

## Mixed Building use Promotes Mixed Urbanity: Insights from Historical Use-neutral Architecture

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### 1 ABSTRACT

Starting from the idea that we no longer want to go on with the separation of housing, working and leisure within the city and its quarters—as it had been codified by the Charta of Athens and in succession by many legal advices, like the development, land use and master plans of the different cities; but which in the end led to dormitory suburbs, nightly depopulated business district and almost deserted urban open spaces, that redundantly have to be dumped to the overwhelming traffic (the other outcome of urban functional separation)—we deeply consent that *remixing* is the adequate answer. The newly planned and developed city quarters all over Europe—like HafenCity Hamburg, Seestadt Aspern—represent this new approach.

This *remixing* has to be enabled not only within the quarter or within the upper and lower levels of a house—by putting a certain number of shops underneath a traditional residential building on top—but it actually has to be enabled throughout *the whole building* and throughout every single building. And the mix has to be really richly varied and flexible at any time of the buildings' lifespan. Units shall be used as apartments and after some years—if the tenants or owners change, or if the residents' perspectives have changed—the units shall be easily converted into offices or studios or even gymnastic halls and restaurants.

The architectural concept that offers the solution to this task does not have to be complex nor does it have to be expensive. Actually Vienna already disposes such an architectural structure that evidently does fulfil the mission: The *Gründerzeit architecture* easily performs the task of being use-neutral.<sup>1</sup>

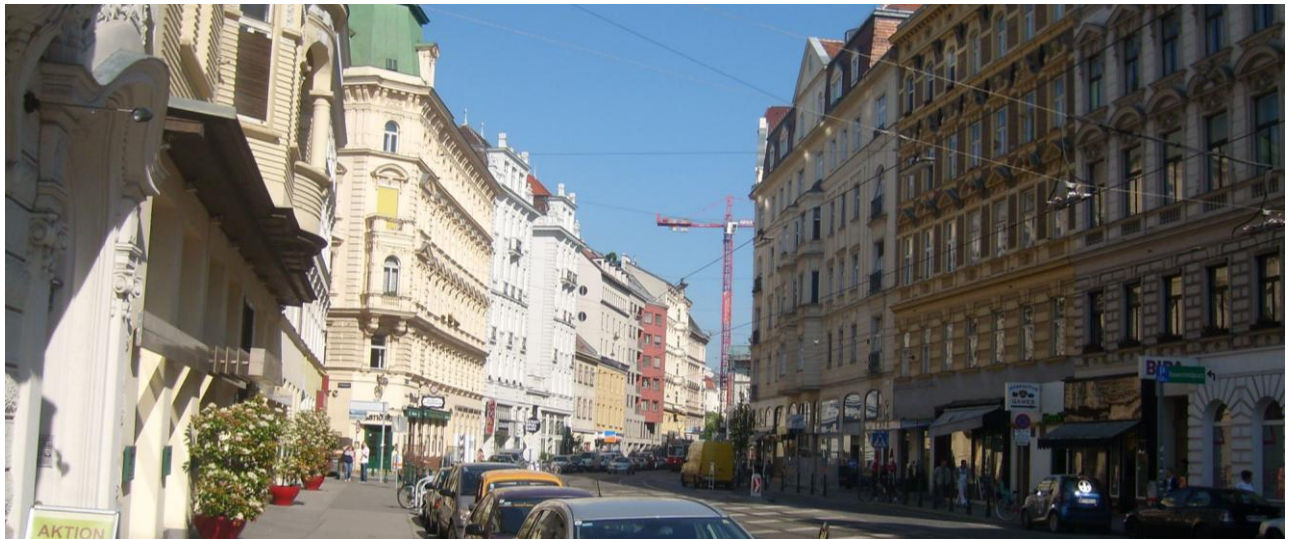


Fig. 1: Gründerzeit houses in Viennas 9<sup>th</sup> district © Angelika Psenner

These properties, built between 1848 and 1918, currently command a high value in the real estate market, reflecting a lively demand for both the buildings and the flats. This fact is surprising given that the drawbacks of these historic buildings are well known. That would be:

- Densely built-up areas: The GZ districts lack a sufficient balance of accessible outdoor recreation areas.<sup>2</sup>
- High vacancy rate on the ground floors.<sup>3</sup>
- Expensive overhead, high maintenance costs, and sparse population.

Therefore, what is it that accounts for the high market value of GZ buildings? First of all the generous ceiling heights have to be mentioned. Typically measuring between 3.20 and 4 metres—on ground floors, up to 5 metres—they basically constitute the framework for the 'grand and lordly' façades. The extravagant floor

<sup>1</sup> One quarter of the apartments in Vienna is located in GZ buildings. (see also: Psenner, 2011a, 196)

<sup>2</sup> Psenner, 2011b, 1122ff

<sup>3</sup> Detailed articles by the author on this issue: Psenner, 2012, 2011a, 2011b, 2005, 2004

height also allows for diverse use: the modular and small-scale structure of the units can be merged or separated as required, while at all times conserving the well-balanced spatial proportions.

Right from the beginning, GZ buildings were used for both living and working; And to this day they accommodate uses as diverse as apartments, hotels, offices, kindergartens, cinemas, churches, fitness centres... even boulder climbing halls are situated in GZ houses.

### 1.1 Research question

What motivated investors to place so much importance on high ceilings – in spite of the fact that GZ buildings are said to be the prototypes of profit-driven capitalistic ideas? How have the high ceilings paid their way? What did their profit-value consist in?

By quoting original literature of the time the paper will offer a most astonishing answer to this question and with this a new approach to the ongoing discussion about the value of use-neutral architecture.

## 2 INTRODUCTION: THE VIENNA GRÜNDERZEIT BUILDING

### 2.1 Apartment Buildings as Objects of Speculation

The Gründerzeit period is marked by an unrestrained unfolding of the liberal-capitalist spirit that drove the industrialization of the Habsburg Monarchy. While housing previously had been an occasional source of income for large property owners, it was during this period of economic liberalism that it became a full-blown object of speculation.<sup>4</sup>

One of the conditions that allowed for this extraordinary building boom was the so-called Grundentlastung (agrarian reform), implemented in the years following the abolition of manorialism in 1848. Aristocracy lost ownership of most of their land, which reduced their economic influence and in consequence led to a boost in the real estate market.

A second condition was *migration*: within eight decades Vienna's population grew from 440,000 in 1840 to 2,238,545. Most of the population was absorbed within the suburbs, where the population grew from 242,000 in 1870 to 1,011,000 in 1910 (Bobek, Lichtenberger, 1978, p. 30-31), resulting in an excessive demand for and overcrowding of apartment buildings. In 1894, the Viennese Architect Lothar Abel (1841-1896), published a widely read article about the overwhelming "housing question": "*Das gesunde, behagliche und billige Wohnen*" ("*Healthy, Comfortable and Affordable Living*").

*So-called building speculation, which considers a house not as a property but as a commodity, is the real cancer of our current art of building. These speculators start out by calculating the rent that they want the house to yield (...). In order to obtain this rent, the building costs are set at a certain level, and this level must not be exceeded under any circumstances. (...) Normally the price obtained does not buy very much, and this is compensated for by economizing in the building's masonry, its wooden structures, etc., just as much as is required for the initial calculation to work. Moreover, since the building does not yield any rent while being constructed, it must be completed with a time that is too short for it to be proper and solid. (Abel, 1894, p. 132-133)*

### 2.2 Living and Working in a Gründerzeit Building

Bobek and Lichtenberger's standard work *Wien: bauliche Gestalt und Entwicklung seit der Mitte des 19. Jahrhundert*s (Vienna: Architectural Form and Development Since the Mid Nineteenth Century) offers illuminating data that provide a view of living conditions in the apartment buildings:

In 1869, 72 % of all apprentices and 22.9 % of the workers lived in their respective employers' buildings. Consequently, the proportion of non-family residents (workers, lodgers, so-called Bettgeher,<sup>5</sup> apprentices) in a household was as high as 42.6 %. 55.1 % among the 179,388 industrial employees had no apartment of their own, they were lodgers or Bettgeher in their employers' households.<sup>6</sup>

<sup>4</sup> In 1860 Vienna had half a million inhabitants and 8,493 landlords (Fellner, 1860, p. 5.), whereas at the height of the Gründerzeit period (1870–1890), 18.9 % of the residential buildings in the city and its suburbs yielded such high returns that the owners were able to live on this income alone (Bobek, Lichtenberger, 1978, p. 38).

<sup>5</sup> Literally 'bed goer'; lodgers sharing the same bed in day and night shifts.

<sup>6</sup> Bobek, Lichtenberger, 1978, p. 35-38.

The economic structure of Viennese GZ-industry was dominated by small businesses, which were all based in residential buildings. Only a few among the businesses covered in the 1869 business census had more than 10 workers—and only businesses located in the suburbs (like beer breweries) had more workers.<sup>7</sup>

Generally apartment buildings were used both for *living* and *working*. Yet, even on the *bel etage* itself ‘stately’, sizeable apartments existed next to offices of doctors, *lawyers*, factory-owners, and so forth.

### Use-neutral Gründerzeit Architecture

Given their historical use, GZ buildings must be considered as being *use neutral*: they served both as residences and workplaces—largely due to the fact that in the 19th century there was little separation between living and working. The residents’ way of life always comprised every possible form of expression: the ‘residential’ quarters were used for eating, sleeping, cooking, working, etceteras.<sup>8</sup>

For our purposes, the question of the ‘hardware’ is of interest: the scope of possibilities that GZ architecture was—and still is—capable of providing. Use-neutral and open-use architecture is primarily defined through a flexible room model<sup>9</sup> and adequate ceiling heights. The flexible room model secures the possibility of adaptation: a renovation can be carried out—and even reversed—at any time. Tenants and owners can thus design apartments and workplaces according to their own ideas and needs. In some cases, when the ownership permits it, apartments can be joined together, transgressing allotment boundaries. When smaller units are merged into a large space, it is the generous ceiling height of GZ buildings that ensures adequate room proportions. In this way, a GZ apartment building can accommodate spacious, prestigious offices for lawyers, for instance, as easily as day care centres for kids, coffee houses, community centres, yoga schools, and so forth—they all find their place in the GZ structure. At the same time, the supply of smaller housing units has again increased in order to accommodate the increasing number of single-person households. High ceilings allow for the creation of large units while also retaining the possibility of returning to a smaller scale.

So how did this happen? What motivated investors to place so much importance on high ceilings while GZ buildings are said to be the prototypes of unlimited profit-driven liberalistic-capitalistic ideas?

## 3 ON THE GENEALOGY OF THE VIENNESE GRÜNDERZEIT BUILDING: THE HISTORICAL DEVELOPMENT OF THE GRÜNDERZEIT BUILDING STRUCTURE<sup>10</sup>

### 3.1 Building Height and Ceiling Height

The total height of the average GZ building was originally set at 4 storeys. From 1868 on, 5 storeys were allowed—including a mezzanine<sup>11</sup> and the ground floor; additionally, these 5 storeys were limited with a

<sup>7</sup> The 1859 Trade Act resulted in a liberalisation of what previously had been a guild-controlled industrial structure. With the new act, taking up a trade required only registration with the authorities and was otherwise free of restrictions. There were only 14 trades that required a business permit. Even though the stock crash of 1873 resulted in a return to a guild-based approach to the economy, the economic structure remained dominated by small businesses.

<sup>8</sup> Moreover, the apartment building harboured people of different social strata: members of the bourgeoisie, factory owners, intellectuals, entrepreneurs, craftsmen, handymen, day labourers...all lived under the same roof. Communal life was ordered by rigorous behavioural codes and strict hierarchies. Still, everyone used the same entrance and the same stairway—a circumstance that met with disapproval in some countries and social circles. The explanation for this dense intermingling of social strata, unique in Europe, rests in a mix of socio-historical, economic, and cultural factors—a discussion exceeding the scope of this paper.

<sup>9</sup> This aspect is not addressed here as there already exists a wide range of publications, e.g. Erich Raith, *Stadt-morphologie*, 2000.

<sup>10</sup> In Vienna, construction regulations were introduced in 1829. In 1830 the first building regulation act was issued. The regulations written by von Mühlböck in 1843 (the contents of which coincided with those of 1830) represented the construction decrees then in force in 8 topics, 3 sections, and a total of 30 articles. The Gründerzeit period underwent a total of 4 different issues of the applicable building regulations. As mentioned, the first regulations were issued in 1830, followed by a second one in 1859 and a third one in 1868. The latter comprised as many as 93 articles and was amended in 1870 in response to the changes required by the introduction of the metric system. The last relevant issue of the building regulations was released in 1883 and for the most part remained valid up until the first third of the 20th century, with one amendment enacted in 1890.

<sup>11</sup> In his PhD dissertation, *Graz, Strukturwandel einer Stadt im Lichte ihrer Bauvorschriften (1856-1968)* Peter-Heinz Marauschek attributes the existence of the mezzanine to a circumvention of the article 17, according to which “new

total height of 13 fathoms (equivalent to 23.77 metres). When the metric system was introduced in 1870, the maximum building height was increased to 25 metres. The building regulations of 1881 allowed 0 metres for the upper edge of the flooring of the uppermost floor. Also coinciding with the introduction of the metric system, the minimum ceiling height was increased from 2.74 (circa 1843 and 1868) to 3 metres.

Taking these different conditions into account and assuming a ceiling structure of approximately 40 centimetres, a discrepancy among the various height requirements becomes apparent—a discrepancy that circumscribes the actual excessive storey height without, however, explaining it. It is becoming clear that the ceiling heights of 3.20–4 metres (more on the ground floor) characteristic of the Viennese Gründerzeit building cannot be accounted for on the basis of building regulations. Instead, a formula is revealed, that is, the difference between the maximum building height (25 metres) and the largest allowed number of storeys multiplied by the minimum ceiling height ( $5 \times 3.40 = 17$  metres).<sup>12</sup>

What motivated speculating investors to incur this additional expenditure?

### 3.2 Ceiling Height Value in Public Health Economy

By the late nineteenth century, GZ Vienna was considered to be particularly densely populated. Additionally, Vienna had been repeatedly afflicted by epidemics, which drew considerable attention to the sanitary problems in the city's apartments. Time and again 'physicists' and doctors were invited to participate on commissions in order to draft expert opinions regarding public health care, and subsequently, to aid the reform of building regulations. Examples include the 1882 "*Bericht des Ausschusses der k.k. Gesellschaft der Ärzte zur Berathung der Reform der Wiener Bauordnung*" (report of the Imperial Medical Society on Suggestions for a Reform of Vienna's Building Regulations), and Carl Haller's lecture, held in 1864 on behalf of the Imperial Society of Physicians in Vienna with the title "*On the Ventilation of our Apartments*".

*Research on sickness and mortality in our capitals...has shown that the course, the direction, and the duration of our most common epidemics are most evident at locations without a sufficient renewal of the air, and that improvements—such as they are manifest in the great successes of our charitable construction societies—do the most towards changing that situation. This research has also revealed that the dominant disease of our time, tuberculosis, which reaps away the most beautiful among our youths, and often also the blossoms of our intelligence with its cruel hand, killing 6000–7000 people in Vienna every year, has its main source in an insufficient breathing process. (Haller, 1864, p. 16)*

*When one compares the living situation in five of Europe's largest cities, the enormous influence that apartments have on the moral and physical condition of the population becomes mathematically evident. As mentioned previously, there are 7 persons to one building in London, 35 in Paris, 58 in Berlin, 52 in St. Petersburg, and none less than 59 in Vienna. As the number of inhabitants per house increases, mortality also increases, for out of 1000 people 24 die in London, 25 in Berlin, 28 in Paris, 41 in St. Petersburg and 47 in Vienna. (Abel, 1894, p. 347)*

The theories about 'systematic air renewal' and 'ventilation' merit special reference. Developed by Paul Traugott Meissner, professor of technical chemistry in Vienna, it was received and disseminated as a "path-breaking thesis" across Europe.<sup>13</sup>

*Of air layers in inhabited rooms there are always three, that is, the lower one, on the floor of a room, where carbonic acid, the heaviest among the gases make-up the air, will accumulate, in as much as through the breathing process so much of it is given off that it can no longer be bound by the atmospheric air. This is a*

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buildings (...) may only be built four storeys high: Evidently, the preferred way of circumventing this norm was via the entresol (mezzanine)—a low in-between storey located between the ground and the first floor, or between the uppermost floor and the roof—which had to be considered a storey in the terms of the 1868 law." (Maruschek, 2010, p. 98) Other theories attribute the mezzanine to the storey tax, to be circumvented by the terms 'mezzanine' or 'entresol'. This is an assumption for which no evidence has so far been found: documentary research at the City of Vienna's departments for legal matters of construction (Municipal Department 64) and for accounting and fees (Municipal Department 6) as well as in the city archives yielded no results.

<sup>12</sup> In relation to this consideration, the maximum allowed upper edge of the uppermost floor (20 metres) must be juxtaposed to the calculated height of  $4 \times 3.40 = 13.60$  metres.

<sup>13</sup> "Die Ventilation und Erwärmung der Kinderstube und des Krankenzimmers", (Ventilating and Heating Nurseries and Sickrooms), 1852. (Research on ventilation has also been carried out by Eugène Peclet, Pat Arnott, and David Boswell Reid.)

case that frequently occurs in souterrain and basement units. Furthermore, the middle air layer will take up the lighter atmospheric gases, and finally on top of those there will be the even lighter putrid gases, mainly nitrogen and all the carbohydrates. Most of the ventilation installations siphon off the uppermost layer of air, which results in a continuous exchange of air in the room. (Abel, 1894, p. 227)

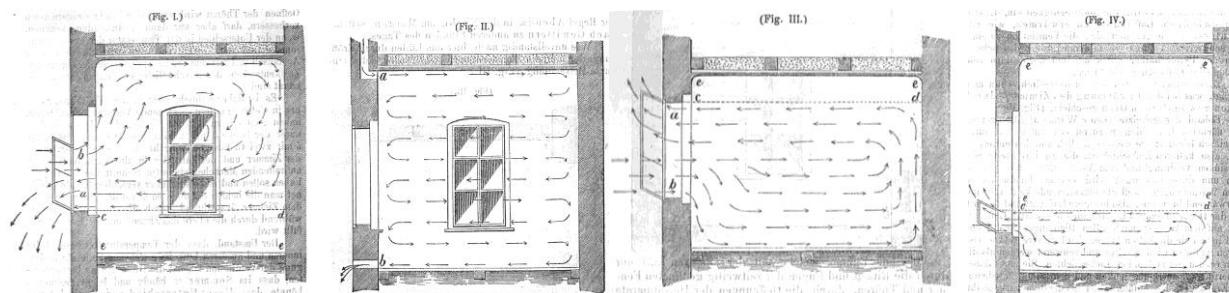


Fig 2: theories on ventilation, according to Carl Haller, 1864, p. 25-31

Returning once more to the harmful effects of putrid air, there can be no doubt that it gives rise to the most problematic of health disorders. Even when the degree of contamination does not reach very high levels, it is the permanence of the effect of the room air that will increase the propensity for illnesses: a poor diet, anaemia, and the like—we can easily tell these things by the room dweller's pale complexion. (Alsberg, 1882, p. 32)

The concept of 'air layers' led to specific advice for architects and builders:

As is known, high rooms are much healthier than low ones, because in the former the air will always be pure, and high rooms can accommodate a greater volume of air on the same amount of surface....However, in the case of finer residential building's elegant rooms one must not fail to consider the architectural conditions, and one will therefore give smaller rooms a lower ceiling than large ones. All the while, one should not have rooms with a ceiling lower than 3 metres, especially when the room also serves as a sleeping room, in part because it would be unhealthy and there would be a lack of air supply, in part because of the danger of fire, as lamps placed on the table and the heat of the fireplace would then be too close to the ceiling. (Abel, 1894, p. 276)

From this point of view, small children were thought to be particularly at risk, which is why the practise of mounting cradles and children's beds on high base frames became widespread:



Fig 3: children's furniture; left: lowered cradle from the Biedermeier era (around 1820/1825) (Pressler/Straub, 1991, p. 94), right: child bed with high base from the Gründerzeit era (around 1860) (Ottillinger, 2006, p. 134)

Another highly dangerous effect of contaminated room air is that in children it very often causes scrofula as well as increasing the propensity to catarrhs, the English disease (rickets), and similar conditions, thus paving the way for later infirmity already in childhood. (Alsberg, 1882, p. 32)

A further health and sanitation argument in favour of high ceilings was made in connection with 'scientific explanations' of the salutary effects of light and sunshine:

*Looking now at the effect of the illumination from the façades and the windows, we notice that the same amount of light entering through the windows will create a better illumination of the rooms where the ceilings are higher and the buildings less deep....In buildings with small apartments, a ceiling height of circa 3 metres corresponds to a depth of approximately 10 metres, while buildings with large apartments have a depth of circa 12 metres with a ceiling height of circa 3.6 metres. The lower floors of a building usually have higher ceilings, and rightly so, as this allows the limited light supply to be largely compensated for by better conditions inside the building. (Serini, 1913, p. 9)*

Against the background of these arguments, it also becomes clear why the windows in Gründerzeit buildings were made both as high and narrow as possible, and why a greater ceiling height is required on the ground floor. Even though the building regulations stipulated a ceiling height of ‘only’ 3 metres, there was a general recognition that heavily used rooms—considering a per-head-space requirement of 4 square metres (!) – required a large air volume. Health considerations along with the desire for sufficient light must, therefore, be seen as the reason for the familiar and excessively high GZ rooms.

### 3.3 The Market Value of Ceiling Height

*“Whenever I consider purchasing something, I must know its value at least approximately in order not to be deceived.” (Řibřid, 1913, p.3)*

From our current understanding, the original, historic value of a GZ property is not easy to comprehend. However, economic perspectives from the period offer insight into this phenomenon; for instance, in the book of architect and city-employed builder L. Kurzweil: *Wert- und Rentabilitätsberechnung von Zinshaus-Realitäten; Mit besonderer Berücksichtigung der Amortisation (Calculation of Value and Cost-effectiveness of Apartment Buildings, with Special Consideration of Amortisation)*. Kurzweil intended the book as a “Ratgeber für Hauskäufer, bzw. – Verkäufer, für Architekten, Baumeister, Hausadministratoren und sonstige Interessenten” (guide for buyers and sellers of houses; architects, builders, building administrators, and other interested parties). Using complex tables, the author computes purchase value, depreciation, and total fees<sup>14</sup> (taxes, charges, dues, etceteras), based on the various rental tax regulations that applied to the buildings.

According to Kurzweil, the price of a property was determined by three different factors: simply put, one could say that the value of a property was determined by the value of the *building lot*, the so-called *building value*, and the *earning rate* (resulting from the rental income). “The earning value by itself does not represent the value of the building....The true value of a building is determined by adding up the value of the building lot with the building value and the earning value, and then dividing the total by two.” (Řibřid, 1913, p.13).

Consequently, the **estimated value of a property** is the result of the mean value between the cost of production (value of the lot and the building) and the earning value. Thus, it is not the rental income alone that determines the value of a building.

#### 3.3.1 Land Value, Building Lot:

In addition to its size, the value of a building lot is determined by its location and its shape (configuration).

**Configuration:** Small and shallow real estate lots achieved a lower sales price than wide lots of medium depth—in other words, pieces of land that were suitable for the construction of double blocks. Deep lots were considered less desirable because of the unfavourable ratio between the high rated front building and the low rated apartments of the back building. (Bobek/Lichtenberger, 1978, p. 50). What mattered was primarily the width of the main building front: a wide front combined with a shallow lot depth was considered a desirable building lot configuration. (see Řibřid, 1913, p.8) “As is known, we determine the value of an apartment by the number of its street-side rooms.” (Abel, 1894, p. 301)

**Location:** In his 1901 analysis “Die Entwicklung der städtischen Grundrente in Wien” (The Development of Urban Land Rental in Vienna), Paul Schwarz finds a marked decline in land prices towards the urban periphery. This concentric structure was overlaid by sectors with (greatly) increased land prices. The western and north-western sections of the city, between the Vienna valley and the Danube canal, were considered particularly expensive, while districts such as Margareten met with little demand (Schwarz, 1901, cited in

<sup>14</sup> For example, there was a fee for a ‘vault guard’ (responsible for publicly accessible street level and basement spaces) that operated in the first district only. Depending on the location and type of the buildings in question, the fee was divided into four categories ranging from 6 to 44 crowns.

Bobek/Lichtenberger, 1978, p. 50). The reasons for this are to be found in the city's topographical building history<sup>15</sup> as well as the stage of completion of the urban transit infrastructure.<sup>16</sup>

### 3.3.2 Building Value:

*The building value is determined by the size of the built-up surface, by the building materials, as well as by the number of storeys and the exterior and interior fittings. Naturally, the more abundant these fittings, the higher the building value will be. (Řibřid, 1913, p.8)<sup>17</sup>*

The evaluation was, thus, based on the number of square metres of built-up surface, and on a specific multiplier for the fittings. The design of the façade played an important role in this, too.<sup>18</sup> There were other designations at work as well: “basic one-story buildings”, “more elaborate buildings”, with basements, without a souterrain, without a mezzanine, with hard floors on the street side, and soft floors on the yard side, and so forth. Furthermore, buildings were differentiated by “elegant interiors: hard floors on all storeys, kitchens with firebrick floors, the whitewashing of the walls done with more than three cartridges; apartments of three or four rooms on the lower floors” and finally those “equipped with all comforts”. In the case of the latter, the definition presumes that “everything be: lavishly decorated and furnished” with “elegant business parlours, and furthermore a souterrain, a mezzanine, and an attic with a laundry”.

*In the case of a single-floor building, 1 square metre of building surface is valued with 498 crowns. For additional floors, more is calculated, that is, 80 crowns for the second floor, 77 for the third, 73 for the fourth, and 42 crowns for rooftop artist studios. In the case of corner buildings, 6 % is added to the square metre value. (Řibřid, 1913, p.9)<sup>19</sup>*

Many of the early Gründerzeit buildings—particularly in the main commercial streets, where they often lasted less than 50 years—were replaced by the turn of the century (1900).

### 3.3.3 Return on Investment, Rental Rates

The actual rental income, that is, the return on investment, accounted for a small part of a property's value, and was by no means as central as one might assume from today's point of view. Moreover, it was a known fact that rental income reports were manipulated through the distinction between gross returns and net income:

*In order to correctly determine the gross return, it is not sufficient...to merely look at the tax declarations, for these may be incorrect for a number of different reasons; they may state too high or too low of an income and thus not correspond to the actual state of affairs....Moreover, it often happens that building proprietors seeking to sell their buildings try to increase the rents—even if only for a short period of time—without consideration as to whether such inflated rents can be maintained in the future. (Řibřid, 1913, p.11)*

The net income resulted from the gross returns from rental payments less the housing rent tax (after subtracting the tax benefits<sup>20</sup>), reduced by all additional charges and dues (provincial, municipal, schooling,

<sup>15</sup> Aside from the all-determining topographical factors, the main radial roads played a particularly important role in the Viennese case.

<sup>16</sup> In the early Gründerzeit there was no public transportation in the city. A record in 1850 identifies 700 rented two-horse carriages and 60 wagons (so-called Zeiselwagen). The first horse-drawn railway was inaugurated in 1856. In 1872, 900 fiacres, 1100 one-horse carriages, and 960 horse-drawn wagons were registered.

<sup>17</sup> The construction time for a “normal or slightly better, multi-storey building” is estimated to be 1.5 years—that of a two-storey building, 1 year. (Řibřid, 1913, p.6)

<sup>18</sup> It seems all the more odd that in the 1950s and 60s removing facade ornaments was promoted by the city by means of the law. Evidently, decorative facade plastering had lost its importance in the post-war period and, being out of step with current notions of architecture, were often viewed as bothersome. In the same period, the old buildings in German cities underwent what was called *Entstuckung*, or de-plastering.

<sup>19</sup> The building value also included the so-called Interkalare, the loss of interest on capital during construction. The law of 9 February 1892 (Imperial Legal Gazette #37) introduced a 24-year rent tax exemption for the construction of “healthy and inexpensive” apartments for labourers, indicating only two requirements: apartments underneath street level were excluded from this tax exemption, while the minimum size for one-room flats was 15 square metres, and multi-room flats 40 square metres, with 30 square metres and 75 square metres being the respective upper limits. Another law on tax exemption for workers' homes was passed in 1903 (Imperial Legal Gazette #6, 1903), this time with detailed requirements. (Maraschek, 2010, p. 6)

<sup>20</sup>

etc.), reduced by the amortisation of the construction capital, that is, the time dependent devaluation,<sup>21</sup> reduced by the cost of building maintenance, fire insurance, chimney sweeping fees, building administration (including an apartment for the concierge), floor lighting, and finally the cost of vacant apartments or shops.

### 3.4 The Stadthaus-Image as Market Value

The *Stadthaus* (urban building), through its vocabulary of forms, catered to certain perceptions of value, which in turn co-determined its market value. It distinguished itself clearly from the rural or single-family home. Consider the following experimental scenario: in what way does the façade of a GZ apartment building change if its height is reduced (while the vocabulary of forms remains unchanged)? The images reflect the problem: the one on the left is the original, while on the right the building has been reduced to 17 metres, applying the minimum ceiling height of 3 metres required by the building regulations. The clumsy proportions are much closer to the formal expression of a country house. Even though this building would meet the building regulations, it would hardly have been perceived as ‘valuable’.

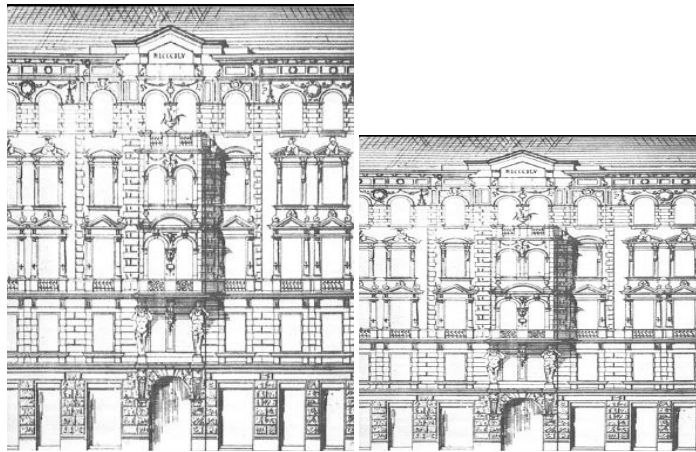


Fig 4: Front of a four-storey apartment building from the high Gründerzeit. Original picture (left): Bobek/Lichtenberger, 1978, p. 120

*The rich and magnificent façade is the cheese with which to catch the mice. One must not hold this against the builders, even though they may often be pointed at as scapegoats when they abet construction speculation. (Abel, 1894, p. 227)*

*Most of the apartment buildings are erected with the intention to accommodate as many tenants as possible, while decorating the façade with all kinds of terracotta or cement ornaments, such as can readily be obtained from factory storehouses. (Abel, 1894, p. 99)*

*Furthermore, in this little book [note: the treatise by Eitelberger and Ferstel, criticized by the author] the modern apartment building-monsters are accused of feigning a palace-like appearance, without having the essential attributes of such a grand building, which is only a way of expressing how regrettable it would be if the countryman ever reached a level of wealth that would allow him to afford himself a stately home with high ceilings and windows, instead of his seven-shoe high thatched hut, for he would then, in spite of the architectural oddities that such buildings will always retain, still come closer to the wealthy citizen, or even the lordly manor. Besides, such frivolous builders are also accused of being extravagant and vain enough to install double doors and Venetian blinds, while the tenants are accused of requesting the same, which are sheer luxury and fitting for a palace, but not a townhouse! (Fellner, 1860, p. 10)*

Attempting to establish through research the reasons for the excessive ceiling heights of the Gründerzeit buildings has been demanding. Apparently, we are looking at knowledge that was immanent in a system or within society; in other words, its content was considered so obvious and ‘logically evident’ that it was deemed unnecessary to make it explicit.

A ‘valuable’ building of this period necessarily had to have a ‘stately’ appearance, because the value hierarchies of the Gründerzeit were influenced by the bourgeois ideology of the Vormärz period. The latter was oriented towards neo-classical images and details as well as elements of the Renaissance with a preference for triangular, segmented gables, and ‘stately’ sizes and proportions.

<sup>21</sup> Buildings constructed with fire-proof materials were expected to last 130-150 years, those with standard materials 70 to 100 years. Currently the amortisation period for new buildings is 66.67 years. (Standard, 2011, p. 11).



Whenever the architectural forms of the Gründerzeit were questioned by contemporaries, it was not because of the ceiling height.<sup>22</sup> After all, the necessity of high ceilings had been ‘scientifically proven’ (see the previous section on air layers and ventilation), and furthermore, the added cost of constructing high ceilings, being covered by higher return on investment and the greater market value it generated, did not actually to add to the costs.

*Who has not observed the practices of our local masons! Several workers stand in one place, duly lining up the bricks one after the other; once they have thus completed a row, there are hands who bring in the liquid mortar, applying it upon and between the seams by using large spoons. The complicated process, requiring much supervision but little action, is completed.... (Velleman, 1872, p. 62)*

In his 1872 treatise “Die oeconomische Bedeutung der Bauordnung in Oesterreich” (The Economic Significance of Building Regulations in Austria) architect and engineer G. Velleman identifies what he considers to be adverse conditions in the construction industry. Looking at his meticulously recorded price lists, it becomes evident that during Vienna’s GZ period, masonry work was carried out consistently by day labourers, keeping the price per cubic metre of walling exceptionally low.

#### 4 CONCLUSION

The Gründerzeit apartment building represents an architectural form of use neutrality that is empirically evident. Its openness to different forms of use, historically proven and established over the decades of its existence, is based on the following attributes:

- a simple and flexible room model
- high ceilings
- high perception of prestige (value) reflected in fittings, ceiling height, and façade

The market value of the GZ building was originally also determined by its prestige value, that is, by its fittings and details. Such symbols of prestige have remained in demand until the present, expressing themselves in the materials used (hard wooden floors, double wing doors, etc.) and in particular in a ‘stately’ façade. What seems to matter most with regard to the latter are not the plaster ornaments, but out-of-proportion ceiling heights.<sup>23</sup> Thus, ceiling heights that seem above-average from our point of view, and for which sanitary considerations are co-responsible, are ultimately also an investment.

The fallout of economic and financial crises has led to a re-discovery of Vienna’s apartment buildings as objects of investment.<sup>24</sup> While the demand for this investment had its peak about two years ago—and major institutional investors have since pulled out of the active buyers’ market—a lively interest in apartment buildings remains.

Even without elaborating on economic factors such as income, old-age provision, reinvestment of earnings, etceteras, the appeal of the Gründerzeit apartment building can be described in terms of a *variable* based on *subjective* preferences. Today it is the Gründerzeit building’s generous offering of space that is the real reason for the renewed interest in it as a ‘commodity’. This is true, not least of all, because it offers the possibility of open-ended usage, thus catering to a wide range of interested parties, rather than limiting itself to a specific segment of the market.

Current architectural forms lag behind this kind of thinking. We are continuing to build apartment and office buildings as entities separate from each other, and with a maximum ceiling height of 2.50 metres.

<sup>22</sup> Instead, the general line of argument called for low-rise garden cities as in Britain. This type of criticism was expressed, for example, by the architect and Senior Building Official Professor Leopold Bauer (1872-1938), by the architect Lothar Abel (1841-1896), and by the lawyer and politician Erich Koch-Weser (1875-1944), who praised the virtues of the English, Dutch, and Belgian “small building”, and considered the “large building”, that is, the tenement house, as the root cause of his era’s housing problems. Moreover, he was of the opinion that “everything that constricts the city—for example, greenbelts and the like—had to be avoided” since they created a lack of space that caused houses to “stretch upward”.

<sup>23</sup> GZ buildings keep their value even when plaster decorations are removed—a practice promoted by the city administration in the post-war years in the name of progress and modernity.

<sup>24</sup> Prices on the apartment building market have consistently been rising since 1988, with the exception of a few intervals. (Standard, 2011, p. I 11)

Given the circumstances discussed here, an updated interpretation of building regulations is required—one which might bring the vision of a mixed-use and compact urban structure within reach.

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