

## **LA RED DE FERROCARRILES Y LA CIUDAD: EL CASO DE VIENA. EL IMPACTO DE LOS FERROCARRILES EN LA CONFIGURACIÓN URBANA Y LOS TRANSPORTES PÚBLICOS DE LA METRÓPOLI AUSTRIACA**

### **THE RAILWAY NETWORK AND THE CITY: THE CASE OF VIENNA. THE IMPACT OF THE RAILWAY ON URBAN STRUCTURE AND URBAN PUBLIC TRANSPORT IN THE AUSTRIAN CAPITAL**

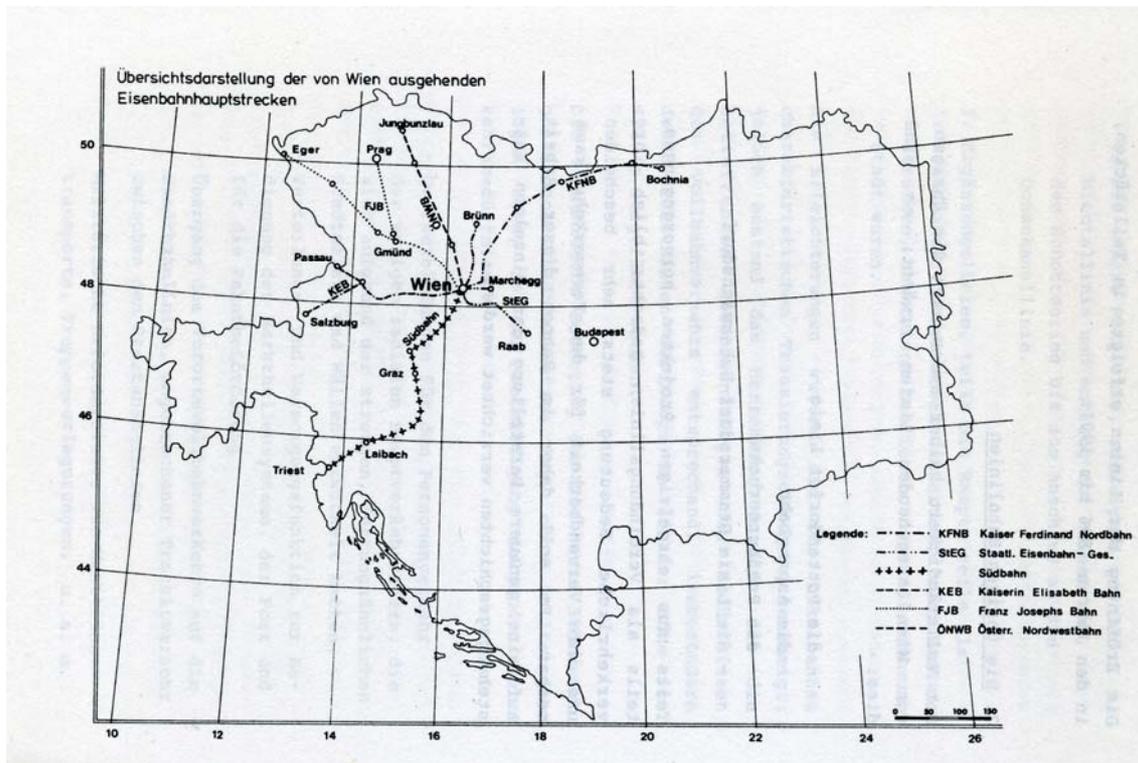
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#### **The material development of the railway network in Vienna**

As early as in 1837 Austria's first steam train connected a small village called Floridsdorf in the north of Vienna that later became a suburb of the capital with another village further north, Deutsch-Wagram. Since the year after, the train regularly ran between these two villages, and again a year later the first train reached Brünn (today's Brno in Moravia). These were the first steps towards the building of a railway line (*Kaiser Ferdinand – Nordbahn*) linking Vienna with the north and north-east of the Habsburg empire because there, in Silesia and northern Moravia, there were important coal mines and industries. The whole privately-owned line was completed in 1840.

At the same time, the first railways to the south and south-east were built (*Wien-Gloggnitzer-Bahn* and *Südbahn*), followed a few years later by the *Kaiserin Elisabeth – Westbahn* to the west, to Salzburg and Bavaria. Thus, within 20 years, a network of railways had been built that had its main lines to the north (Bohemia, Moravia and Silesia), the east (Hungary), the south (Styria, Trieste) and the west (Linz, Salzburg, Munich) and whose centre was the Austrian capital.

Then, in the 1870s, the monopoly of the *Nordbahn* concerning freight traffic to and from the north was broken by the building of both the *Kaiser-Franz-Josefs-Bahn* running to the north-west to Pilsen and Prague and the *Nordwestbahn*, right in between the latter and the *Nordbahn* and running to Bohemia, too.



**Figure 1: Railway lines starting from Vienna in the 19<sup>th</sup> century** Source: OSTERMANN (1986)

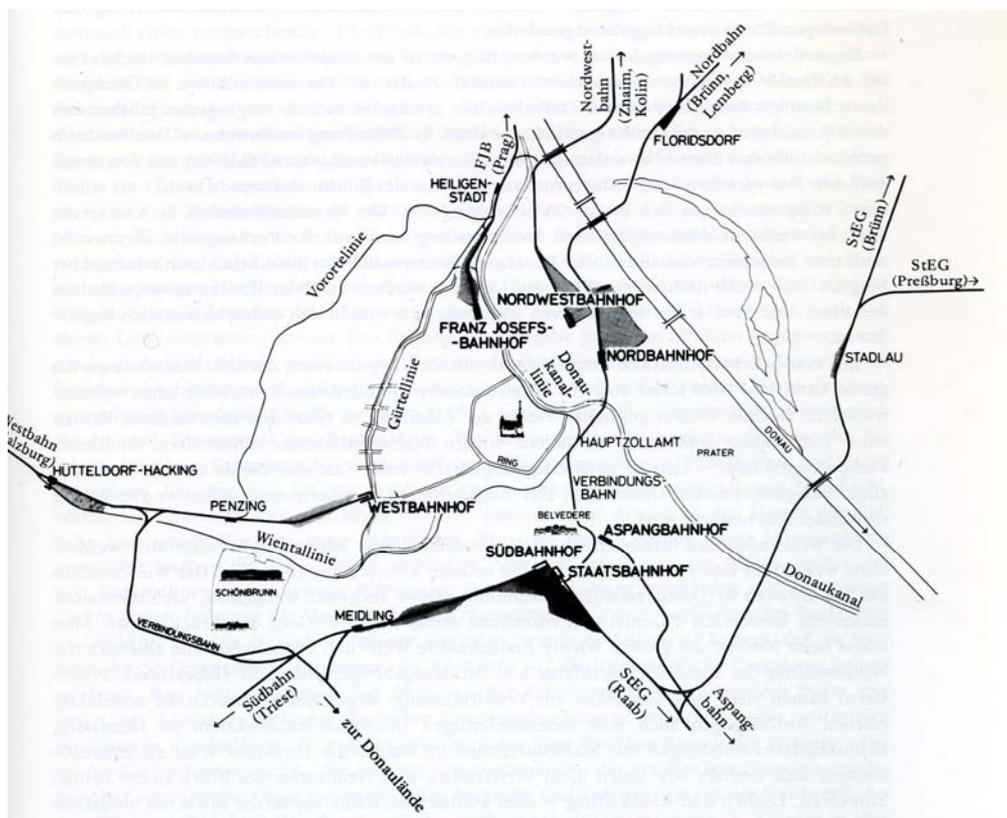
As in many other large cities at that time (e.g. Paris, London, Berlin) the privately or stately owned railway lines each had a terminus of their own that with but a few exceptions lay far outside the city centre and were not linked to one another. Vienna's first railway station, the northern station (*Nordbahnhof*, 1838) had to be built quite near the centre because the various branches of the river Danube had to be bridged. But all the other early stations like the southern station (*Südbahnhof*, 1841), the *Staatsbahnhof* (also *Ostbahnhof*, 1846) and the western station (*Westbahnhof*, 1858) were to be situated even beyond the fortifications which surrounded the suburbs (*Linienwall*). This was due to military and tax purposes.

It was military reasons, too, that led to the building of a linkage between the *Nordbahnhof* and the two closely related stations in the south-eastern surroundings of the capital, the *Südbahnhof* and the *Staatsbahnhof* (*Ostbahnhof*) because the army was interested in being able to easily displace troops from the north of the empire to the south and vice versa. A project already elaborated for this so-called *Verbindungsbahn* was delayed by the revolution of 1848 because the building of another important railway, the *Semmeringbahn*, was given priority in order to get as much workers as possible as far as possible away from revolutionary Vienna. However, there were more obstacles that had to be surmounted: in order to reduce the difference in altitude between the stations, the *Verbindungsbahn* was partly built as an elevated railway, partly in a cleft and even like an underground railway with tunnels. The fact that the *Verbindungsbahn* closely passes by the armoury (*Arsenal*) clearly shows the strategic

and military importance the military contributed to it. Nevertheless it came too late: when it was provisionally inaugurated in July 1859 the Austrian army had just lost two decisive battles in northern Italy, at Magenta and Solferino, and those defeats were also due to the fact that the soldiers had had to march from the *Nordbahnhof* to the *Südbahnhof* instead of being quickly transferred by train, thus losing a whole day.<sup>1</sup>

Nevertheless the *Verbindungsbahn* was quickly extended to the *Westbahnhof* until 1861. For a long time it only served for freight transport and military purposes but not for passenger traffic. When, during the World Exposition of 1873, regular passenger traffic on the *Verbindungsbahn* was offered it failed due to a lack of passengers though the exposition saw more than 7 million visitors within a few months. It should take another 100 years until the Vienna suburban railway was introduced whose main axis was to be the *Verbindungsbahn*.

When, in 1872, the *Kaiser-Franz-Josefs-Bahnhof* as the first terminal lying within the *Linienwall* fortifications was completed, it was linked to the existing network by two newly built secondary railways for freight transport which were built on the terrain gained by the regulation of the Danube. What was now still missing was a railway linkage for passenger transport in the north-west, between the *Westbahnhof* and the *Franz-Josefs-Bahnhof*.



**Figure 2: Railway stations in Vienna, 1910** Source: KUBINSZKY (1986), 27

<sup>1</sup> Möcker (1989), 178

## Local railways

In the meantime the railway system was adapted to the needs of local traffic because the railway had proved to be a comfortable and reliable means of transport for long-distance traffic, so why not use it for shorter urban distances, too?

As early as in 1883 the first electric railway was inaugurated in the southern surroundings of Vienna, starting from Mödling and making accessible for day trippers the beautiful scenery of the Wienerwald forest.

Even before, a rack railway was built from the forest northern outskirts of Vienna to the hills overlooking the whole city (*Kahlenbergbahn*.) This rack railway originally was planned to be in service in 1873 at the latest in order to offer another attraction to the visitors of the World Exposition but due to problems in acquiring the terrain it was only completed when the exposition had already been shut. During the first years of service it was heavily competed with by a funicular railway and, moreover, people preferred to go there by feet instead of spending much money for the railway which did not end directly at the hotel on the top but obliged the passengers to make a short walk. For the first 11 years it was very complicated to reach even the base station – one had to take first the horse-drawn omnibus or the horse tram, then the train and finally go a short distance by feet – but finally in 1885 the *Neue Wiener Tramway-Gesellschaft* (NWTG) introduced a horse tramway line which ran directly to the base station. These improvements ensured its survival until the early 1920s.<sup>2</sup> The upper third was then, in the early 1930s, used for the newly built scenic road, the *Höhenstrasse*.

In 1880 the First Local Railways Act (*1. Lokalbahngesetz*) allowed local railways to use urban streets beyond the central area limited by the *Linienwall* fortifications and the Donaukanal, the branch of the Danube next to the city centre. As far as to that time, urban public transport in Vienna was ensured only by horse-drawn omnibuses and tramways. Georg Krauss, owner of an engine factory in Munich and Linz, was the promoter of steam tramways in Vienna.<sup>3</sup> He soon gained a concession and had a first line built from Hietzing, a rural suburb in the west, to Perchtoldsdorf, a picturesque small village in the south of the capital which was often visited by Viennese day trippers. This successful first line was soon extended in three directions. The so-called southern branch of the steam tramway from Hietzing to Perchtoldsdorf and Mödling contributed very much to the dynamic development of the area in the south of the capital, the tramway forming the backbone for a strip development along the rails according to the model of a linear city as proposed by the Spanish urban planner Arturo Soria y Mata. Presumably, the influence of the steam tramway on this development was even stronger than that of the Southern Railway (*Südbahn*) because the latter passed by at a bigger distance from the former villages.

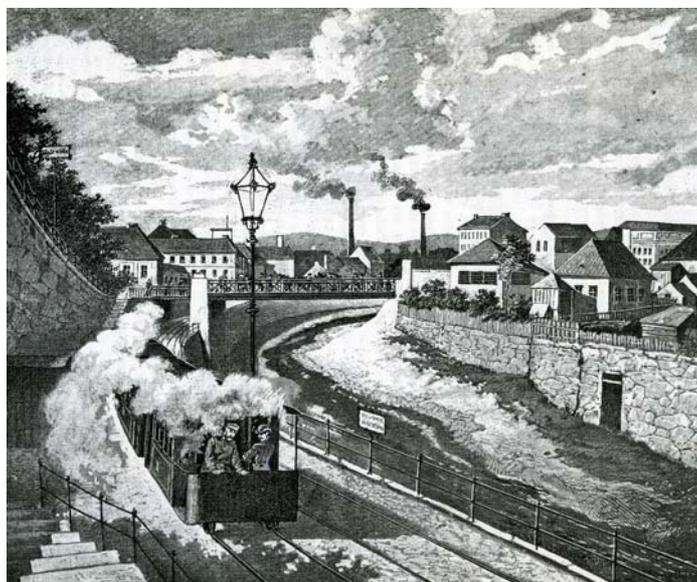
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<sup>2</sup> Fuchs (2004), Niel (1974)

<sup>3</sup> Laula and Sternhart (1974)

In 1886 Krauss could inaugurate a northern branch of his steam tramways which started near the city centre and opened up some rural villages in the north and north-east like Floridsdorf, Stammersdorf and Groß-Enzersdorf which later were incorporated into the municipality. In the case of Floridsdorf the steam tramway was the starting point for its rapid urbanization at the end of the 19<sup>th</sup> century because it was now easily accessible from the city centre. In 1887 the Krauss steam tramway network counted over 45 km.<sup>4</sup> The steam tramways were not much faster than the horse-drawn tramways because of legal restrictions and therefore the management sought to get a track on its own in order to speed up the tramways. These tracks can be seen even today, above all on the northern branch. Compared to the horse-drawn tramways the steam tramway offered a very high level of comfort to its passengers. Maybe this is just one reason why the steam tramways surprisingly were much appreciated by users and neighbours as well, though, of course, they used to claim on the dirt and soot and smoke caused by the steam tramways.<sup>5</sup>

The *Dampftramway-Gesellschaft Krauss* was remarkable, too, for another reason: being aware that a linkage between the northern and southern branch would attract much more passengers than each branch for its own, the company planned to build new lines along the Wiental valley and the Donaukanal just like it was realized in the 1890s by the building of the metropolitan railway (*Stadtbahn*) and then much later in an extended version by the urban railway in the 1960s (*Schnellbahn*).<sup>6</sup> In 1907 the Krauss steam tramways were taken over by the Vienna municipality and step by step electrified and integrated into the now municipalized and as well electrified tramway network until 1922.



**Figure 3: Steam tramway in the Wiental Valley, drawing, c. 1889.** Source: *Interessantes Blatt*, 5.12.1889

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<sup>4</sup> Czeike (1992), vol. 1, 612

<sup>5</sup> Laula and Sternhart (1974), 7

<sup>6</sup> Möcker (1989), 176

The turn of the century saw the birth of two other very successful local railways: the *Lokalbahn Wien - Baden*, shortly called *Badner Bahn*, and the *Preßburger Bahn* between Vienna and Pressburg (today's Bratislava, capital of Slovakia). The *Badner Bahn* had two roots, both in Vienna and in Baden which then was a small spa town in only 25 km's distance from Vienna's city. Baden since 1873 already had a horse-drawn tramway which was electrified in 1894/95. In Vienna, the NWTG founded a new limited company (*Wiener Lokalbahnen*) in 1888 and transferred its steam tramway line running south to the new company. Then, in 1897 the *Wiener Lokalbahnen* bought up the tramways of Baden and completed the missing link between the two existing networks. Soon the whole track was electrified and extended so that in 1907 the electric tramway ran through between the Vienna Opera House and the centre of Baden. The advantage of linking two city centres constituted its success because access was easy though travel time was a bit longer than taking the *Südbahn*.

This success encouraged to build a similar railway between Vienna and Pressburg where Hungarian kings used to be crowned for centuries. This electric railway could be opened just before the outbreak of World War I and was very intensively used inspite of the long travel time of two hours for about 60 km but the schedule was rather dense. Viennese people liked to go to Pressburg to go to the opera and vice versa. After the fall of the Habsburg empire and after Pressburg having become a part of the new Republic of Czechoslovakia in 1918 the railway line lost much of its importance and continuous trains between the two cities were abandoned in 1935. After 1945 the track was interrupted at the frontier.

### **The *Stadtbahn*, a failed concept for a metropolitan railway**

Until the last quarter of the 19<sup>th</sup> century Vienna did not have an efficient means of mass transport in spite of the increasing growth of the capital and it seems as if, compared to cities like Berlin, Paris or London, there was not much need for it because Vienna had not grown in space but was very densely populated and there was less industry in and around the city so that spatial segregation was not that accentuated. On the other hand, the lack of efficient means of mass transport and the high prices had hindered the development of garden city suburbs.<sup>7</sup> Only in the morning a price-reduced ticket was offered that workingmen could afford. For the way home from work most of them had to walk because tramway tickets were too expensive for them.<sup>8</sup>

In the 1890s most suburbs were incorporated. Vienna now counted 1,3 million inhabitants and the need for a general extension plan for the metropolis became urgent as well as the introduction of a modern and efficient means of mass transport. Instead of the *Linienwall* fortifications a broad and representative boulevard, the *Gürtelstraße*, and a metropolitan railway (*Stadtbahn*) linking the *Kaiser-Franz-Josef-Bahnhof* and the *Westbahnhof* were to be built.<sup>9</sup> According to the original plans, several lines should be

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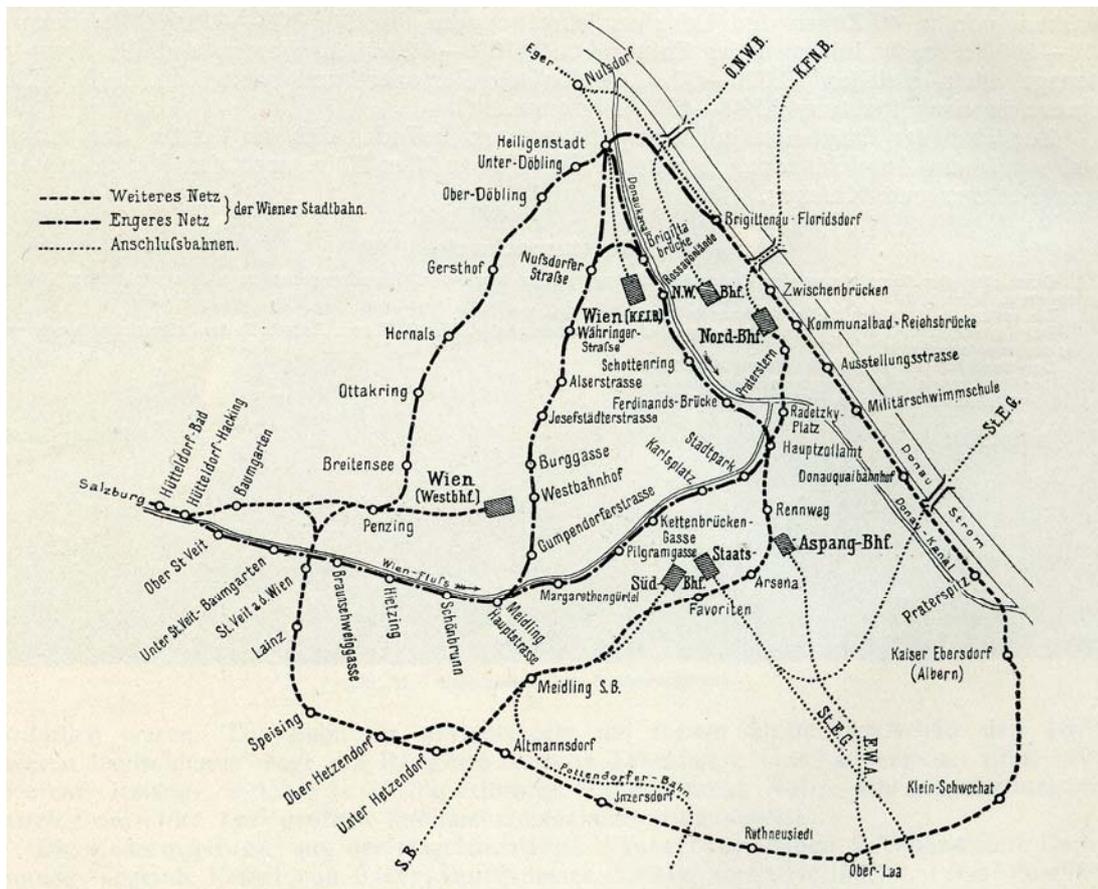
<sup>7</sup> Capuzzo (1998<sup>o</sup>), (1998b), and (1998c)

<sup>8</sup> Eigner (1991), 738

<sup>9</sup> Schlöss (1987)

built, but in fact only the *Gürtellinie* along the former Linienwall, the *Donaukanallinie* along the Danube branch, and the *Wientallinie* along the Wiental Valley were realized whereas important lines such as the electric underground under the city centre and an extension beyond the Danube were cancelled. In the northwestern outskirts a suburban branch line, the *Vororteline*, was built only for military purposes which for a long time had nearly no importance for passenger transport.<sup>10</sup>

Soon it became clear that the new metropolitan railway was a failure. Military and strategic reasons had prevailed over transport-oriented planning because Vienna would have needed a radial transport line instead of a tangential one, and steam traction was already out-dated when it was inaugurated. Nevertheless, the *Stadtbahn* became very famous as a work of art because of its art nouveau style conceived by architect Otto Wagner.<sup>11</sup> After World War I the *Stadtbahn* (except for the *Vorortelinie*) was taken over by the municipality and then electrified. In the 1990s it was integrated into the underground system.



**Figure 4: The metropolitan railway network (*Stadtbahn*), ca. 1910.** Source: KORTZ (1905), 110

### The struggle for a Central Station

<sup>10</sup> Capuzzo (1998a), 32-36

<sup>11</sup> Kolb (1989)

When in 1858 the old medieval fortifications should be demolished and plans for the extension of the city be elaborated, two architects proposed the building of a central railway station because they had seen what inconveniences the fact of several terminus badly linked to one another would cause. Finally, however, they did not succeed because of financial reasons.<sup>12</sup>

Again in 1873 the question of a central station was intensively discussed within the Austrian Association of Architects and Engineers and several projects were brought forward, each of them recommending a different site. Among others, the engineer Emil Winkler suggested to build an underground network of six main lines, four of them crossing at a central station to be built in the city centre. For the first time Winkler's proposal relied upon traffic censuses made during six months. But none of these ideas was followed up.<sup>13</sup>

In the years before the First World War, during the interwar period and the Nazi regime and also in the time of reconstruction after 1945, some more proposals (by Musil, Overhoff, Ilz, Sitte, Findeis etc.) were elaborated and discussed.<sup>14</sup> Most of them regarded the site of the *Südbahnhof* as most appropriate for the new central station but again, no decision was taken.<sup>15</sup> In the 1980s discussions about a central station started again and now they finally led to a decision taken in 1995 which said that the existing *Südbahnhof* station is to be improved and extended and linked to the *Westbahn* by a new tunnel (*Lainzer Tunnel*) which is now nearly completed.

### **The impact on the location of industry, on trade and housing**

As MEISSL (1987, 2001) has shown in his multiple works the arrival of the railway in Vienna had an important impact on urban structure in general and especially on the development and location of the industry as well.

The industry sought to take advantage of the railway and settled down near the stations because her products like engines, wagons or rails were made for the railway or because transport charges for raw materials, energy (coal) and products were lower there than elsewhere. Moreover, real estate prices were low there due to the distance to the city centre and the low degree of urbanization. In the course of time, warehouses and forwarding businesses settled down there and the workingmen followed them.<sup>16</sup> The railway station became a gateway to the city for thousands of migrants from Bohemia, Moravia, and other parts of the Habsburg monarchy. Vienna's population grew extraordinarily fast during the boom years before the crash of 1873. The first stations, e.g. the *Nordbahnhof*, the *Gloggnitzer Bahnhof* and the *Raaber Bahnhof*, thus became the nucleus of a new urban industrial development. Figure 5 shows well both these two

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<sup>12</sup> Till (1967), 132

<sup>13</sup> Winkler (1873)

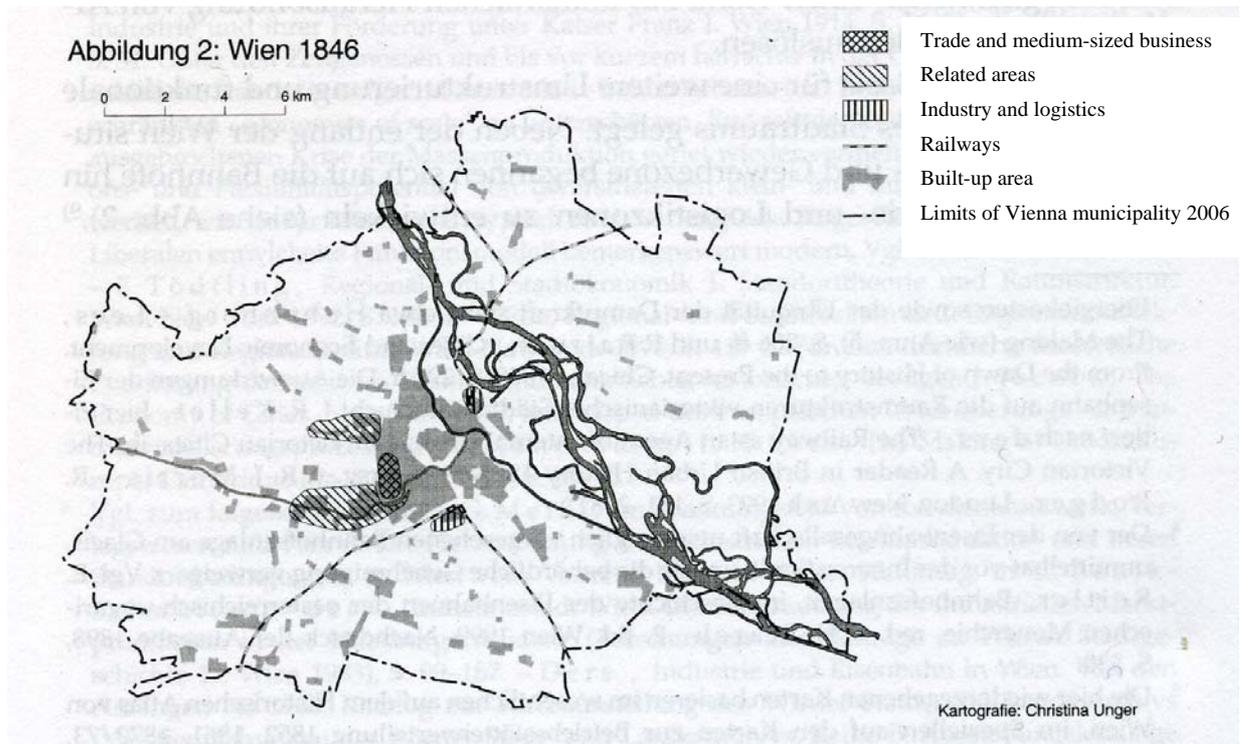
<sup>14</sup> Kurz (1981), 146

<sup>15</sup> Ostermann (1986), 28-66

<sup>16</sup> Meissl (2001), 71, Eigner (1991), 739

starting points for industrialization and the traditional centres of trade and medium-sized business in the western suburbs, partly along the *Wien* river.

By 1873 the area in the south of both Südbahn and Ostbahn had developed to a large industrial zone and the district of Favoriten had become a working-class area. The other industrial nucleus, however, was overrun by the spreading of the growing capital and lost its importance. The industry now preferred to settle down in Floridsdorf, which at that time was a rapidly urbanizing suburb.<sup>17</sup>



**Figure 5: The railway and the location of trade and industry, 1846.** Source: MEISSL (2001), 72

By the eve of World War I spatial structures of industrial location already looked very like they do today: there was a large industrial zone along the railways to the south and to the east and two or three other industrial zones all lay nearby the railway.

The railway station became a new city centre and attracted many smaller businesses, too. On the other hand middle and upper class people began to steer clear of the railway. Real estate prices went down and many building sites near the railway remained fallow. After 1918 the Red Vienna municipality bought exactly these cheap sites in order to build up there those huge blocks of flats it became famous for. However, with the spatial growing of the capital the role played by the railways and the stations gradually changed from city-developer to an obstacle to urban development and suburban growth.

<sup>17</sup> Meissl (2001), 76

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