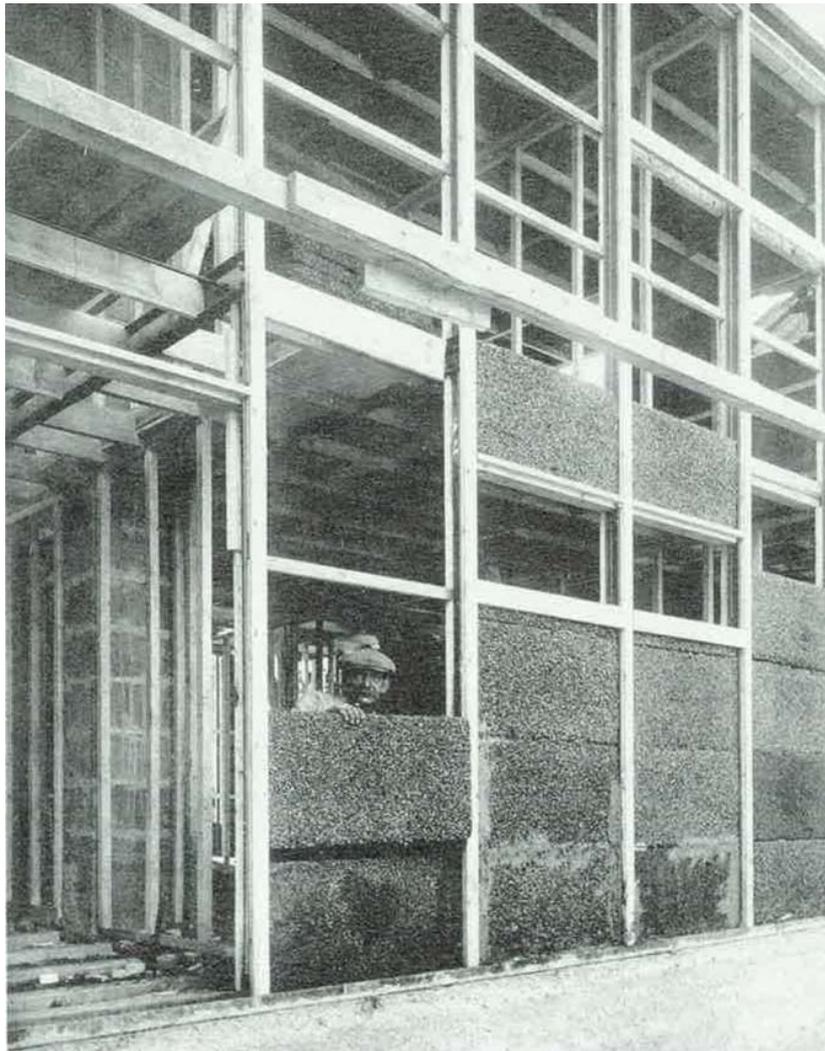


Low-cost Avant-garde? Contradictions in Industrialized Housing in the 1920s

Kathrin Siebert

ETH Zürich/Institute gta, kathrin.siebert@gta.arch.ethz.ch



ABSTRACT

Based on selected examples of avant-garde housing produced in the 1920s, I will discuss the following questions: What does the Avant-garde cost? Who is paying for the Avant-garde? Why is the Avant-garde in the 1920s interested in industrial building? At the same time I would like to question if the 'low cost' built examples in fact were affordable for workers. Examples will represent the three scales of industrialized housing: mass housing, pilot housing and case study houses.

The housing question was one of the most urgent problems to solve in the 1920s. World War One and the urbanization caused a huge lack of dwellings. Housing conditions for workers were especially unbearable. The participation of government in the process of building for the first time, by setting new laws and providing subsidy, enabled experiments in housing. The architectural avant-garde of this time, the protagonists of the Neues Bauen movement, included Walter Gropius, Le Corbusier, Ernst May, Bruno Taut, Mart Stam and Hans Schmidt. After completing the Weissenhofsiedlung in Stuttgart 1927, they built up the CIAM as a platform for their common but also contradictory and competing interests in housing: on the one hand, a desire for aesthetic change; on the other, cost reduction and an increase in production and quality. Industrialized building seemed to allow for both.

For the Swiss architect Hans Schmidt (1893–1972), economic efficiency was the top aim in his work with industrialized building methods in housing. To Schmidt, Neues Bauen was a method of (economic) production.

KEYWORDS

Avant-garde, Neues Bauen, Housing Question, Industrialized Building, CIAM

AUTHOR BIOGRAPHY

Kathrin Siebert is an architect and art historian. Since 2013 she is a PhD student at the Chair of Architecture and Art History Prof. Dr Philip Ursprung. She worked as an architect in Rotterdam and Delft. While studying at the University of Zurich, she worked as a volunteer at the Collection of Prints and Drawings ETH Zurich. Afterwards she researched and taught as assistant and lecturer at the Institute gta at ETH Zurich. She directed the teaching and research project «Urban History online. The city's architecture from modernity until today».

1 Introduction

The housing question was one of the most urgent problems to solve in the 1920s. World War One and urbanization caused by industrialization led to a huge lack of dwellings. Housing conditions for workers were especially unbearable. The urgency led to government intervening in the process of building for the first time, by setting new laws (Reichsheimstättengesetz 1920) and providing subsidy (Hauszinssteuer 1924), enabled experiments in housing. Homestead act 1920 (Reichsheimstättengesetz): was introduced to enable protected acquisition and ownership of residential property. the so-called homesteader (Heimstätter) could acquire property of a homestead (Heimstätte), but the rights of ownership were limited, to protect the owner of a homestead (state or municipal institutions). Federal house rent tax 1924 (Hauszinssteuer): Tax on income from the housing of homeowners to finance the Reichsheimstättengesetz (Homestead Act).

The architectural avant-garde of this time, the protagonists of the Neues Bauen movement, built up the CIAM as a platform for their common but also contradictory and competing interests in housing: on the one hand, a desire for aesthetic change; on the other, cost reduction and an increase in production and quality. Industrialized building seemed to allow for both.

Based on selected examples of avant-garde housing produced in the 1920s, I will discuss the following questions: What is the cost of the Avant-garde? Who pays for the Avant-garde? Why is the Avant-garde in the 1920s interested in industrial building? At the same time I would like to question if the 'low cost' built examples in fact were affordable for workers. Examples will represent three scales of industrialized housing: mass housing, pilot housing and case study houses. I distinguish between these three different scales, because I consider these three as important fields of different experiments of the avantgarde.

2 Main Text

1. MASS HOUSING (large settlement, to satisfy mass demand)

Martin Wagner and Bruno Taut in Berlin

*Siedlung Britz (Hufeisensiedlung) 1925–1930, first mass housing estate in Germany, over 1000 accommodation units.

Objectives? Production of mass housing with distinctive social objectives in order to reduce housing shortage. Investments should focus on large housing estates and industrial methods of housing construction. Affordable housing for all income groups should be created through rational mass housing.

Situation in Berlin? The housing shortage after World War One was serious. Between 1925 and 1929 the number of registered house seekers rose from 75 000 to 179 000. The demand for small and cheap apartments amounted from 100 000 to 130 000 units. The basis for new social housing was built up by Reform Building Regulations (Reformbauordnung) for Berlin in 1925. Loosening of the residential areas and clear separation of functions of the individual areas were focused and formed the whole city in different building zones: From the city center with a 5-storey construction the building density to the border regions decreased to 2-3-storey construction. Martin Wagner as city councilor for construction, from 1926 to 1933, defined key housing policy and urban planning guidelines. In only seven years, between 1924 and 1931, more than 140 000 flats were built, a construction volume unattained during the postwar 1950s. In Berlin, this was made possible through an extraordinary new financing system based on unionized cooperatives, municipal or other non-profit building societies.

Client? Building owner of Britz was GEHAG (Gemeinnützige Heimstätten AG). GEHAG was founded at the initiative of Martin Wagner by unions and cooperatives in 1924 and developed into the leading property development company not only in Berlin but in all of Germany. With their wealth of business volume and especially through the creative power of their house architect Bruno Taut the GEHAG had a strong impact on urban development and architecture of the Berlin settlement construction.

Features and costs? Small apartments with spacious light, similar as possible bedrooms and living rooms, kitchen and bathroom separately, GEHAG kitchen, good ventilation possibilities, minimum size for a single

room 14 square meters, for a flat 45 square meters, contact with nature through terraces, loggias or private garden and open spaces. We have no precise information about costs. Wagner's ideas of typing, standardization and rationalization in housing were first implemented, without, however, reducing the actual production costs. «Rationalization debates in construction have indeed led to the factory-based prefabrication, but not to any reduction in the cost of housing, the ultimate goal of these debates, so we have 'not responded to the needs'.»

Industrial building? Rationalization in construction, machinework instead of craftwork (excavator, conveyor belts, rail vehicles), strict typing and standardization. Every 1000 units are based on four different floor plans, each with 1.5, 2.5, 3.5 and 4.5 rooms. Typed components.

Inhabitants? The apartments were to a large extent inhabited by white-collar worker families (ca 50%). Reason: They had not been able to reduce the costs, as Wagner had imagined.

Propaganda? Journal «Wohnungswirtschaft» (since 1926, edited by Martin Wagner), journal «Neues Berlin» (since 1929, edited by Martin Wagner and Adolf Behne), Film «Rationalization in building industry» 1925, propaganda cars 1926, election posters SPD 1929, German construction exhibition 1931.

Ernst May in Frankfurt

*Siedlung Praunheim 1926–1929, Reichsheimstättensiedlung, 1400 accommodation units.

Objectives? The Reichsheimstätten law allowed families the purchase of their own home on favourable conditions.

Situation in Frankfurt? Serious housing shortage in Frankfurt as well. Building land was so expensive that economical construction seemed impossible.

1925: 30,000 house seekers, 467 000 inhabitants. In autumn the city parliament decided about housing program, ten-year program. Ernst May becomes city councilor for construction and settlement department head. Until 1930 12 000 dwellings were built, 2000 apartments more than planned.

Client? City of Frankfurt and housing associations: city took over 50% of the cost (50% financed with rent tax (Hauszinssteuer), 30% with loans of city savings banks, rest with grants from the city budget). The other 50% took over the housing associations (20% equity of housing companies, loans, bonds). Because of the high price of land not designated building land, but agricultural land on the outskirts were used. This land was transferred by expropriation to municipal ownership.

Features and costs? More than 15 different types of houses, each apartment was equipped with the Frankfurt kitchen and bathroom. The purchase price of a home was depending on building type between 14 000 up to 22 000 RM. Except for a basic investment of 500 RM no additional capital was required. To pay off the loan and interest from the rent tax mortgage and municipal loans had monthly between 57 RM and 95 RM to be expended during a period of 33 up to 46 years (at an average blue-collar workers monthly salary of 240 RM in 1925). May used concrete slab construction for a few of the houses in Frankfurt, but this turned out to be slightly more expensive than brick work and much less satisfactory in keeping out moisture.

Industrial building? Ten test houses were build in prefab (Frankfurt mounting method). Large block construction. Standardization of components. Components to furnishings were cataloged in the Frankfurt Register. As Frankfurt standard a program was developed that normalized for apartments components such as windows and concrete elements and creatively matching commodities such as doorknobs, furniture, dishes. For this purpose, a Department of typing (Abteilung für Typisierung) was established.

Inhabitants? 60% civil servants, independent professions, teachers, 26% workers, 24% clerks.

Propaganda? Journal «Neues Frankfurt» (since 1926), various books, films.

2. PILOT HOUSING (exhibition/model settlement, several prototypes)

Weissenhofsiedlung in Stuttgart, 1927

Objectives of (Werkbund)Exhibition? The decisive impetus for the construction of the Weissenhofsiedlung was a small group of young progressive artists and architects from the region. They wanted to bring in a contribution for solving the housing problem, which should be placed in the public discussion. The city of Stuttgart has been obtained for the plan. The specification of the city was to create cheap and healthy housing for modern city people.

Situation in Stuttgart? The political and economic situation in Württemberg normalised after World War One faster than in other places and also the construction industry recovered quickly. In 1919, a new local building law came into force, which would serve as the basis for the acquisition and control systems of land for the now-starting development projects in Stuttgart. Whereas only 8469 dwellings were built between 1919 to 1927 in Stuttgart, 18730 dwellings were built until 1932. Resistance to the Werkbund project came from all sides as it was being planned: the left abandoned the project, because only villas for the rich and too little social progress would be planned. The right felt uncomfortable with the international orientation, for them it was too un-German and too liberal.

Client? Role of Werkbund? The Werkbund was commissioned by the city and suggested a model settlement and two exhibitions. One exhibition should present international plans and models of new architecture. Another exhibition should present objects of home furnishings and home economics. Mies van der Rohe was chosen by the Werkbund as artistic director and project manager of the model settlement. The selection of the 15 architects made clear the ideological manifestation: architecture should be presented as a new style.

Features and costs? In 1926 the Stuttgart City Council had to decide on a housing programme of 16.6 million RM. 1600 apartments were to be built, of which 60 were planned for the Werkbund project. The final cost details of the local site manager and the final cost calculations of the city varied greatly. Contract price was 940 122 RM, calculation of Döcker 1,016,694 RM, final costs counted by the building department of Stuttgart amount to 1,537,521 RM. So the costs determined by the city are half a million higher. Figures from the RFB: annual rent Mies 1100 to 1800 RM, Oud 1800 RM, Stam 2400 RM, Gropius 3000 RM, Corbusier 5000 RM.

Oud: 5 one family houses with 4rooms and 73sqm each. Building costs 114 300 RM, rental costs 2 RM/sqm, 150 RM/month.

Construktion/Equipment? Concrete Structure System Kossel, north-south oriented, economic groundplan, built-in cupboards, hand-wound, exterior spaces.

Le Corbusier consciously ignored the guidelines. He came not to build cheap apartments, but he used his buildings to demonstrate his aesthetic ideas to the public. During the exhibition, a brochure about his two houses was published. Here his 'Five points towards a new architecture' are explained (post as a supporting foundation, free plan, free facade, horizontal window, roof garden as a living room).

Industrial building? Mies changed the original principles for the Siedlung while working on it. At the end it was no longer about methods of rational mass production but more about form and style. Gropius and May continued to take the lead in prefabrication. Gropius's steel-framed house with panels of cork, asbestos, and fiber was the most completely industrialized house in the exhibition. May, who had wanted to bring the Werkbund exhibition to Frankfurt, erected on the experimental exhibition grounds next to the Siedlung a demonstration of his concrete plate system that stood as a rebuke to the more conventional methods used in the Siedlung itself.

Inhabitants? The Weissenhofsiedlung remained after completion of the exhibition in the possession of the city, so that the houses are preserved in their original state (order of the Mayor). The apartments were rented by the city. As tenants, only those families were eligible who have an attitude of appreciation for the Weissenhofsiedlung (order of exhibition management to the Mayor). Because of the relatively high rents, only households with a secure and not too small income could afford to move here, mostly self-employed, senior officials, doctors and artists.

Propaganda? Innovative design of posters, brochures, catalogs and books. Responsible for the propaganda was the press and advertising department of Werkbund Exhibition.

3. CASE STUDY HOUSES (single project, singular prototype)

Hans Schmidt, Haus Schaeffer in Riehen, 1927–1929

Who is Hans Schmidt? For the Swiss architect Hans Schmidt (1893–1972), economic efficiency was the foremost aim in his work with industrialized building methods in housing. He successfully argued to include economic points in the first CIAM-congress in 1928, which went against Le Corbusier's approach, who was fighting for his five aesthetic points. To Schmidt, Neues Bauen was a method of (economic) production. Schmidt's typological work in the 1920s was committed to the search for the most affordable, smallest, and most efficient housing. His work was shown on the second 1929 and the third 1930 CIAM-congress about Accommodation for the Subsistence (Wohnung für das Existenzminimum) and Rational Land Development (Rationelle Bebauungsweisen). But finally and he failed economically. Claims for compensation because of construction faults of some of his experimental built icons of Swiss Neues Bauen had been so high that his partnership with Paul Artaria had to be declared bankrupt in 1930.

Objectives? Schmidt's objective on the one hand was to build a one-family-house for a private client. But on the other hand he had a secret idea while doing this project. Actually he developed a prototype of for settlement of townhouses. Therefore the project was shown in 1929 at the 2nd CIAM Congress in Frankfurt presenting dwelling for the subsistence. Schmidt never mentioned his idea to the client and so he could develop his personal ideal and sell it to 'rich' people. The house can also be seen as a critical comment on the two-family-house of Le Corbusier in the Weissenhofsiedlung. Schmidt uses the metaphor of 'Wohnford'. His interpretation is less playful and artistic than Le Corbusier's, but rather consistent in optimization of the land-use type and the strict differentiation of functions.

Situation in Basel? Only in face of the extraordinary housing shortage in 1918/19, there were attempts toward a coordinated housing policy and related subsidies by the federal government, cantons and municipalities. But the federal subsidies were cancelled in 1924, followed in the early 1930s by the municipalities and cantons. Only thanks to municipal financial assistance during the interwar period did nonprofit cooperatives become a supporting pillar of the housing supply. In Basel, cooperatives also built rental housing. However, predominantly single-family townhouses were created and sold to residents. In 1927, the construction industry again started to boom. Decreased construction costs and mortgage rates made building profitable, while rents rose.

Client? Private clients.

Features and costs? The floor plan is clearly separated by function. In contrast to the spacious interior design in the living area in the ground floor a concise space distribution was aimed on the second floor. The five bedrooms are lined up like sleeper berths along the corridor. Corridor and rooms are separated by built-in cupboards (see Corbusier). Unfortunately there is no precise information about the costs.

Industrial building? The architects tried to typify their floorplans to industrial standards to produce the house on the conveyor belt. This represents the idea of 'Wohnford' (Schmidt adopted the term of Oud). The supporting steel skeleton was infilled with concrete slabs (Bimsbetonplatten) and a brick layer isolated the house. Construction took just seven months. Sliding window with iron frame and cemented double glazing have been specifically developed and patented. It was the first application of a firmly cemented double glazing in Switzerland. However, the cementing solved already in the first few years, so that the windows have been replaced by single-glazed panes, which then drew massive insulation problems.

Propaganda? The house was presented in the journal «ABC Beiträge zum Bauen», edited by Schmidt himself and at the 2nd CIAM exhibition in Frankfurt.

3 Conclusion

Standardization had been attacked from the first years of its expanding use as a threat to the creative, individualistic soul. For some progressive architects industrialized building seem to be the only expression of avantgarde and future. Other progressives focussed aesthetic questions independently from building methods. The Avantgarde of the 1920s was divided into these two parts.

But there were also economic reasons for these fears in the later 1920s. Unemployment continued at high levels throughout the decade, and workers and their unions felt threatened by the fanfare over laborsaving

methods. Resistance was particularly strong in the building industries, where skilled craftsmen predominated, and industrialization had far to go. Stonemasons, bricklayers, and roofers spoke through their professional journals against the concrete and frame structures and the tarpapered, flat roofs of the Neues Bauen. The Avantgarde focussed not only form, style and building methods, but also in these social conditions.

By the late 1920s and early 1930s, it had become apparent that rationalization in housing was not reducing costs or improving quality significantly, as we have seen in the presented examples. And we have also seen that rents in most housing projects remained too high for the working class.

With the failure of the new housing programs to reduce costs or improve standards in the late 1920s, some modern architects renounced or qualified their faith in rationalization rather than, like Gropius and May, advocating still more of it. Bruno Taut was one of those heretics. A few years after praising rationalization (for its ethical virtues), he concluded that it would save little compared to the costs of financing new housing. And Martin Wagner, though remaining more confident that mass production could reduce building costs, came to believe that interest rates also had to be lowered if cheaper housing were to be produced.

In conclusion I would like to sum up seven important facts influencing the development in the 1920s and may be discussable for today: 1. Regulation of the housing market (funding through subsidies, taxes, laws, measures regarding landownership) 2. Need for new/affordable housing 3. Development of new materials and construction systems 4. Innovative individual personalities 5. Architects in political key features 6. Openness to new ideas (new society concepts, financing systems, architectural and urban designs) 7. Marketing.

References

Engelberg-Dočkal, Eva von, J. J. P. Oud. Zwischen De Stijl und klassischer Tradition. Arbeiten von 1916 bis 1931, Berlin 2006.

Henderson, Susan R., Building Culture. Ernst May and the New Frankfurt Initiative 1926–1931, New York 2013.

Homann, Klaus u. a., Martin Wagner 1885–1957. Wohnungsbau und Weltstadtplanung. Die Rationalisierung des Glücks, Ausst. Kat., Berlin 1986.

Jäger, Markus und Wolfgang Sonne, Großstadt gestalten. Stadtbaumeister in Deutschland, Berlin 2015.

Kirsch, Karin, The Weissenhofsiedlung. Experimental Housing built for the Deutscher Werkbund, Stuttgart 1927, Stuttgart 2013.

Miller Lane, Barbara, Architektur und Politik in Deutschland 1918–1945, Braunschweig/Wiesbaden 1986 (orig. Architecture and Politics in Germany 1918–1945, Cambridge Mass. 1968)

Miller Lane, Barbara (Hg.), Housing and Dwelling. Perspectives on Modern Domestic Architecture, London/New York 2007.

Nerdinger, Winfried (Hg.), L'Architecture engagée. Manifeste zur Veränderung der Gesellschaft, München 2012.

Pommer, Richard, Weissenhof 1927 and the modern movement in architecture, Chicago 1991.

Quiring, Claudia (Hg.), Ernst May 1886–1970, München 2011.

Reichsforschungsgesellschaft, Bericht über die Siedlung in Stuttgart am Weissenhof, Berlin 1929.

Reichsforschungsgesellschaft, Bericht über die Versuchssiedlung in Frankfurt a. M. Praunheim, Berlin 1929.

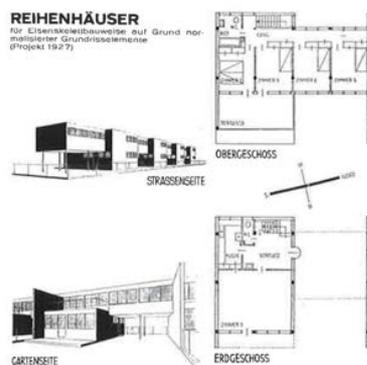
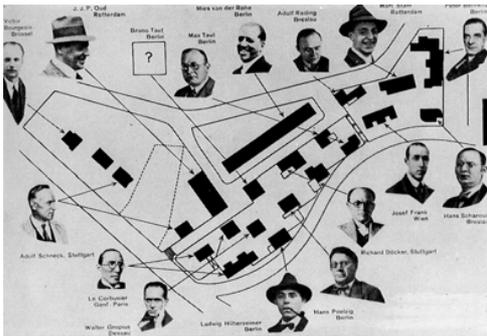
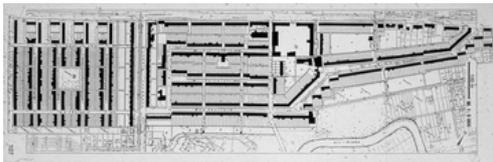
Scarpa, Ludovica, Martin Wagner und Berlin. Architektur und Städtebau in der Weimarer Republik, Braunschweig/Wiesbaden 1986.

Schulz, Günther (Hg.), Wohnungspolitik im Sozialstaat. Deutsche und europäische Lösungen 1918–1960, Düsseldorf 1993.

Suter, Ursula, Hans Schmidt 1893–1972. Architekt in Basel, Moskau, Berlin-Ost, Zürich 1993.

Ullmer, Manfred und Jörg Kurz, Die Weißenhofsiedlung. Geschichte und Gegenwart, Stuttgart 2006.

Images



One of the main characteristics of avant garde was going against the academic understanding of art, the imposed rules on what an artwork should look like and the way it should be produced. First starting as portraiture photography in photographic studios, the relatively low cost of the daguerreotype led to a general rise in the popularity of portrait photography over a painted portrait. Photography as a medium was arguably avant garde in itself, since having a portrait taken was no longer the prerogative of the very rich. By the late nineteenth century, many photographers have rejected traditional settings and started to expand the genre of pictorial photography and promote it to High Art.