

THE CITY IN THE LANDSCAPE : ALFRED CALDWELL'S BROADER PERSPECTIVE ON URBAN DESIGN

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ABSTRACT

Alfred Caldwell was among the first full-time American professors Mies van der Rohe hired at the Illinois Institute of Technology (IIT). Many have admired Mies's architecture since the 1920s, and know that his ideas were also transmitted as a professor, first at the Bauhaus in Europe and then as Director of the Department of Architecture at IIT. Caldwell, a practicing landscape architect and protégé of Jens Jensen, is perhaps less widely known, but was a major influence on IIT's program especially in the areas of construction, landscape, and architectural history. Caldwell completed a Master of Science in City Planning with a thesis entitled *The City in the Landscape: A Preface for Planning*, which can be considered a manifesto of both his professional ideas and IIT's planning pedagogy. In addition to his own works, Caldwell collaborated with Mies and architect Ludwig Hilberseimer, Director of City and Regional Planning at IIT and former Head of Building Theory at the Bauhaus, on the design of built works which left behind artifacts representing the ideal of "the city in the landscape." This communication examines the broader perspective on urban design influenced by the symbiotic disciplines of architecture, city-regional planning and landscape as manifested in the individual and collaborative built work and pedagogy of Caldwell, Hilberseimer, and Mies.

KEYWORDS

Alfred Caldwell; city planning; landscape; urban design; Illinois Institute of Technology.



Figure 1. "The City in the Landscape", drawing by Alfred Caldwell, MS thesis 1948. Source: University Archives and Special Collections, Illinois Institute of Technology.



Figure 2. Alfred Caldwell and IIT Students at Bristol Farm, circa 1958, photograph by Jong Soung Kimm.

INTRODUCTION

Alfred Caldwell came to IIT in 1944 an award-winning landscape architect. He had been in practice for 20 years, planning beautiful landscapes for several Chicago public parks and private gardens, and his ideas were beginning to be published (Domer 1997). While assisting Ludwig Hilberseimer, then Director of City and Regional Planning at IIT, with drawings for the book, *The New City*, Caldwell began to teach undergraduate courses in construction and architectural history. In 1945, Caldwell was awarded a Bachelor of Architecture and earned a Master of Science in City Planning in 1948 with his thesis entitled *The City in the Landscape: A Preface for Planning*. *The City in the Landscape* can be considered a manifesto of both Caldwell's professional ideas and IIT's planning pedagogy. After a 22-year hiatus associated with Mies's resignation from IIT, Caldwell returned to teach at IIT until his death in 1996, adding to his teaching repertoire a landscape course. His ideas about human settlement, which advocated a deeper understanding of the connection between humanity and nature, influenced hundreds of students across the U.S. through the end of the 20th century.

1. DEVELOPMENT OF THE THEORY

1.1. Caldwell's Education

Before establishing himself as a landscape architect working for the Dubuque and Chicago Park Districts, Alfred Caldwell had worked in Jens Jensen's office for five years and spent three weeks with Frank Lloyd Wright at Taliesin East, where in his own words he learnt enormously (Caldwell 1987). While working for the Chicago Park District, Caldwell decided to get his architectural license and enrolled in a refresher course at

the Armour Institute of Technology (AIT) to prepare for the state board examination.

Caldwell had a mastery of drawing that opened the door for him to work closely with Hilberseimer helping him prepare the drawings for his book entitled, *The New City*. Caldwell's skill and collaboration with Hilberseimer preceded the opportunity to be hired as the first full-time American professor by Mies in 1944. Although Caldwell was never officially enrolled in the undergraduate course in Architecture at IIT, the administration accepted his experience related with the subjects, and awarded him a Bachelor's degree in 1945.

As a member of the faculty, Caldwell contributed significantly to the development of the undergraduate program. When Caldwell began teaching at IIT, the undergraduate degree program in Architecture was a four-year program with an optional fifth year to specialize in Architecture or City and Regional Planning. Mies's program gave students the opportunity to "acquire a basic architectural philosophy and fundamental creative principles which would guide them in their task of creating living architecture" (Achilles 1986, p. 167). The fundamental principles of Mies' architecture program at IIT were structure, space, proportion, materials, painting-and-sculpture, and their integration. In parallel, students were also instructed in general theory and professional training. Caldwell's teaching in the construction studio, with its focus on clear and authentic masonry and timber construction, as well as his special brand of architectural history and landscaping courses were a large part of the program's success.

While Caldwell was working with Hilberseimer on the book, the professor suggested he take a master's degree. Caldwell had been working around the same idea for years: how to have a good life in America, so Hilberseimer encouraged him to put his ideas together. "That is very easy to do. A few words, a few pages..." (Caldwell 1987).

Under Mies's directorship, a new Master of Science in City Planning was introduced in addition to the existing Master of Science degree in Architecture. To obtain the Master of Science in City Planning it was necessary to study the subjects Theory of Dwellings and Housing, Theory of City Planning, Theory of Regional Planning, Applied City Planning and Applied Regional Planning, all of which were taught by Hilberseimer. Additionally, students attended certain lectures on the history of city planning, art of city planning, social hygiene, national economy, statistics, real estate law and finance, and finally the preparation and acceptance of a thesis. Hilberseimer's ideas about city and regional planning naturally became part of Caldwell's thinking.

1.2. "The Hilberseimer Plan"

Hilberseimer's city planning theory represented a new chapter in urban planning that was not based on formal aesthetics and design, but on attempting to align human needs with social and technological conditions in a more sustainable and livable manner. In order to make cities better and healthier places to live, he believed that we first need to conceive of the city as part of a larger whole. Like Caldwell described:

When we began by considering the city just by itself, a multitude of other inter-related maladjustments ... soon revealed themselves. It became apparent that any valid solution of the city must be a whole solution. We must find not only a specific answer to the chaos of the city, but a general answer to the chaos of our time -- of which the city is but a part. (Caldwell 1948).

To discover what is wrong with our cities, Hilberseimer would ask "What is wrong with our world?" defining a broader point of view from which to look at the problem. He would open our eyes to contemporary cities

being dominated by commercial industry and ruled by interest, rather than reason and man's needs, as in the Agrarian villages of old (Hilberseimer 1946, p.166). City and regional planning was for Hilberseimer a means to reclaim our individual freedom by rebuilding our cities.

He advocated for planned decentralization which, as opposed to unplanned sprawl, provided an opportunity to integrate modern commerce, industry and agriculture into a healthy and sustainable urban fabric (Hilberseimer 1949, p. 136). Technology of the time also played a significant role in Hilberseimer's specific planning proposals. Greater military defensibility against the atom bomb coupled with available modes of transportation, (i.e. ship, train and automobile), called for and enabled a decentralized model of development. With careful planning, vacant land could be used to adapt and move our cities toward a more sustainable development pattern.

Hilberseimer's plan, taught at IIT into the early 1990s, refers to a planning concept based on the idea of a human settlement "unit". The Settlement Unit (Hilberseimer 1963), as it was called, dealt with and resolved the relationships of contemporary community life (i.e. living, working, and recreation) while also planning for growth. The size of the unit was based on a comfortable walking distance from home to school with a commercial center and industry located a short drive's distance. Other essential features of the unit included houses with Southern exposure to maximize daylighting, a street pattern with cul-de-sacs separating car and pedestrian modes of travel, (eliminating crossing hazards for children walking to school), and plenty of green space in and around the residential areas and tying together the commercial and industrial areas. Interconnected landscaped areas would be used for gardens and farms, orchards and meadows, forests and parks.

The settlement unit was conceived as a flexible and responsive concept, adaptable to the unique requirements of any specific community or region over time. It was a theoretical construct. The population of a unit could vary, as individual buildings themselves were conceived to be varied, with apartment buildings and houses, large and small. To accommodate growth, plenty of space was planned around a commercial-industrial corridor and new settlement units could be added indefinitely along a linear traffic artery comprised of local and long-distance streets. Hilberseimer's plan would also be responsive to site, situating air-polluting industry with respect to housing, prevailing winds and topography. Many applications of this concept were developed by Hilberseimer and students at IIT for cities around the world, with many focused on the Midwest region.

1.3. The City in the Landscape

Caldwell's affinity for nature and landscape were supported and enriched by Hilberseimer's rational approach to planning. After producing drawings for the book, *The New City*, Caldwell published a paper collecting many of the ideas shared with Hilberseimer. "The City in the Landscape" published in 1945 in the journal *Parks and Recreation*, is a brief summary of what years later became his thesis of the same title. The thesis was published in January 1948 under the advisement of Hilberseimer, the year before his next book, *The New Regional Pattern* was published. A common thread of ideas is shared.

Caldwell's thesis captures the revolutionary spirit of an educational philosophy aimed at quality of life and sustainable practices against the hegemony of industrial capitalism. Of the fourteen chapters, the first twelve are dedicated to an analysis of the city. Chapter thirteen is dedicated to an explanation of Hilberseimer's plan. Chapter

fourteen presents an application of the settlement unit concept in Chicago.

Caldwell's "Proposed Plan for Chicago" aimed to remedy five major, interconnected "maladjustments" typical of industrial cities: Smoke, a consequence of the arbitrary location of the industries in the city; Dangerous Streets, as the existing grid pattern of the city is unfit for automobiles; Traffic Congestion and Distance to Work, related to unplanned sprawl; Slums, where buildings have shut out nature and the loss of nature is a prison; and Lack of Parks, or rather, ineffectively located parks (Caldwell 1948, p. 91). To respond to all of these maladjustments at once, the proposal suggested major structural change:

Obviously we must plan the city as a whole.

The just and proper solution of parts to a whole we have called order, and it is order which the city lacks. This, it must be finally clear, is the sum and substance of all the defects. The diagram suggests how we might re-plan the city by bringing all the complex parts into some rational order. (Caldwell 1948, p. 92.)

Utilizing Hilberseimer's settlement unit concept, the proposal was to convert the existing constricted city plan to a decentralized, linear pattern which would allow for sustainable development and growth. The diagram of the city (Caldwell 1948, p. 95) shows: located east of a main traffic artery, toward the lake smokeless industries and a commercial strip parallel to the main traffic artery; away from the lake west of the artery, smoke-producing industries with the adjacent communities located such that prevailing wind directions minimize impact of smoke; and heavy industries located along the Des Plaines-Illinois River channel. An airport and central railroad are located close to the "center" of the city and minor railroad stations placed on the junction of the main traffic artery and

the lesser. Additional airports and railroad stations could be added easily in this decentralized city if needed.

We could say it was like a vine, and the parts of the city projecting outward like branches - the residential communities like leaves. We might even say that the closed end streets of the residential areas were like the veins of a leaf. It is possible to point out such comparison, for all nature is the expression of order. So, indeed, our city might be. (Caldwell 1948)

Caldwell's drawing of "The City in the Landscape" (Caldwell 1948, p. 96) shows how planning and interconnecting green spaces into both urban and rural conditions in a decentralized city pattern can provide a way for housing, industry, and transportation to remain connected with nature.

2. CONNECTIONS BETWEEN THEORY AND BUILT WORK

2.1. Gardens and parks

In his early years as a landscape architect, the influence of the Prairie School comes through. Caldwell came to appreciate the park as a meadow, which symbolized to him the prairies of Illinois -- open spaces bounded by protective forests.

From his earliest works, Caldwell's landscaping palette included the open spaces as much as the rich and varied landforms, materials and plantings. The ground and plantings, the hardscape, water, sound and light all work together to create an environment touched by humans yet reverent of nature. An autodidact understudy of Frank Lloyd Wright, the landscape architecture at Eagle Point Park and Lincoln Park both capture the spirit of the Prairie School so well that they are often mistaken for the senior master's.

In 1933, as superintendent of Dubuque (Iowa) Parks, Caldwell designed the project in Eagle

Point Park he named "The City in a Garden" inspired by the City of Chicago's motto, "Urbis in horto." The 164-acre park is located on a bluff overlooking the Mississippi River with panoramic views of the city. The project was part of an initiative to extend the use of the park into the winter months through the addition of shelters and fireplaces. Caldwell's plan introduced characteristic Prairie School ideas. Structures of split-faced Niagara limestone laid in irregular horizontal layers suggest the midwest prairie's natural geological stratification and were used alongside timber and stucco in the buildings. The distribution of the buildings in the landscape created a variety of interstitial spaces that were augmented with a variety of plantings, to create an aesthetic quality that was coherent while also rich and varied. The project earned a national W.P.A. design award in 1936, and in 2017 Eagle Point Park was added to the National Register of Historic Places.

During Caldwell's tenure with the Chicago Park District, he created landscape drawings for a number of parks including Montrose Park, Promontory Point at Burnham Park, and Jackson Park. The Lily Pool in Lincoln Park, Chicago is perhaps his best known, and one of his most treasured projects. It is said that he sold his life insurance policy to pay for flowers which he installed. The Lily Pool is a "Prairie garden" of approximately 2.5 acres with an unassuming entrance featuring a lagoon, waterfall, and council ring in stratified limestone. Stone walkways meander through plantings of crab apple, hawthorn, serviceberry, and sumac, underplanted with native viburnum and rose shrubs and woodland perennials. In 2002 the project was named a Chicago Landmark, and a National Historic Landmark in 2006.

This garden is a biographical footnote on the meaning of the Chicago Plain... The trees, shrubs and flowers planted in this garden were native to the Chicago Plain. They

represented scientifically the ecology of the region. They were those plants which, over thousands of years had achieved perfect adaptation to the environment of climate and soil. Consequently, they were at once the most beautiful and most vigorous and healthy. (Caldwell in Blaser 1984, p. 38)

2.2. Urban design and landscaping

The relationship established between Alfred Caldwell and his professors at IIT, Mies and Hilberseimer, extended beyond learning. Mies was engaged by IIT to draw up a plan for the new 30-acre campus whose final version was approved in 1941. The campus plan was based on a 24-foot, 12-foot-high floor module used not only for the planning of each building but also for their location. Mies saw in this decision the solution both for the buildings to harmonize with each other as a whole and in the course of a long construction period which would extend even beyond Mies's retirement from IIT (Blaser 2002, p. 21). The result is a system of pavilions surrounded by nature, a campus in a park. With the plan already approved, Mies invited Caldwell, still a student, to design the campus landscape.

Caldwell never fully developed a landscape master plan, however it is possible to identify in his contributions, the concepts he was working on in the forties and that, at the same time, were a result of his previous experiences. Firstly, as a Jens Jensen's protégé, he shared the idea of using native tree and plant species in order to demonstrate an appreciation of the site. All the trees are placed "naturally" around campus rather than in straight rows, maximizing the idea of freedom of space that can be also connected with Mies's spatial ideas.

According to [Mies's colleague Peter] Carter, Caldwell had found a parallel between 'Jensen's insistence on the integrity of nature

and Mies van der Rohe's insistence on the honest expression of a building's structure', so that the 'interaction between this free-flowing landscaping, with its diaphanous honey locusts and substantial hawthorn, and the pristine architecture, contributes a kind of poetry to both exterior and interior milieu'. (Haar 2002, quoting Carter, p. 73)

In the early fifties, after a substantial development of ideas in Caldwell's thesis and Hilberseimer's books, Caldwell and Hilberseimer had the opportunity to work together and with Mies on the urban renewal project, Lafayette Park, in Detroit. Trying to solve the "evils" associated with the industrial city, while bringing out its best, Hilberseimer, Caldwell and Mies approached the problem from different perspectives. Intended for middle class people, Hilberseimer planned Lafayette with three types of residential buildings, a high-rise apartment building, 2-story townhomes and 1-story rowhouses. These buildings, offering different amenities, were arranged on the edges of a clear space that Caldwell imagined as a meadow, or prairie. At one end of the clearing was a school, and on the other, a baseball diamond. Although the development was never completed, the plan comes close to being another application of Hilberseimer's Plan, where at least buildings of different scales are connected by green space and children walk to school in a park. In this project, Caldwell sought to evoke the specific spirit of the Midwestern landscape once again, using native species and integrating buildings and landscape. In the architecture of steel, glass and brick, can be seen Mies's respect for the local industrial materials.

In the hands of Mies and Caldwell, this schema is transformed into a site of lived and sensed interweavings and interrelationships between buildings and landscapes, private and public domains, enclosed and open spaces. (Waldheim 2004, p. 12)

The Lafayette Park project represents the only built collaborative attempt to solve city problems of today that combines the ideas of Mies, Hilberseimer and Caldwell. Nevertheless, Lafayette Park does not deal with the city as a whole but only a portion of it, a defined site within the city.

2.3. Caldwell's farm

In 1948, Caldwell decided to purchase a forty-acre piece of land near Bristol, Wisconsin upon which he started to build his own farm. It was the same year he submitted his thesis and a year before the collaborative Lafayette Park project. Caldwell worked with his wife, family and students on this piece of land for the rest of his life. The project was never completely finished but it should be considered an experiment in living, an attempt to make his ideas come true.

I wanted to buy a piece of land. From the experience I had before I concluded that I have to live on a farm. I have to get my living out of the soil (...) It was consistent with [decentralization], but even more with my experience. (Caldwell 1987)

According to some, the idea of Caldwell's farm traces its origins to Jefferson's idea of an agrarian democracy of land-owning farmers (Waldheim 2004). Caldwell's own actions certainly support the idea of small farms for every American family, though his theoretical ideas also provided space for industry and commerce

In Caldwell's farm, it is possible to identify some influence from each of his mentors. Caldwell had started to think about the city and its current "evils" in relation to nature since he began working with Jensen. Like Jensen, Caldwell used native species of plants and materials as well as materials in their natural state to merge architecture and landscape. The walls of his farmhouse are

native stone, whose interior cores are poured with concrete making "solid" stone walls.

This idea of integrating architecture in the landscape could also be associated with Frank Lloyd Wright's conception of Prairie houses. It is necessary to highlight that Caldwell affirmed that he was not particularly influenced by Wright's proposal for Broadacre City, however, like many others Wright defended "a piece of land for everybody" (Caldwell 1987). Wright's impact on Caldwell can be seen more so in the horizontality of architecture and also in the use of materials from the nature that surrounds it. As Wright was known to adapt his buildings to their natural surroundings, making of the two a continuous whole, Caldwell's drawings for the farm too show buildings completely embedded in the landscape.

Mies' influence on Caldwell's architecture can be perceived in the farmhouse both in terms of its clarity of construction and proportion as well as upon closer inspection of the drawings. One of the architectural problems Mies's students at IIT worked on was the development of a Court House, as he had done during his years at Bauhaus. In this kind of plan, the spatial fluidity and connection between interior and exterior is key, and was reflected in many of his projects from the thirties including the German Pavilion in Barcelona. Caldwell's plans for the farmhouse also recall the plans for Mies' unbuilt brick house in the early twenties, with walls extended into the landscape on all sides.

Finally, Hilberseimer's ideas are present in the planning for his farm, from the shared idea of decentralization that Hilberseimer had defended since his European years, to bringing attention to the importance of farms in modern city life. While Hilberseimer is best known for his ideal planning proposals, Caldwell is perhaps better known for his built work and as an activist. Caldwell proudly said:

When I made my plan for the city of Chicago, I put my farm on this plan—there's a whole series of them, a whole band of these things, so that I always say the city plans never come to anything. Thousands and thousands of city plans have been made in America and they just gather dust on the shelves and are entirely forgotten. Nobody ever initiates any of these plans. Only my city is under construction. (Caldwell 1987)

With his purchase of 40 acres of an 80-acre tract, Caldwell began to build the ideal city he proposed. Although the farm was never completed, and his Proposed Plan for Chicago was never fully realized as a whole, he said, "at least it was a try" (Caldwell in Blaser 1984, 50).

CONCLUSION

The City in the Landscape represented a broadening of the notion of Urbs in Horto at a time when urban planning was broadening from an inwardly looking, functional-aesthetic discipline to one that included social and environmental critique and advocacy, and in which transportation played an increasingly significant part. It was as much a critique of the Industrial Era itself as it was an action plan, a proposed sustainable development pattern for urban renewal. Caldwell's farm, the IIT Campus Masterplan and Lafayette Park each represent the ideal of "the city in the landscape" at different scales, and a greater role for natural landscape in the urban fabric. The landscape is an integral part of the experience of each of these places. Spaces to enjoy nature have been created within and among buildings in such proportions that the buildings inhabit the landscape rather than dominate. His adept and fervent use of native plantings demonstrates Caldwell's deep respect for the natural landscape. The historical status earned by the Mies Townhomes and Lafayette Park testify to

the high level of quality that was achieved through the symbiotic relationship formed between disciplines of city planning, architecture and landscape.

The bold ideas and works point to a broadening perspective on urban design. Caldwell looked to the landscape not only for beauty and comfort, but also to secure social welfare and individual freedom against oppressive industrial-capitalistic interests which inhumanely hold profit above quality of life. The role that cities play in this human condition was captured by Hilberseimer in quoting Patrick Geddes:

What we need is constructive peace and constructive peace simply means rebuilding this world, village by village, city by city, region by region, in terms of Geotechnic and of evolutionary ideals. We must go beyond the stone age of predatory economics and its accompaniment of mutual slaughter to the new age of co-operation, of tending our own garden and our nation's, with mutual aid as our ideal. (Hilberseimer 1949, p. 192).

The concept of a decentralized linear city embedded in the landscape emerged with respect to human, environmental and technological developments and in contrast to the practice of urban land clearing. Key to the decentralization concept was electricity, which extended previous limitations and promised a new era of great mobility:

Electricity, more and more replacing steam power, has been an important force toward decentralization. It has made production possible anywhere. It has helped greatly to make it practical, as it is today, to concentrate or to decentralize at will, both in industry and in agriculture. (Hilberseimer 1949, p. 185)

The more recent discovery that "the great economic revolutions in history occur when new communication technologies converge with new energy systems" (Rifkin 2011, p.1)

puts Hilberseimer's and Caldwell's bold ideas into context today. Whereas in the first half of the last century, locomotion became a disruptive planning principle, in this one, Rifkin forecasted that "Internet technology and renewable energies were about to merge to create a powerful new infrastructure for a Third Industrial Revolution that would change the world." He predicted a new disruptor, a new hope, connected with technology, environment and humanity:

In the coming era, hundreds of millions of people will produce their own green energy in their homes, offices, and factories and share it with each other in an "energy Internet,"... The democratization of energy will bring with it a fundamental reordering of human relationships, impacting the very way we conduct business, govern society, educate our children, and engage in civic life. (Rifkin 2011, p. 2.)

The confluence of developments in smart tech, shifting away from reliance on finite fossil fuels, enhanced availability of renewable energy seems to suggest that a new socio-economic order may be on the horizon. Revolutionary ideas from mid-century, like Caldwell's, invite us to ask, What does the growing green-industry (\$4 trillion by some accounts) mean for the now global-industrial-capitalistic order? What of land use, of nature, of decentralization and what of farms and the mixing of agriculture and industry? What does today's city reflecting our new hopes look like?



Figure 3. Wandering the Caldwell Landscape, Bristol, Wisconsin, 2018, photograph by Ron Henderson.



Figure 4. Alfred Caldwell and IIT Students, circa 1958, photograph by Jong Soung Kimm.

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