Light was an essential component in modernist architecture of the 1920s. It was enabled by large windows, enhanced by white walls, and complemented by unornamented interiors.

Sunlit interiors had been demanded because of the belief that they would prevent infectious diseases from spreading, but they also were invested with the hope of transforming the inhabitant. Dwellers would no longer be able to ‘hide’ but instead exposed and coerced towards a ‘better’ life. Adolf Behne in particular explained how limp, lazy and disinterested inhabitants were to become alert, light, and gentle beings with heightened morals and consciousness.

This notion was based on the ‘life reform movements’ that had gained popularity since 1890. Physical health, youth, an enlightened spirit and the belief that a new era was about to begin, for which light became a metaphor, were programmatic for many of these movements.

The modernist wish for ‘light’ architecture that would transform the inhabitant gives not only insights to what was aimed for, but also to what was feared: dark spaces that presumably would house an inhabitant opposite to the one who was sought. That light spaces in modernity might not so much be spaces for the renewal of man, but rather expressions of the urge to execute power and control, has already been part of Michel Foucault’s deliberations. Anthony Vidler furthermore sees the dark always persistent within the light, but dark spaces were nevertheless obliterated wherever possible in the search for self-control and re-invention. The worship of light therefore seems to hint towards a repression of anxieties caused by the political and social climate of the time.
Among the essential components of modernist architecture of the 1920s in Europe were large windows, balconies and other elements that open the architectural structure to allow light and air to enter the house. They did not become hallmarks for modern architecture out of aesthetic considerations alone. The new materials such as ferroconcrete and glass certainly allowed a fundamental change in the overall shape of buildings, but the light interior space was also believed to alter and change the inhabitant.

**Fig. 1 + 2**
Bruno Taut, *Glass-pavilion*, Deutscher Werkbund exhibition, Cologne, 1914, exterior and interior
As early as 1914 the German poet Paul Scheerbart promoted the effect of an architecture made of glass. He wrote the charming aphorism “Ohne einen Glaspalast ist das Leben eine Last.” [“Without a glass palace life is a burden”]\(^1\), which was installed on Bruno Taut’s glass pavilion in 1914, [fig. 1+2]. In the book *Glasarchitektur*\(^2\) Scheerbart described how glass would open architecture, make it lighter, and renew culture as well as the individual. The book was widely read and Scheerbart’s outlook became influential for architects, critics and historians alike.\(^3\)

Adolf Behne, for example, the well known architectural critic and proponent for the newly developing simple and objective architecture of the *Neues Bauen* [New
Objectivity], published an article in 1920 that reiterated Scheerbart’s beliefs and claimed:

The glass-architecture abolishes the insipid and persistent condition of the cosseting cosiness, in which all values become blunt and dim, and replaces it with a condition of a light consciousness, an audacious activity and a productivity of always new, always more beautiful values.4

Light architecture would transform a limp, lazy and indifferent being into an active one with keen senses and a refined way of life.

Fig. 3
Wenzel Hablik, Crystal Castle in the Sea, 1914

Fig. 4
Wenzel Hablik, Utopian Buildings, 1922

[fig. 3+4] In 1920 Behne was able not only to hark back to Scheerbart’s writings but his text was also informed by ideas that had been expressed by the architects that had formed the so-called glass chain group5 between 1919 and 1920. Buildings of glass were a central theme and revered with almost religious fervour. The illustrations in the letters that his group exchanged show crystal-shaped or organically formed utopian buildings, floating in the air, erected on the summits of the alps or on water, and were envisioned as being entirely made from glass.
The aesthetic of the crystal and the usage of coloured glass petered out soon after 1920 and was replaced by the rational and functional aesthetic of the *Neues Bauen*. Now, medical and political developments as well as popular culture, most notably the life-reform movements and the widely influential hygiene movement supported the demand for sun and light inside houses, and influenced the ways in which the architecture of the 1920s was shaped.

**Life-Reform Movements**

![Fig. 5](image)

Fidus, *Light-prayer*, oil on canvas, 1894

[fig. 5+6] A dizzying number of so called life-reform movements had gained popularity since the mid-19th century, all of which aimed at a reformation of life and at bringing it ‘back to nature’. The common denominator of these often rather dissimilar movements was a fundamental scepticism towards industrialisation and urbanisation. Individual movements might propose vegetarianism, a healthier way of dress, or were informed by mystical and spiritual outlooks such as theosophy. Among

![Fig. 6](image)

Gerhard Riebicke, *untitled*, photograph, 1928.
the most popular movements were the nudist ones which propagated air and
sunbathing as part of healthy living close to nature, and as cure for degeneration
caused by civilisation. One of best-known artists who helped popularize the nudist
movement was Fidus in his canvases depicting aesthetically pleasing, young, and
nude bodies worshipping the sun and sunlight. Scheerbart’s and Behne’s demand for
sunlight in the interior space thus reflects the ideology of a number of popular
movements that believed in the renewing and activating powers of sunlight. However,
the German Museum for Hygiene, the mouthpiece of the Hygiene Movement in
Germany, provided architects and city planners with scientific studies that proved the
benefits of sunlight and thus coerced architects into using large windows that would
allow sun penetration in each room.

The Hygiene Movement

Fig. 7
Arno Drescher, Licht und Luft in die Wohnung, teaching aid, Deutsches Hygienemuseum, Dresden, ca. 1927.

Fig. 8
Apartment in Berlin, ca. 1907

Fig. 9
Tenements in Berlin, ca. 1900
These scientific findings regarded sunlight as one of the major elements that would prevent infectious diseases, such as tuberculosis, from spreading. In travelling exhibitions the museum informed about the beneficial effects of sports, certain foods and childcare practices. [fig. 7] To air out living spaces regularly and to allow sun penetration whenever possible was one of the main educational goals. The museum also distributed books and brochures with illustrations such as Arno Drescher’s image *Licht und Luft in die Wohnung!* [Light and Air in the apartment]. A healthy-looking baby stands naked in front of an open window in which a flower grows in a pot. The dark shadow of a curtain or drape looms across the image. The shadow occupies the role as an opposite pole and emphasises the positive effect of light as well as its necessity. The flower on the windowsill in the background furthermore evokes the notion of growth.8

[fig. 8+9] In addition to these educational activities, proponents of the Hygiene Movement were also involved in advancing changes in the living conditions of the working class. The 19th-century urban tenement, which often consisted of five-storey blocks grouped around a central courtyard, did not allow sun penetration in all apartments equally and therefore was considered unhygienic and became the common enemy for modernist architectural reformatory efforts.9 The pioneers of modern architecture – who were commissioned by either a city or an institution to develop a new style of accommodation adapted for the masses and mass production – came therefore to regard sunlight as an indispensable element of modern housing.10
By the late 1920s many examples of the objective and simple modern architecture had already been built, but two events helped in establishing the perception of this architecture not as a local phenomenon but as an international movement: the erection of the Weißenhof-Estate by the Deutsche Werkbund in Stuttgart in 1927 and the founding of the International Congresses of Modern Architecture - CIAM in 1928. While the Weißenhof-Estate consisted of model houses by 16 European architects, the objective of CIAM was to disseminate modernist theories and beliefs on an international scale. Large windows and sun-flooded, open spaces were among the major elements that could be found in the houses in Weißenhof.
Moreover, the imagery in Sigfried Giedion’s renowned book *Befreites Wohnen [freed living]*\(^\text{11}\), that was published in 1929 as a result of the first CIAM conference, stresses primarily the open, sunlit and transparent quality of modern interior spaces. This topic was introduced on pages four and five where Giedion contrasted a dark 1928 prison-cell with a 1928 hospital-room.\(^\text{12}\)

This contrast emphasises the lack of space of the prisoner but does not disclose the amount of space the patient would have. The contrast focuses on light and air which the modern architecture of the hospital provides. Not only is the belief in the remedial effects of imprisonment undermined but the images also compare common housing with prison cells and the modern architecture is introduced as having curing powers, so that the imprisoned occupant of old-fashioned tenements will receive healing within the modern architecture.\(^\text{13}\) Again, the main argument proposes the healthy quality of the modern architecture for the modern man, achieved by its main prerequisite – sunlight.\(^\text{14}\)
Zeilenbauweise

[fig. 12+13] To provide sunlight wherever possible housing estates were subsequently placed facing towards the sun. To utilize sunlight best\textsuperscript{15} the number of sun hours within each apartment, as well as the changes of the orbit of the sun during the year were calculated, and also visualised in diagrams, which took account of the necessary height and distance of houses to each other.

In 1929 Walter Gropius engaged in this discussion and developed a diagram to promote the so-called “Zeilenbauweise”, an arrangement of houses in rows that form settlements similar to the pattern of barracks [fig. 14].\textsuperscript{16} Gropius’ diagram demonstrates the advantages of row houses by showing that as many tenants can be
housed as in the commonly built blocks with inner courtyard, yet there could be sun penetration in each room if a necessary distance between the buildings was ensured.\textsuperscript{17}

In a brochure that accompanied the opening of the settlement in Karlsruhe-Dammerstock [fig. 12] built by Gropius and Otto Haesler in 1928-1929, Haesler advanced these considerations. According to him, it was not sufficient simply to guarantee sunlight in each apartment. Instead, the distribution of sunlight had to be planned in accordance with the life of the tenants. Bedrooms thus had to be situated towards the east to receive sunlight during morning hours, while living rooms had to face towards the afternoon sun. Sunlight in each room was not considered sufficient anymore – the sun had to always shine on the dweller.

The intensity with which Haesler aimed at engulfing the dweller in sunlight reveals that the belief in the renewing and changing capacities of sunlight – mostly a remnant of the life reform movements – still held strong. Light was not only believed to create a healthy body but also a rational mind. This was concisely expressed in Gustav Adolf Platz’ 1933 book \textit{Wohnräume der Gegenwart} [\textit{Living Spaces of the Present}]. Together with an illustration by the architect Max Laeuger Platz explains:\textsuperscript{18}

\begin{quote}
The more reason gains ground, the more clearly the human being is able to see (or wanting to see), the lighter its rooms become.\textsuperscript{19}
\end{quote}

Platz draws a connection between the modern, light interior space and the rational mind of development of the inhabitant and proposes that an enlightened mind seeks a light dwelling.

Laeuger’s image illustrates the contemporary ideals of modern interior decoration. Inside a bare, well-lit space no camouflage-effect can disguise the human subject. On
the contrary: the reduction of colour and furniture emphasises the individual inside the room.

[fig. 115+16] Following these beliefs shadows and dark spaces were obliterated inside modern interior spaces wherever possible. A realm of light was created that would aid the individual towards rationality.

**Fig. 15**
Max Laeuger, *Visibility of the human within the room, dependant on the shapes in the environment*, drawing 1933.

**Fig. 16**
Max Laeuger, *Visibility of the human within the room, dependant of the colours in the environment*, drawing, 1933.
Criticism

The stringency with which architects such as Haesler were trying to advance this belief was soon criticised. Adolf Behne, who had so excitedly promoted an architecture of glass in 1920, was becoming increasingly suspicious of architectural concepts such as Haesler’s that were aimed at determining how a tenant should live his life. He wrote in 1930:

But in fact the human being is perceived here as concept, a figure. The individual must live and become healthy while living, and the exact dwelling-diet has been prescribed in detail. One has […] to go to bed towards east, to eat towards west and to answer mother’s letter; and the house is organised so that one cannot live differently.20

A Zeilenbau estate such as Gropius’ and Haesler’s in Karlsruhe-Dammerstock is conceived not as the adaption of architecture to modern life but rather as stubborn dogmatism that presses for an immediate change of the inhabitant to a lifestyle that has been calculated as healthy and is therefore prescribed.

The linear structure of a settlement that follows the example of military barracks signifies not only clarity but also discipline and order. The large, open windows, in which curtains and blinds were sneered at – they might catch dust and are therefore potentially unhealthy – not only allow the sun to reach every corner, but also guide the glances of each passer-by into the spaces.

Thus, contemporary critics were displeased with large windows, mainly because their transparency exposed the goings-on inside the house. So wrote a visitor of the Weißenhof-Estate:

Another one had the quaint idea to use the space between bedroom and terrace as bathroom, which is open by four glass doors towards the terrace, so that one can effectively bathe in the outdoors. Excellent, if the house stands alone. But here stands a second house just opposite. And here I think it goes a bit too far, if one has to climb in one’s own bathtub wearing bathing trunks.21
With the opening of the house the life inside it has been made transparent too and has become a “paradise for the voyeur.”

**Panopticon**

![Panopticon Diagram](image)

**Fig. 17**
Jeremy Bentham, *Panopticon*, 1785

Since Colin Rowe’s and Robert Slutzky’s book on transparency in modern architecture in 1963 much research has been dedicated to a reading of modern architecture alongside the topic of the voyeur, as well as related topics such as Michel Foucault’s theories that discuss mechanisms of control which he exemplified with the help of Jeremy Bentham’s *Panopticon* [fig. 17].

Bentham’s 1785 *Panopticon* was conceived as a novel circular prison-structure with cells that let in light from both sides. Each prisoner would therefore be exposed at all times. In the observation tower in the middle of the structure only one guard would have to be present to observe all the prisoners. The awareness of being exposed and
visible at all times alone would cause the prisoners to be fearful of the consequences of any breaching of the rules.

The settlement-structure of the Zeilenbau estate, such as the one in Karlsruhe-Dammerstock, invites an interpretation akin to Foucault’s theories of observation and control. The Zeilenbau might – in combination with large windows – also have a similar effect as Bentham’s Panopticon. In a settlement where each apartment is orientated to allow it to be evenly lit throughout the day, where each floor plan is the same, and where the straight lines of the rows of houses allow an overview of the whole lane at a glance, a self-controlling and self-disciplining urge towards ‘modern’ behaviour might develop more easily than in the dark, labyrinthine tenements of the 19th century.

It can be asked if the social housing estates of the 1920s were not only established in order to diminish breeding grounds for bacteria and to adapt the traditional tenement to a newly-developing type of factory worker, but also whether these estates reveal the wish to execute control and instigate order in a strata of society that had just recently overthrown a monarchy in Russia, who were demonstrating frequently and violently and whose political parties were gaining influence in the young democratic system.

**Conclusion**

In his study on the *Architectural Uncanny* in 1992 architectural historian Anthony Vidler gives merit to Foucault’s and Bentham’s deliberations on the ways in which transparency aids in the execution of power, but he sees the limits of this reading in that they neglect to explore dark spaces. He writes:
“… the panoptic principle, resists exploration of the extent to which the pairing of transparency and obscurity is essential for power to operate. […] In this sense, all the radiant spaces of modernism, from the first Panopticon to the Ville Radieuse, should be seen as calculated not on the final triumph of light over dark but precisely on the insistent presence of the one in the other.”

The worship of light and the utopian ideals that were associated with light-flooded interiors can be advanced by analysing what was most sought to be left behind and feared – darkness and shadows.

Dark spaces had been used in Arno Drescher’s poster and Sigfried Giedion’s book to highlight the dichotomy of light/dark as a synonym for enlightened versus ignorant, healthy versus unhealthy and modern versus traditional in an attempt to utilize darkness to instigate an infatuation with light.

Dark spaces stand for irrationality and myth and, as the psychoanalyst Eugène Minkowski explained in “Toward a Psychopathology of Lived Space” in 1933, resolve, or even devour, the body. The innate depth of dark space extends the notion of ‘I’ and therefore leads to disorientation and to uncertainty as to where the subject finds itself within space.

In addition to that, Laeuger’s illustrations exemplify that the reduction of colour and furniture helps to clearly outline the body from its surroundings [fig. 18+19] so that no mimicry-effect dissolves the human subject.
Roger Caillois had adapted the term “Mimicry” – that had originally been a term used to describe how certain species of insects merge with their environment – for literary criticism and sociology in 1935.

In his analysis he explains that the perception of space is related to the awareness of a horizontal plane – the ground –, and a vertical one, which is created by the human subject and its movements. Mimicry diffuses these coordinates since the subject merges with its environment. The subject is not the originating point of the coordinates anymore but instead one among others: “it is dispossessed of its privilege and literally no longer knows where to place itself.”27 This phenomenon of disturbance between personality and space Caillois calls “legendary psychasthenia”.

As in Minkowsky’s dark space, Caillois sees forces at work that encircle the individual, separate the body from thought so that the sensation of “self” is not clearly locatable. Mimicry thus would be tantamount to a loss of identity when the individual
cannot be distinguished from its environment. The individual itself becomes space, and dissolves. Caillois concludes:

“All these expressions shed light on a single process: depersonalization by assimilation to space, i.e., what mimicry achieves morphologically in certain animal species. The magical hold […] of night and obscurity, the fear of the dark, probably also has its roots in the peril in which it puts the opposition between the organism and the milieu.”

By surrounding the body with light a space is created where the individual can clearly locate itself. The question of ‘where am I?’ is clearly discernible, and therefore also the ‘who am I?’. In its precision and clarity it always guarantees orientation and a concept of a stable identity, which in turn gives the impression that there is also a similarly stable social as well as individual purpose and goal.

The infatuation with light and sun-flooded spaces during the 1920s can be interpreted as a symptom of the desire to offer orientation and stability, to reinforce rationality in the human subject and to gain a clear and distinct concept of who and where this subject is. Architecture was envisioned as rational and clear, as it was hoped the dweller would be too.

---


8 Vgl. Neubert, Rudolf, Der Mensch und die Wohnung (Dresden: Deutscher Verlag für Volkswohlfahrt, without date [1926]).


11 Sigfried Giedion, Befreites Wohnen (Zürich: Füssli Verlag, 1929).

12 Ibid., Caption of fig. 4.


15 See Nußbaum, 1922, 511-512.


17 Gustav Adolf Platz, Wohnräume der Gegenwart (Berlin: Propyläen Verlag, without date [1933]), 171ff.

18 Je mehr die Ratio an Boden gewinnt, je klarer der Mensch sieht (oder sehen will), desto lichter werden seine Räume. Ibid., 172.


21 Innen und außen durchdrangen sich, als gäbe es in der modernen Welt keine isolierten Angelegenheiten mehr. Das licht- und luftdurchlässige, durchsichtige Haus war gesundheitsförderlich


28 Ibid., 7, 1935.