
- Spaeth, David, *Ludwig Karl Hilberseimer. An Annotated Bibliography and Chronology*, New York, Garland Publishing Inc., 1981.
- Paul V. Galvin Library, Illinois Institute of Technology.
- Ryerson and Burnham Libraries, Art Institute of Chicago.

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