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***Kleinwohnung vs Existenzminimum: Social  
Housing Types from Inter-war Years***

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## ***Kleinwohnung* vs *Existenzminimum*: Social Housing Types from Inter-war Years**

**Alessandro Porotto**

### **Abstract**

The interwar period was particularly crucial for urban policies in Europe because it was characterized by an intense architectural and programmatic debate concerning the form of the city and the production of social housing. Of the European experiences *Das rote Wien* (Vienna, 1919-1934) and *Das neue Frankfurt* (Frankfurt am Main, 1925-1933) developed the most convincing typological solutions in answer to issues raised by housing problems in the nineteenth century. In this perspective, the Viennese *Kleinwohnung* (small flat) and the Frankfurt *Existenzminimum* (minimum dwelling) correspond to two alternatives, but complementary, dwelling types. The objective of this paper is to draw a comparison of these opposite architectural types according to the following criteria: dimensions, distribution, and spatial composition. Despite their evident differences, both are the result of a modern and rational approach for designing the affordable housing as well as for promoting a new living culture (*Wohnkultur*). The main concern is the achieved comfort: for example, by adding the entrance hall, the equipped kitchen, the toilets, and an efficient organization of rooms. They constitute an improvement of the hygienic conditions, but also the accomplishment of a democratization program, which means to eliminate the distinction between social classes. The analysis is realized using critical re-drawings of the houses plans in order to get the highest graphic homogeneity. Therefore, the aim of this study is the critical comparison of a selection of case studies from an architectural point of view. Architectural historians and critics have often neglected or observed in an ideological perspective these examples. Today, looking at those the typological solutions means a new approach for a better comprehension and a wider viewpoint of 1920s' social housing experiences. The comparative approach that animates this paper allows the analysis of several case studies through homogeneous tools. The systematic use of redrawing, stresses the key role of some architectural solutions, which are still today in the centre of housing debate.

**Keywords:** Comparative approach, Housing typology, New Frankfurt, Red Vienna, Social Housing.

## Introduction

The policies of social housing in Europe during the inter-war years produced several architectural experiences in different cities, in order to address the housing issue and speculative system of the nineteenth century. In particular, the dwelling shortage, *Wohnungsnot*, paved the way to formulate intervention strategies: «The *Wohnungsnot* is revealed in three main points: the overcrowding, the health risks, and the high rents» (Kähler, 1985: 302). Furthermore, at the end of First World War, the main housing projects were designed in an extremely delicate historical context from a political, economic and cultural point of view.

We can identify two main models, which, beyond their peculiarities conceived, however, the relationship between architecture and the city as the connection between spatial organization and social practice (Panerai et al., 2004). In this perspective, several European architectural experiences dated 1920-1930 have an essential role in the field of architecture and society yet. Taking into account the contributions to the housing debate and the considerable number of dwellings built, Austria and Germany carried out the most convincing results. The so-called *Das rote Wien* (Red Vienna) is a particularly significant example, while of the German urban initiatives *Das neue Frankfurt* (New Frankfurt) is one of the most remarkable. In this last one «the link between the municipal urban policy and architecture reaches a level rarely equalled in other German cities» (Panerai et al., 2004: 90). Specifically, both cities adopted two alternative typological models of social housing (Kähler, 1985): on the one hand, the large courtyard block (*Hof*) in Vienna, on the other hand, the row houses in slab formation (*Siedlung*) in Frankfurt. In this sense, «Vienna and Frankfurt are the extreme polarities of the history of social housing in Europe in the first decades of the twentieth century» (Ortelli, 2013: 192).

The two cities developed their housing policies by considering the relationship between urban morphology and typology. Despite two models being opposed, the design of different types is always linked to the research for the most adequate dimensions for the modern housing. It is clear already from the title of this paper that the comparison takes place between the model of the Viennese *Kleinwohnung* (Bobek and Lichtenberger, 1966) and the theory of *Existenzminimum* carried out in Frankfurt (May, 1929). Two terms outline as well as two different way of thinking dwelling issue, but German adjective “*Klein*”, as well as noun “*Minimum*” refer likewise to a general idea of “reduction in dimensions”. This is linked to a typological evolution from the point of view of composition and distribution of housing space. Both had the common objective of extinguishing the housing shortage and, at the same time, of improving the quality of urban dwelling. The issue of the dwelling size is evidently linked to studies about comfort and it represented a collective vision of society. Due to this reason, the typological research in the inter-war years marks a new paradigm, literally a new chapter in the history of the social housing. Therefore, the interest in comparing the *Kleinwohnung* and the *Existenzminimum* models consist in focusing on dwelling typologies: they have profoundly influenced the evolution of modern living and still today they show their effects.

Few comparative studies provide a complete image of the European architectural experiences of the Twenties (Tafuri and Dal Co, 1976; Kähler, 1985). In particular, the typological comparison between different urban contexts requires specific analytical tools from the architectural domain. It does not intend to revise the historical facts, rather to deduce valid principles for contemporary housing and urban issues. The comparative perspective is based on re-drawings (including quantitative data of housing types) carried out with the highest possible degree of homogeneity.

From a graphical and methodological point of view, the exhibition *Die Wohnung für das Existenzminimum*, held in Frankfurt (1929) on the occasion of the II International Congress on Modern Architecture, is here the main reference (CIAM, 1930). This event had «the task of presenting in a clear way and in the most concise and organized form the iconographic material relating to the minimum dwelling in the main countries » (Kaufmann, 1929). Even there the theme of the dwelling typology is therefore exposed expressing a comparative approach. «There is no picture, no photograph, no graph, no building or furnished dwelling model, as in all previous exhibitions, but above all plans [...]; all is at the same scale and sufficiently large, following an absolutely identical process in the drawing style, with the indication of all the most important data relating to the habitable surfaces, necessary for a comparison [...]» (Kaufmann, 1929: 213).

This study proposes to analyse the main typological principles, clearly stated in the housing programs, and it adopts an architectural point of view to examine a selected number of case studies, in order to highlight the differences between program's intentions and the complexity of projects' solutions. In this way, it is possible to show inherent architectural qualities in both social housing models and to deduce some considerations for contemporary perspective.

### **Typological Guidelines**

For both cities, the publications concerning the housing policies had a crucial role. The legitimacy of the adopted urban policies and the demonstration of their results find space between the pages of books edited directly by the official organs and the architectural magazines of the same name *Das neue Wien* (DnW, 1926-1928) and *Das neue Frankfurt* (DnF, 1926-1931). The most evident difference is the structure: the Viennese publications are characterized by a purely political approach, while those from Frankfurt propose ourselves as a theoretical tool of architecture (Grassi, 1975). It is no coincidence that in Vienna the texts' authors were somehow exponents of the socialist administration, while *Das neue Frankfurt* magazine became an international *milieu* that involved architects, urbanists and experts on the theme of the housing. This aspect also explains the widespread distribution and success of the Frankfurt publications, by contrast with the local scale of the Viennese ones.

In particular, there are two texts that reveal the importance of typological research in the designing process for new and modern dwellings. In both cases, they reported the initiatives carried out during the building program:

in Vienna, *Die Wohnungspolitik der Gemeinde Wien* (Gemeinde Wien, 1929) was published at the end of the second five-year plan for housing policies; in Frankfurt, Ernst May presents the constructed *Siedlungen* and elaborated projects in *Das neue Frankfurt* (May, 1930).

The common starting point concerns the critical conditions of urban fabric and dwelling that the speculation system had given rise in the second half of the nineteenth century. Therefore, it is important to note that the logic behind two respective architectural ideas was based on an in-depth knowledge of urban conditions and the set of problems related to housing. In this perspective, it is clear that both architectural experiences considered the dwelling type as the most efficient instrument for constructing city and for addressing poor hygienic conditions of urban fabric. As a consequence, the typological research conducted in Vienna and Frankfurt corresponded to the success of urban policies: at the same time, the adopted architectural model and the degree of typological variations were intended to satisfy housing demand from a quantitative and qualitative point of view.

In Vienna, «the municipality has tidily and progressively approached its purpose of realizing as many new dwellings as possible: and it was never lost the goal of building healthy and sufficiently spacious houses. [...] it has always tried to provide dwellings, even in smaller dimensions, of all functional equipment to save and make it easier to use» (Gemeinde Wien, 1929: 31). In the same way, the Frankfurt purpose was «satisfying at the same time the greater housing demand due to the rise of new families after the rise of weddings and immigration. Second, the problem of the redevelopment of the residential areas of the old city was to be solved» (May, 1930: 21).

The accomplishment of these intentions required, first of all, an architectural choice. The choice of which housing model to be used came from a criticism directed at the spatial organization of the speculative building of the nineteenth century. The *Hof* and the *Siedlung* constitute a radical position that involves a set of fundamental distributive and compositional principles, which were capable of rationally answering to the housing issues.

In the new residential buildings «the construction system with a corridor was excluded; each dwelling can be reached from the staircase and each floor has four small apartments. Consequently, the number of staircases is higher. Each house is provided with a toilet with running water, which can be accessed by a small entrance. The kitchen is provided with running water. There is no longer any living room lit indirectly. The kitchen also has a window directly to the open air, on the road or on the large courtyard.

In the poor families the kitchen is of great importance as a living room; so much more important, therefore, are good lighting and ventilation» (Gemeinde Wien, 1929:45).

These principles can be defined as “spontaneous” reaction dictated by the critical observation of the pre-existing city and, above all, by economic, timing and logistics needs. Another essential point is that in the same publication the Viennese administration seemed in a certain way to adopt *Siedlung* model: in addition to some colonies of single-family houses, the final part of the text is a wish for greater use of this housing model (Gemeinde Wien, 1929).

On the contrary, Frankfurt typological study is linked to the *a priori* choice of the building type itself: «The ideal residential form, as the most

natural, is the single-family house. It guarantees the domestic peace and an intimate life to the family, [...]. Only this dwelling type, allows the direct connection of every single house with a garden [...] » (May, 1930: 36). Therefore, the attention is focused on the spatial articulation, in order to « first of all conceive harmonic plans » (May, 1930: 37). It is fair that in the technical office headed by Ernst May a group of collaborators worked exclusively to the design of dwelling types (Mohr and Müller, 1984). For this reason, the rigorous typological study published in the pages of *Das neue Frankfurt* (DnF, 1929) assumes almost “scientific” connotations, so that constituted an experimental open-air laboratory. The guidelines for defining dwelling types confirmed the methodical character of the whole approach used in Frankfurt:

- 1) The distribution of rooms is such that domestic economy processes are carried out with the least amount of energy [...].
- 2) [...] dwelling must be arranged so that it is also comfortable. This will not depend only on the shape of the rooms and their respective position, but especially on the penetration of light and the sunlight in the dwelling.
- 3) Plans of all multi-family houses are oriented so that possibly all the bedrooms receive the sunlight in the morning and the living rooms receive the afternoon sunlight. [...]
- 4) The dimensions of the main family living rooms emphasize its importance in contrast with the other rooms. [...]
- 5) The kitchen is fully equipped, which are designed already under construction, allowing the rational exploitation of the limited space available. The organization of single parts is based on a rational use of the kitchen. [...]
- 6) There is a need to avoid, building a sufficient number of rooms, that parents have a shared bedroom with the adult children. [...]
- 7) The three-room dwelling is the average one for the mass of the less well-off people. It can be designed perfectly in an area of 44 square meters. This type features a separate bedroom for parents and children. [...]
- 8) No dwelling should be without toilet. And as soon as possible it should exist, even in the smallest home, at least a bath tub or a shower. The bathroom should be between the bedrooms and be accessible through a hallway.
- 9) Each house must be equipped with a cellar and a storage room. [...] .  
(May, 1930: 38)

Following the principles for designing dwelling types, we can distinguish that in Vienna the focus was mainly on distribution systems, while in Frankfurt the interest went to spatial organization of internal environments. However, in both cases, types suffer an ellipse: from object of liberal-capitalist speculation of the bourgeois era, the dwelling becomes the social instrument of the fundamental right to housing (Kähler, 1985).

## Typological Comparison – Vienna

The typological guidelines, developed in Vienna and Frankfurt, were not only fundamental in improving social housing from a theoretical point of view. To understand the importance of the type within housing policies, it is also essential to observe the concrete conditions of the buildings. In this way, it is possible to demonstrate how much the general statements of housing programs correspond to a great variety and typological flexibility, as well showed by most of the dwelling.

Beyond the spatial quality of the apartments, in the Viennese buildings the position of the staircases inside the courtyard is the starting point for the change of paradigm. On the one hand, this aspect reflects a different relationship with the city (Kähler, 1985); on the other hand, it represents a more complex articulation that means a passage from the public space to private apartments. The courtyard's intermediate space has a positive effects on collective life and functioning of the entire housing complex.

The *Stiegen* (staircases to the apartments) are the main functional distribution elements. As already mentioned, the guidelines state that four apartments are served on each floor. Although this is the most common layout in all Viennese *Höfe*, there are some examples that show the possibility of distributing more apartments. The most emblematic case is the staircase at the intersection between two wings of the Schüttau-Hof (1924-1925): the circular staircase distributes six apartments per floor, without giving up natural lighting and altering the central structural wall (see Figure 1). Despite the complexity of this distribution system, the apartments arrange their distribution along the depth of the building, which means from a mono-oriented type to a double-oriented one. The complexity of this system is also visible in the geometry of the corners, where architects aimed to guarantee the natural lighting and ventilation of the staircase and each room of the apartment as well.

Looking at the apartment, another improvement in the living quality of the *Höfe* consists in the design of entrance hall (*Vorraum*), of which there are different configurations. The *Vorraum* «was also an interstitial, transitional zone mediating the passage from public to private space. [...] But its importance was not really quantifiable. It added little space to the apartment and could not be considered an additional room. It did, however, add a grace note to the proletarian dwelling, an interstitial zone not only between inside and outside, but often also between the newly internalized toilet and the social living space of the apartment itself; Something inessential that improved the dwelling's quality. [...] the entrance hall became a controversial featured of the new proletarian apartment» (Blau, 1999: 182). Still looking at the Schüttau-Hof, only few apartments present the entrance hall; in actual fact most of the cases one enters directly in the living room. Often the *Vorraum* is connected to the toilet, in order to separate them from the living kitchen (*Wohnküche*); in many situations the toilets are completely isolated from the entrance hall: in the east-west wing of the Bebel-Hof (1925-1926) we can find both examples on each floor (see Figure 2). In this case, the entrance hall assumes a key role into spatial sequences and also it enlarges its dimensions (3 sq. m.); instead, the *Vorraum* in the type of north-south wing



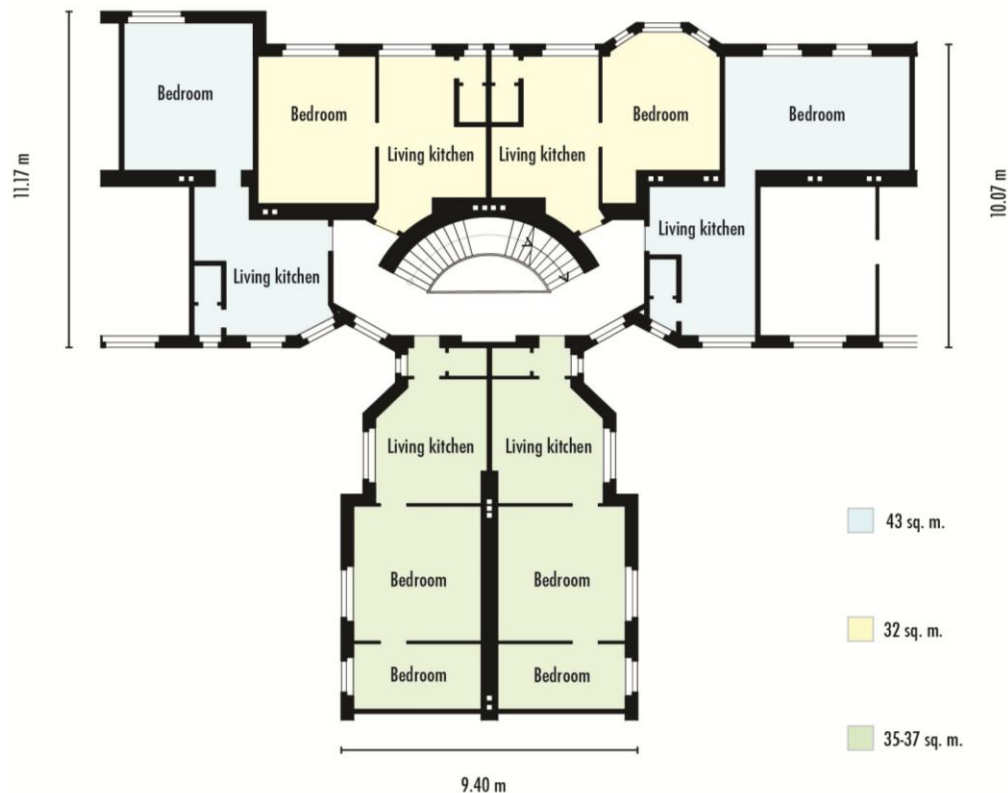
constitutes a joint space being able to transform the apartment in a double-oriented type (see Figure 3). In these last examples, the toilets are accessible from the living kitchen and are alongside the façade wall. In particular cases such as Professor Jodl-Hof (1925-1926), this setting system permits to shape sculptured volumes that characterize the whole housing complex (see Figure 4). On the contrary in all Viennese instances the toilets have a smaller surface (in fact inside the apartments there were only toilets, while the showers were installed in collective spaces); nevertheless adding them inside the apartment constituted an another important improvement in the overall dwelling comfort. In general way, the toilets are symmetrically placed into strategic points, for example: at both sides of the staircase, in correspondence of dividing walls between apartments or alongside the structural wall of façade.

The kitchen also plays a fundamental role in the spatial composition. Notably, some kitchen features influence the size of the room and the spatial sequence inside the apartment. Most of the *Höfe's* kitchens were designed according to *Wohnküche* principles that consist of modern equipment, but, above all, they were designed «to make the best possible use of the available space and to make the kitchen easier and less labor-intensive to operate. The new *Wohnküche* was to be more efficiently planned according to the Taylor work method - a method, claimed by the officials, which had great advantages for the housewife» (Blau, 1999: 183). It is worth mentioning the project for *Wohnküche* (1922) elaborated by the Viennese architect Margarete Schütte Lihotzky, before she moved to Frankfurt where she started to work with Ernst May. In this case, the kitchen area consists of the so-called *Kochnische*, which is usually installed in-between the toilet and the façade wall. Since 1926 the kitchen became an independent room in the apartment, showing one of those typological changes to adapt the apartment according to the *Neues Bauen's* living standards (Weihsman, 2001). In Karl Seitz-Hof (1926-1931) the *Wohnküche* was replaced by a kitchen separated from the living room (*Arbeitsküche*) and directly allocated by the *Vorraum* (see Figure 5).

The application of the *Kleinwohnung* model and the construction system (central structural wall) prevented a real Dwelling orientation was not only a priority for the Viennese architects. First of all, the construction of the *Höfe* within the urban fabric did not provide the ideal conditions for sunlight; secondly, the courtyard layout and the urban forms adopted implied several typological exceptions and specific corner solutions. Another important aspect is the relationship between housing and the courtyard: in most of the cases, the Viennese apartments did not provide special architectural elements in the transition between private and collective spaces. Starting from 1927 the large courtyard blocks explored the combination of balconies and loggias, as in the example of Karl Seitz-Hof. This modification enlarged the surface of the house and also offered a direct relationship with the green space of the *Gartenhof* achieving a greater comfort. Concerning dimensions, the general instructions indicated that until 1926 the units presented two standard sizes: the 38 sq. m. type, composed by entrance hall, toilet, living kitchen and one bedroom; the 48 sq. m. type included one bedroom more (Gemeinde Wien, 1929). Due to criticisms received at the International Federation for Housing Town

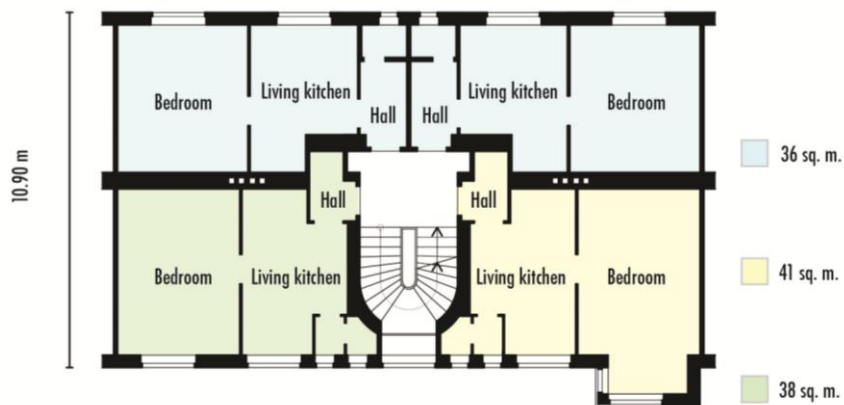
Planning in 1926, three other types of apartments were built: the 40, 49 and 57 sq. m. types (Gemeinde Wien, 1929). The real examples show, on the contrary, a great degree of variety. Indeed, looking at the Schüttau-Hof, Bebel-Hof and Professor Jodl-Hof, the apartments consist of entrance hall (about 2 sq. m.), toilet (1 sq. m.), living kitchen (about 15 sq. m.) and bedroom (18-20 sq. m.), with a total surface of 35-40 sq. m. Instead, the other type with an additional room (9 sq. m.) ranges between 44 and 47 sq. m. Karl Seitz-Hof was built after 1926 as mentioned previously. Indeed, it has more generous apartments, due to the different spatial organization and distribution. The smaller type (around 40-42 sq. m.) has an entrance hall (3-6 sq. m.), toilet (1-1.5 sq. m.), kitchen (7-8 sq. m.), living room (18 sq. m.) and bedroom (10 sq. m.); the type with an additional room (8 sq. m.) has a mono-oriented configuration (47 sq. m.) and others have double aspect exposure (57 and 61 sq. m.). Despite the explicit objective was developing new types by using parameters similar to *Neues Bauen* (e. g. increasing the dimensions and the number of rooms) it is important to note that the total surface area did not change significantly: the main changes concerned the new autonomous kitchen and consequent rational layout of the apartment plan, probably influenced by the examples that Ernst May and Margarete Schütte Lihotzky realized in the same years.

**Figure 1.** Re-drawing of Schüttau-Hof Apartment Types, Vienna



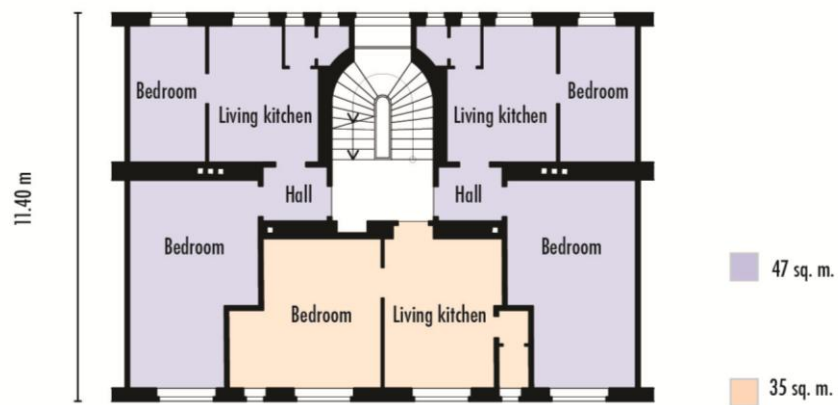
Source: © Alessandro Porotto.

**Figure 2.** *Re-drawing of Bebel-Hofeast-westapartment Types, Vienna*



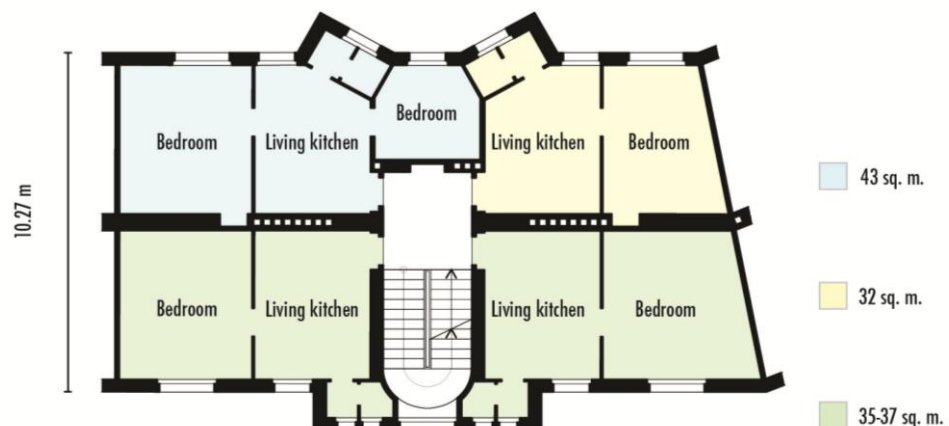
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**Figure 2.** *Re-drawing of Bebel-Hof North-south Apartment Types, Vienna*



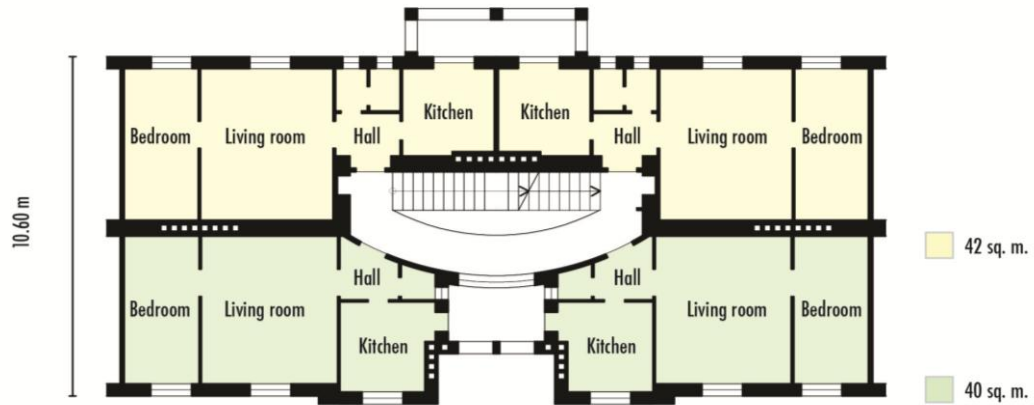
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**Figure 3** *Re-drawing of Professor Jodl-Hof Apartment Types, Vienna*



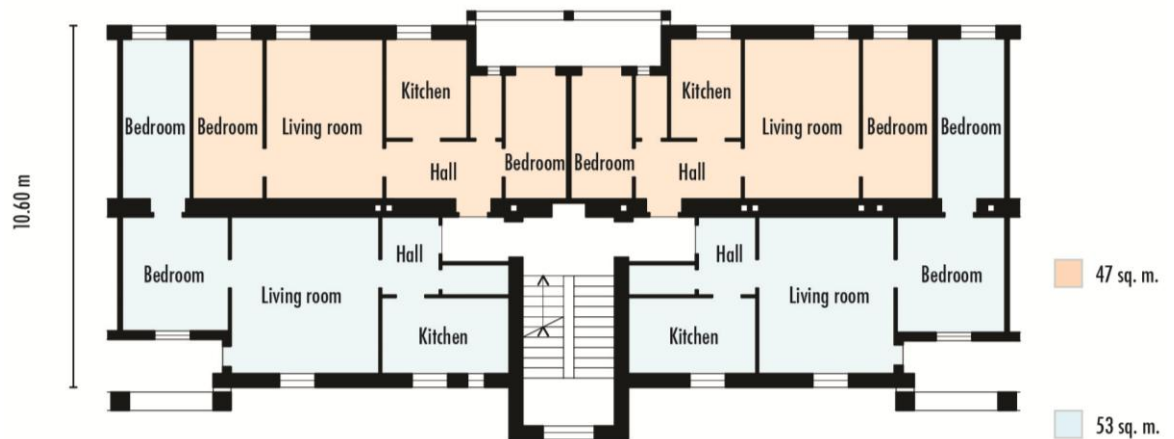
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**Figure 4.** *Re-drawing of Karl Seitz-Hof Apartment Types, Vienna*



Source: © Alessandro Porotto.

**Figure 5.** *Re-drawing of Karl Seitz-Hof Apartment Types, Vienna*



Source: © Alessandro Porotto.

### Typological Comparison – Frankfurt

The Viennese apartments have evidently a smaller surface than the German *Siedlungen*.

The core concern of typological research in Frankfurt consisted in row house type and its repetition in slab formation: on the one hand, the interest focused on the efficiency of the domestic spatial sequences in the single unit; on the other hand, on the repetition and variation of housing types. Therefore, the main purpose was the control at the different scales of all dwelling's elements, in order to achieve the highest level of rationality.

From this point of view, the 70 sq. m. row house with garden was viewed as the most appropriate type where the best housing quality and the appropriate spaces to the different functions of domestic life (Mohr and Muller, 1984).

The criteria, which drove Frankfurt architects, were profoundly different from Viennese ones: indeed, row houses were designed by precise studies about orientation, sunlight and reduction of construction costs. In contrast to

the Vienna projects, in Frankfurt the relationship between hygienical requirements and surface decrease was controlled by objective factors that allowed a typological standardization. In this way, architects guaranteed the same living benefits to all *Siedlung* inhabitants.

«The development of types of housing units and their grouping in terrace-houses or blocks of flats served the purpose of both providing similar and equal quality housing for all social classes and of reducing building costs. The typified floor-plans, developed according to functional criteria, and the equipment with space-saving elements such as central heating and wall cupboards, allowed a reduction in the floor space. The typical 3-room flat was 65 instead of 75 sq. m. as it was until then. Due to the increasing economic pressure from 1929 onwards, a further reduction in the living area was necessary. The so-called minimal flat came into being with 40-43 sq. m. for 4 persons. This was only possible in more and more movable elements such as sliding doors, folding beds, tables on wheels, etc.» (Dreysse, 1988: 4).

The instructions expressed by Ernst May in 1930 as well as the standardization of housing typologies produced a total of 21 dwelling types, as well documented in the drawings of in *Das neue Frankfurt* magazine (May 1930). The composition of one family houses and also those for several families was evidently affected by the number of family members and, consequently, the number of bedrooms.

Frankfurt experience distinguished from Vienna one also because Ernst May and his collaborators translated dwelling features into different identification codes which demonstrated his “scientific approach” (May, 1930). The code consists of two components: the alphabetical abbreviation represents the type of dwelling and family that can be accommodate; the numerical digits indicate sequentially the number of rooms and the total surface in square meters. For example, the code EFAKI 5.86 means *Einfamilienhaus für Kinderreiche* (one family house for a large family); specifically the apartment has 5 rooms with a surface of 86 sq. m. In addition, plans include the measures of the façade, the depth of the house and the surfaces of each room.

However, observing the residential buildings, rarely the types were constructed as those shown in the publications, in fact May and his collaborators designed many typological variants.

The *Siedlung Praunheim* (1926-1929) is a project which consisted of three stages of development, hence it is a typological experimentation laboratory. Dwelling types used in different parts of the group layout reflect the evolutionary process to get a rational organization and a diminution of construction costs.

The first phase adopted three 3-storey types with roof terrace (see Figure 7). They are assembled according to the site topography and the sunlight orientation: consequently, there are a type for the north side facing the road and another one for the south side. Between these types there are no substantial changes in spatial composition, which on the contrary it is evident in other cases. At the ground floor the small entrance (2 sq. m.) is connected directly to the private stairway and to the living-dining room (14 sq. m.), which is connected to the kitchen (7 sq. m.) and a room (9 sq. m.) on the garden side. At the first floor the stairway distributes through a passageway (*Flur*) the parents’ bedroom (15 sq. m.), the one for children (9 sq. m.) and the bathroom (4 sq.

m.). The second floor is exactly divided into two equal parts by a large multi-purpose space (17 sq. m.) connected to the roof terrace (17 sq. m.). The dwelling has a total surface area of approximately 80 sq.m.

The second phase of development introduced the Frankfurt prefabricated construction system of concrete slabs: for this reason, the northern 2-floors type (75 sq. m.) is completely different from the southern one. In this circumstance, the stairway conditions the spatial organization, which stands parallel to the façade, dividing the house into two parts on each floor in order to have a better sun exposure for the largest main rooms (see Figure 8). Consequently, at every storey there is a continuous path around the stairway. At the ground floor the entrance communicates only with the living room (24 sq. m.), which is separated from the dining room (7 sq. m.) and the kitchen (5 sq. m.). The upper floor is composed, as in the previous example, from a bedroom for parents (20 sq. m.), a children's room (11 sq. m.) and a bathroom (4 sq. m.).

In the third phase of development the investment costs had to be further reduced due to the pressure of economic problems. For this reason, it was reasonable using the same 2-floors type (see Figure 9), reducing living areas and standards (for containing costs about half were constructed in brick, the other half in prefabricated slabs). Indeed, the width of the house decreased from 5 meters, as in the previous types, to 4.26 m, getting a total surface of 56 sq. m. The typological rationalization is also possible by introducing a more compact stairway, which defines the limit between two distinct functional parts. At the ground floor, the entrance (4 sq. m.) serves directly the kitchen (6 sq. m.) on the one side and the living room (18 sq. m.) on the other side; at the upper floor the spatial scheme is repeated, but by replacing the previous rooms with the bathroom (2.5 sq. m.), a small bedroom (6 sq. m.) and the parents' bedroom (18 sq. m.). The simplicity of composition, the spatial optimization, and the reduction of the distribution surface are not the weak points of the project, rather they are typological and architectural solutions conceived to address the difficulties that the theoretical guidelines face in the design process.

The most famous settlement of *Das neue Frankfurt*, the Siedlung Römerstadt (1927-1928), is an example of mixed building construction (*Mischbebauung*). However, the predominant type is the one-family house, designed in two 2-floors types for the northern side (see Figure 10) and the southern side of the road (see Figure 11). At the ground floor the northern type (88 sq. m.) has a generous entrance (7 sq. m.) that becomes a distribution hall for all other rooms (however, the rooms are connected to each other, so creating a double internal circulation): the kitchen (8 sq. m.), the living-dining room (18 sq. m.) and an office room (11 sq. m.). At the upper floor the same distribution and circulation system is repeated around the stairway: it distributes the bathroom (2.5 sq. m.), the parents' bedroom (18 sq. m.), the children's room (12 sq. m.) and a small additional room (4.5 sq. m.). Even in this case, we find the addition of the corridor circulation, the bathroom and the other rooms are connected to each other. The southern type (76 sq. m.), on the contrary, is designed with more rational characters and influenced by solar exposure. Here, the ground floor is similar to the third phase of Praunheim, but it presents with a larger façade width (5,30 m). The bigger room's dimensions are particularly visible at the entrance (6 sq. m.) and in the living room (25 sq. m.), while the kitchen maintains a regular surface (6 sq. m.). Similarly, at the upper floor the

stairway requires a corridor (3 sq. m.) to distribute a bathroom (4 sq. m.), a bedroom for parents (20sq. m.) and a smaller bedroom (10 sq. m.). In both types, the interior distribution occupies an important portion of the total surface: in the first case, 12 sq. m., while in the other one 9 sq. m. Although this aspect is a peculiar spatial quality, at the same time, Römerstadtdwelling types show to belong to a period in which the *Existenzminimum* ideas were not still perfectly developed.

The highest level of typological research in order to reduce the construction costs, rationalize the rooms composition and offer the same comfort conditions was achieved in the Siedlung Westhausen (1929-1931). Only one 2-floorstype (see Figure 12) had been applied with an original square shape (7.50 in length and 7.00 m in depth). At the beginning the dwellings were designed as single-family houses, but the economic crisis pushed to realize them in a two-family version with one flat per floor. Consequently, the spatial schema is repeated at each level with a total area of 41 sq. m.: kitchen (4 sq. m.), living-dining room (18 sq. m.), bathroom (4 sq. m.), bedroom for parents (10 sq. m.) and children's bedroom (5 sq. m.). At the same time, the type shows flexible features which present a transformation of dwelling (one family), by reusing the scale for interior distribution (Dreysse, 1988). Therefore it is evident that the relationship between the reduction of dwelling surface, the rationalization of space and the reduction of construction costs and, consequently, the rental costs, provided comfortable houses even in times of economic difficulty.

One of the highest symbol of the rationalization process and the efficient use of space is the *Frankfurter Küche* (Frankfurt kitchen), designed by Margarete Schütte Lihotzky. The main principle of this kitchen-laboratory is that all food preparation functions are concentrated in a small work area (Henderson, 2013). According to the New Frankfurt vision, the preparation of meals and their consumption, two essential moments of daily and domestic life, spatially with two different spaces, but one linked to the other by the movements and paths within the house. Indeed, like the housing type, the Frankfurt kitchen project is based on the Taylor and functional methods, taking into account the distances, the actions in the kitchen, and the connections to the adjacent dining room. «Though the Viennese kitchens were neither so well equipped nor always as directly connected to the living/dining room of the apartment as in the Frankfurt plans, the concept of discrete working kitchens and adjacent living room was certainly the same» (Blau, 1999: 199).

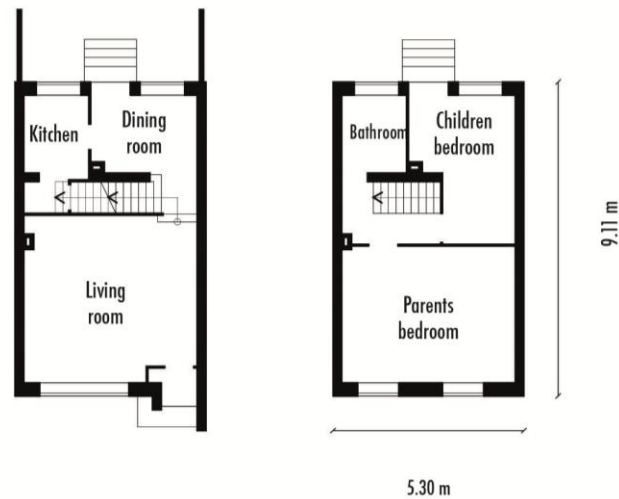
Despite the obvious differences, the two models as well as many dwelling types marked in both cities a profound “revolution” concerning the *Wohnkultur* (living culture): the dwelling comfort is not limited to the family, but it includes an entire social class. Both experiences produced the most significant examples of the Twenties and they paved the way for a modern vision and in designing social housing.

**Figure 6.** *Re-drawing of First Phase Type in the Siedlung Praunheim, Frankfurt*



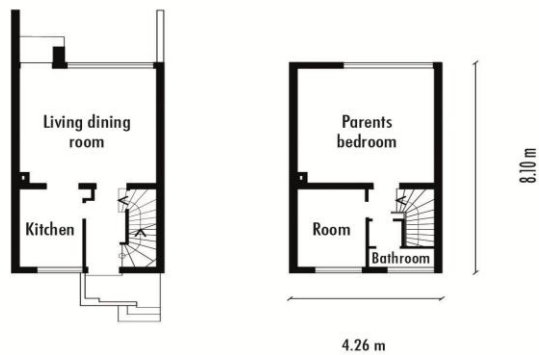
Source: © Alessandro Porotto.

**Figure 7.** *Re-drawing of Second Phase Type in the Siedlung Praunheim, Frankfurt*



Source: © Alessandro Porotto.

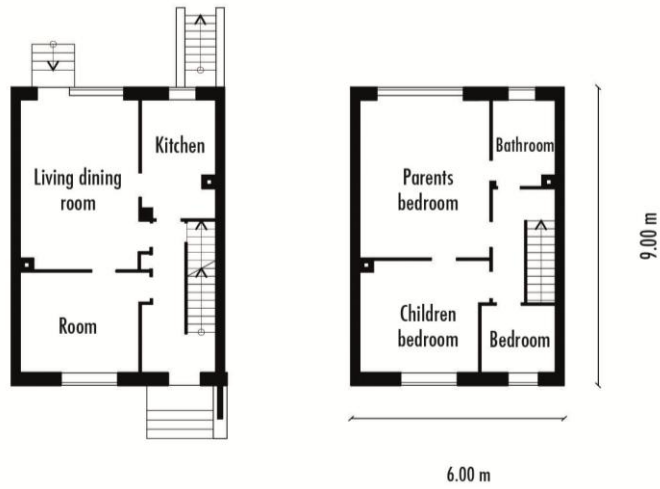
**Figure 8.** *Re-drawing of Third Phase Type in the Seidlung Praunheim, Frankfurt*



Source: © Alessandro Porotto.

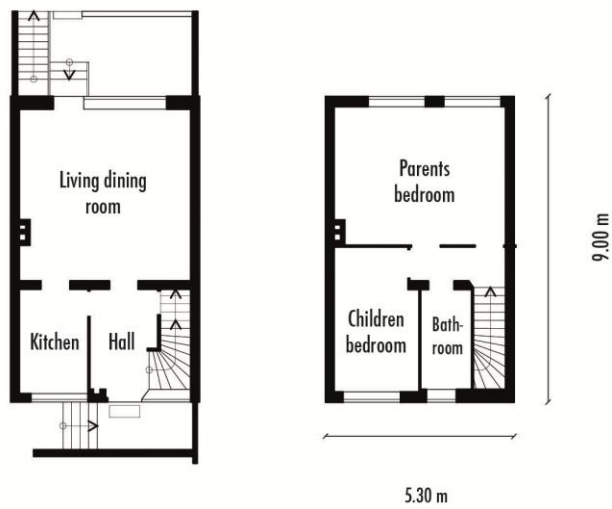


**Figure 9.** *Re-drawing of North Dwelling Type in the Siedlung Römerstadt, Frankfurt*



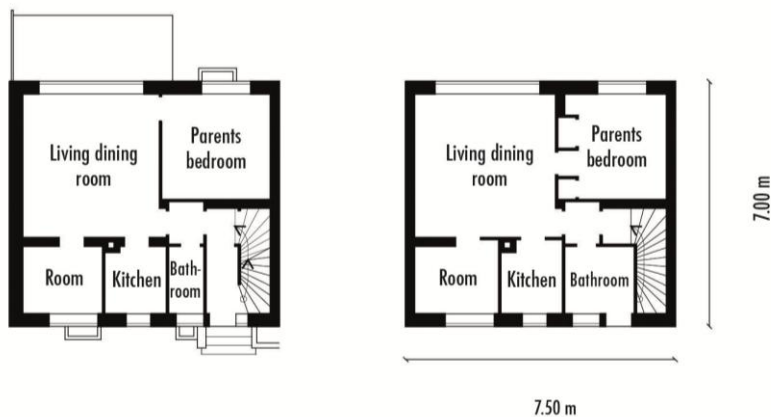
Source: © Alessandro Porotto.

**Figure 10.** *Re-drawing of South Dwelling Type in the Siedlung Römerstadt, Frankfurt*



Source: © Alessandro Porotto.

**Figure 11.** *Re-drawing of Siedlung Westhausen Dwelling Type, Frankfurt*



Source: © Alessandro Porotto.

## Conclusions

The comparison of the 1920s housing models in Vienna and Frankfurt carried out in this paper is far from a mere comparison between cities, in order to determine which one prevails over the other. The first remark is that the history of architecture passed down a distorted framework of events related to the great social housing experiences of modern period. Indeed, manuals of architectural history gave us a limited understanding of early 20<sup>th</sup> century modern mass housing projects. Architectural critics have never shown particular interest (Tafuri, 1980) or, in rare cases, they have completely discredited (Ungers, 1969) the typological research conducted by Red Vienna.

Making ideological evaluations, based on *a priori* preferences and criteria, does not reflect the real importance of those experiences. Indeed, in spite of the different trends, in general, the quality (from a dimensional, spatial and technological point of view) of the dwellings realized in that period is undoubtedly of a high standard, compared to living conditions and historical situation prior to 1918.

Typical experiments in Frankfurt were based on a precise choice of applying the row-house model, but in Vienna, every solution adopted in the *Kleinwohnung* was the opposite answer to avoid the problems caused by the intensive speculation. In both cities the housing type is the base unit to realize a social model based on the living dignity. In the case of *Kleinwohnung* and *Existenzminimum*, the concept of “minimum” «is not in the absolute sense an issue of measures, dimensions, etc. but rather relating to general terms of “civil” conditions, or indispensable ones to the social existence. [...] In this sense, the real significance of a dwelling must not be commensurate with the surface, but the number of beds it may contain (I do not mean bed as a simple furniture, but the relationship between this and a room that makes it independently accessible). [...] The “ration of dwelling” becomes the standard to commensurate every correct building design; but the ration of dwelling

finds the other “necessity” parameter in the numerical composition of the family nucleus» (Aymonino, 1971: 81).

It is important to underline once again that rational small dwellings do not coincide with a simple decrease in terms of size. The rational organization of space and technological equipment are the standards to get maximum comfort in the house. In the case studies here presented, the surfaces of rooms had to be intended as the most appropriate dimensions for a correct space utilisation to improve domestic life. This approach resolutely takes position against any speculative logic, but, mainly, refuses to apply quantitative data in a “mechanical” way.

Nowadays, where the process of housing rationalizing has been widely assimilated, the challenge is to avoid any operations that take into account uniquely the respect of numerical issues and building market laws. In particular, the economic crisis and the recent difficulties that European cities are facing housing shortage, allow us to make some further observations. The dwelling dimensions, the construction costs and the rental costs played a crucial role in the Twenties, but they are still valid today. However, the main difference is the political setting. The building programs in Vienna and Frankfurt were realized in a historical period of economic and social crisis. Nevertheless, Vienna built 63,000 apartments in 15 years and Frankfurt built 15,000 houses in 5 years. Vienna is hence a unique example in the European context: the built apartments were not sold after the World War. Consequently, the *Höfestill* belongs to the municipality of Vienna, demonstrating a strong continuity of social housing policies from Twenties to the present day (Stadt Wien-Wiener Wohnen, 2014).

The *Höfe* in Vienna and the *Siedlung* in Frankfurt are part of a rational process that is able to control and intervene in different scales. « The process is articulated as a “summation”: more bedrooms compose a dwelling, more dwellings assemble a typological unit (building), more typological units develop a settlement, and more settlements “are” the city » (Aymonino, 1971: 82). A typological research is therefore the direct instrument that has concrete effects at the scale of the private sphere of the house and at the urban one.

The work of architects of the great housing experiences of the Twenties, «despite being programmed as a moment of re-foundation, is the most advanced stage in this process begun by the city of the nineteenth century» (Grassi, 1975: 39). For this reason, Vienna and Frankfurt embody two extreme polarities, which correspond to two coherent city and housing models: «The research developed in those years is primarily about the definition of hegemonic forms on a typological level related to the city» (Grassi, 1975: 40). For this reason, the residential buildings demonstrate that they are alternative and non-substitute solutions to the historical city. Studying those initiatives does not imply any sort of nostalgia for the past, so much to claim a return to the characters of the past city. Retracing the essential steps that have characterized the construction of modern living has still a great impact on today's debate and design. These should not only be interpreted as reference examples for designing contemporary housing, rather as operative presence in urban policies. What distinguishes the experiences of Red Vienna and New Frankfurt from current initiatives is the critical potential of architecture. What those projects leave us are valid suggestions about the quality of

architecture including a particular vision of society, because housing is the element that characterizes the urban fabric and the city in general (Rossi, 1982). It is therefore essential to reconsider the type not only as an operating instrument, but as a necessity of a place and a society, because it «reacts dialectically with the technique, the function and the style, as well as with both the collective character and the individual moment of the architectural artifact» (Rossi, 1982: 41). The examples of Vienna and Frankfurt show that typology, considered as a study of types, has a significant role in the constitution of form, urban and societal ones. To sum up, these models prove that typological research, assumed as main point of urban and social policies, corresponds to a durable vision and a responsibility for the future of housing in Europe.

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