RAILWAY NETWORK AND TOWN FABRIC OF BUDAPEST

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Town fabric, settlement structure — notions used often but not always unambiguously.

The town fabric is meant as the spatial situation of, and connections between, the settlement's certain characteristic technical components (just as the land-use zones, the centres of built-up areas and public institutions), and related to their environment.

The factors influencing the town fabric are the natural environment (topography, hydrography) and the main network of roads, railways and public utilities.

A town has a clear-cut, well defined fabric if its characteristic components fit functionally the topographical features, or else, they are arranged in a spatial system, maybe a geometrical configuration coping with the interrelations (flows) of the constituents.

A clear-cut town fabric may offer outstanding practical advantages; it makes orientation easier, keeps down the time spent regularly on traffic, promotes the functional and economical tracing of the public utilities and main traffic network, encourages the appropriate allocation and accessibility of institutions etc.

The professional terminology often does not distinguish between the constituents of town fabric and the factors influencing its development, referring to a given period; these — topographical, hydrographical, traffic etc., — factors are considered as the features of the town fabric. This simplification can be accepted as the above definition of town fabric involves the interrelations of the settlement's technical components — these interrelations (flows) are generally subject to the main road network of the town. In this way the main road network may be regarded as a factor influencing the development of the town fabric but on the other hand it is also an important element of the already developed town fabric — carrying the flows between the settlement's constituents.

In investigating or forecasting the development of settlements it seems

to be more proper to distinguish between the constituents of the town fabric and the factors influencing its development.

The factors influencing the development of the town fabric (contour lines, watercourses, roads, railways) are linear as against the area constituents of the town fabric (zones of different uses and built-up centres).

Nevertheless:

— even some of the definitely linear structures are joined by extended establishments (such as shelter belt, marshalling yard of railways, sewage treatment plant, etc.);
— certain areal — rather than linear — facilities arranged in a spatial system are also often referred to in a figurative sense as networks (school network, shop network etc.).

Compared to networks in the figurative sense:

— the components of the real network are not only organizationally and functionally but also technically and physically interrelated;
— the real networks are characterized by the movements they effect: by the flow of people, goods, energy and information they carry.

This flow results from the spatial labour division very typical of towns.

The real networks of a town (in the strict sense) are:

— natural and artificial watercourses
— roads
— railways and rail-bound public transport means
— public utility conduits (water mains and gas pipelines, canalization for rainwater and sewage, district heating pipelines, telephone cables, overhead lines etc.).

Functionally, most of them belong to the infrastructure granting material services.

Concerning the influence, their relations, and interactions of these different networks on the town fabric, distinction has to be made between:

— networks *determining* the settlement fabric (e.g. watercourses, railways) and those *following* the development of the settlement (e.g. local public transport, public utilities);
— geometrically *rigid* networks, sensitive to topography (e.g. trunk sewer, railway line) and *flexible* networks (e.g. medium and low voltage electrical network, trolleybus line — in general, the low-duty networks);
— *interconnected* networks (such as canalization and water supply) and *self-contained* networks;
— *internationally* cooperating networks (roads, railways, power transmission lines, oil and gas pipelines), *regional* networks (waterworks, sewage disposal and purification) and *local* networks (e.g. urban trolleybus lines).

Traffic networks are characterized in general by:

— linkage with the national networks, interrelations between international, national, long-distance and local networks;
— a hierarchy (categories);
— the necessity of coordination (e.g. between road network and public transport);
— independence (e.g. underground railways) and interdependence (e.g. between road network and bus traffic).

The interaction between settlement and traffic depends on the operation of given lines (speed, frequency, comfort and fares) rather than on the network alone.

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The railway network of Budapest developed mostly on unbuilt area; the railway terminals were established on the outskirts of the built-up urban areas. The tracing of the railway was decisively determined by the topography and the technical characteristics of the track. As time went on the town grew round its railway network, the neighbouring settlements also developed towards the railway station, the new settlement arisen near the railway station merged in the settlement core.

Analysis of the interaction between railway and town fabric shows:

— the vicinity of railway stations and freight yards, the possibility of short-distance local haulage on the roads or that of a direct side-track joint to encourage the establishment of industrial and storage areas;
— the passenger traffic facilities to act as foci of trade and catering and to promote the development of local centres;
— the railway lines to sever the settlement, to separate the parts of the town;
— the railway passenger traffic junctions to engender urban public traffic junctions.

Let us consider these processes in their development.

1. Impact of the railway network on the development of industrial and storage areas

a) *Industrial areas engendered by the railways — later cleared (or to be cleared) for town planning reasons*

The first railway line and terminal in Pest was established in 1846 on the northern boundary of the town's latest built-up area of the time, the districts Teréz- and Lipótváros (Fig. 1*a*). Soon a side-track was laid from here

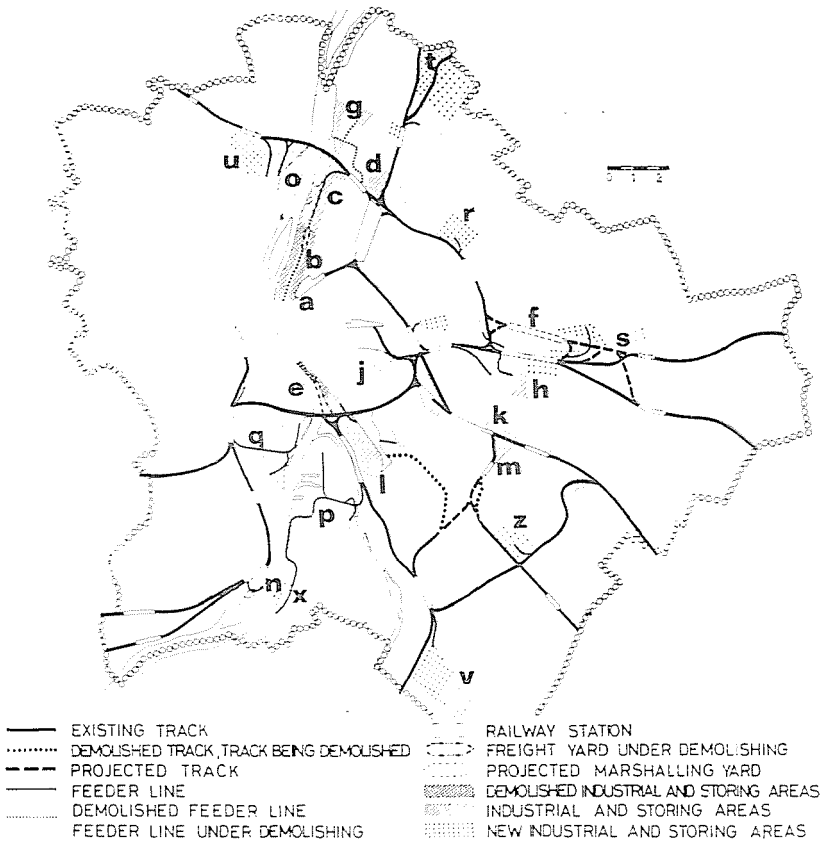

Fig. 1. Railway-attracted industrial and storing areas

for filling up and terrain correction in the territory north of the barracks "Újépület" (actually Szabadság tér) for the planned industrial plants and stores. The possibility of loading at the Danube-bank also added to the situational advantages of this territory. The further development of this industrial area to the north, to the boundaries of Újpest was made possible by the line which at Angyalföld branched off the left-bank circular railway built in 1884 exclusively for freight traffic. At its southern railhead there was the freight yard Lipótváros (Fig. 1*b*) with its branching-off side-tracks. With the growth of the Western Railway Station's passenger traffic, the construction of the new hall (1877), the side track branching out there could not be operated any more.

The further development of Lipótváros to the north and the construction of Nagykörút (1896), the inauguration of the Margit bridge (1876) imposed the removal of mills, industrial areas and stores inside Nagykörút. The clearance of the industrial areas went on in the inter-war period on the territory

from Nagykörút to Ipoly utca parallel to the construction of the residential area in Újlipótváros (Szt. István park and surroundings). This process is still going on, nowadays it has come as far as Dráva utca and in the near future it will reach the Árpád bridge by demolishing the Vizafogó (previously called Lipótvárosi) freight yard. According to the prevalent plans, north of Dagály and Turbina streets the feeder line of the railways and the factories around it (Machine Factory Láng, Hungarian Shipyard) will be conserved (Fig. 1*c*). In the same way, location of the Istvántelki (today called Landler) railway repair workshop beside the side track branching off the Rákosrendező marshalling yard has proven perspectively correct (Fig. 1*d*).

Similar processes are taking place at the southern end of Nagykörút. Still in the first decades of this century a dense side-track network branched off the freight yard Dunapart (Fig. 1*e*) to the north which led to a granary of 25 000 tons capacity, called Elevator, to six stores and under the Main Customs House and the Central Market Hall. The mills lining the Soroksári út were served by side tracks crossing the road linked by turn-tables with the tracks of the freight yard. The Elevator was destroyed in 1944, actually the three subsisting stores are connected to no side-track, namely it was crossing the Soroksári út and therefore demolished in course of the reconstruction of this latter. It is quite obvious that in the long run on the area between Hungária körút and Nagykörút, along an already inner bank, no freight yard can subsist. Its function could be assumed by a group of tracks of the Ferencváros marshalling yard that will be out of use as soon as the new marshalling yard at Mátyásföld will be built (Fig. 1*f*). Because of the significance of the Danube bank in Budapest downtown the construction of a new marshalling yard is not only a question of railway operation but a primordial aspect of town planning.

In some cases the previous direct supply by side-tracks was replaced by road transport, thus an industrial area originally attracted by and located on the railway would subsist — though without railway.

This is the situation at present along the inner Soroksári út, in the cases of certain factories along Szentendrei, Fehérvári and Gyömrői út and in the region of the bitter-water wells of Örsöd etc.

b) *Subsisting industrial areas engendered by the railways*

According to the valid plans, most of the industrial facilities along the Budapest railway lines, built in the second half of the last century — the capital's "traditional" industrial and storage areas — will be maintained. The development of the most typical areas went on as follows.

The greatest part of the industry in Újpest is served by the tram network joining the station Angyalföld of the left-bank circular railway (Fig.

1*g*). These industrial areas will subsist even if the Újpest tram network gets reduced (the lines along outer Váci út, Baross utca and Árpád út have been decided to be closed down with the opening of the north–south metro line). The side-track branching off the station Rákospalota—Újpest would cross the metro line No. 3 therefore it is to be abandoned, but the industrial area will remain.

Two feeder lines branching off the common section of the lines Hatvan and Újszász at the stations Kőbánya felső and Rákos have promoted the development of the industrial areas along Maglódi út, Jászberényi út and Keresztúri út (Fig. 1*h*). Some of these areas also developed because of geological features: limestone pits and top-quality clay necessary for the brick and tile industry. The first industrial base of Pest, the actual Ganz MÁVAG and the northern railway repair workshop also relied on the original terminal Budapest–József város, opened in 1867 (Fig. 1*j*).

Pig-breeding and trading in Kőbánya was also engendered by the Cegléd railway line towards the middle of the last century; then after the transfer of the pigsties from north-east to south-west of the railway a new line was laid with a spur ending in a loop where the freight yard 'Sertéshizlaló' (today: Kőbánya-Hizlaló) was built. Although the swine-fever in 1895 put an end to pig-breeding and trading, the south-west industrial area of Kőbánya developed around the freight yard is to be maintained. The side tracks branching off the Cegléd line at the stations Pestlőrinc and Kőbánya-Kispest promoted the development of the industrial area along Gyömrői út (Fig. 1*k*).

Similarly, the location of the South-Ferencváros industrial area along the side track branching off the marshalling yards Ferencváros and Soroksári út has proven perspectively correct (Fig. 1*l*).

The railway line Kőbánya-Kispest—Lajosmizse, opened in 1899, has considerably contributed to the industrial development. A number of factories, still operating and to be preserved, was founded around the station Kispest, on both sides of the railway line (Fig. 1*m*).

The Budafok-Háros industrial areas located around the feeder line branching off the Pusztaszabolcs line crossing the Székesfehérvár railway line bound by a fly-over will also operate in the future (Fig. 1*n*).

The section of the right-bank circular railway, built in 1896, initiated a vigorous industrial development between the Szentendrei út and the Danube bank (Fig. 1*o*).

Both in Budapest and surroundings the suburban railway lines had a definite impact on the industrial location e.g. along Szentendrei út, in Budakalász, Pomáz, Szentendre along Soroksári út, in the southwestern part of Pesterzsébet, in Soroksár, along Kerepesi út, in Kistarcsa etc. In the early '30s, 48 side tracks joined the suburban railway network alone.

The development of the Csepel industrial area went on the other way

round. Here, the quickly developing factory, the core of industry, was founded in 1892, but it had a railway connection only in 1912 with the opening of the suburban railway line Csepel—Erzsébet and it joined the railway network in 1928 when a feeder line was built to the free port (Fig. 1*p*).

The situation was similar in the area between Budafoki út and Fehérvári út. There were some important factories already working along Budafoki út when before World War I the feeder-line at Andor utca branching off the Kelenföld station was built — in order to supply the Kelenföld power station. This feeder-line with junctions to the north and south promoted the location of further factories relying on railways, the development of the Albertfalva industrial area. Certain factories along Fehérvári út had side tracks joining the suburban railway lines. The railway had a twofold impact on industrial location: with its stations providing a possibility of side tracking it attracted factories needing side tracks, and with the possibility of short-distance local hauling on the roads it encouraged the establishment of factories not requiring side-tracks (Fig. 1*q*).

c) *Industrial areas along the railway network developed after World War II*

Several new industrial areas have been established definitely along the railway network after World War II. The most typical of them are:

- the Honfoglalás-telep area served by the feeder-line branching off the circular railway station Rákosszentmihály (Fig. 1*r*);
- the plants along Keresztúri út, lining the feeder-line branching off to the east of the Rákos station (Fig. 1*s*);
- the storage area in Rákospalota served by the line to Vácrátót (Fig. 1*t*);
- the side-tracks of the feeder-line branching off the Óbuda station forwarding the industrial utilization of Kaszás-dűlő (Fig. 1*u*);
- the feeder line branching off the Kelebia railway line at Soroksár supplies the new industrial areas along Ócsai út (Fig. 1*v*);
- the big, new storage area along Nagykőrösi út lining the side track of the railway line to Soroksár-Kavicsbánya (Fig. 1*z*);
- the large factories along the extension of the Ironworks' (called Vasmű) feeder line, on the western side of Rákóczi út in Csepel are also remarkable (Fig. 1*x*).

The above short survey has only dealt with major industrial areas where the impact of the railway on land use (or vice versa) could unanimously be traced.

2. The development of the railway network and of city centres

The Hungarian capital formed in 1873 by uniting three towns (Buda, Óbuda and Pest) was characteristically one-centred; the establishments of trade and catering were concentrated in Pest downtown.

The west–east axis, even today the busiest shopping street of Budapest, developed between the City and the *Eastern Railway Station* opened in 1884. Curiously enough, the *Western Railway Station* attracted shops, department stores, hotels less along the actual Bajcsy Zsilinszky út, linking it with the City but rather along the Nagykörút. The *Southern Railway Station* had the least attraction of this kind, which was surely due to its definitely lower passenger traffic and its loosely built up surroundings. Even the small market-hall, built in the interwar period, was not frequented too much. In the past 15 years, a new centre has developed here, marked by the growth of the passenger traffic, the modernization of the railway station, the construction of an underground terminal and the opening of a storehouse. A hotel, now in the design stage, is likely to forward the development of this centre.

It is also interesting to investigate the interaction between the railway and the development of the *outer district* centres.

The core of *Újpest* was formed at the junction of today's Árpád út and Váci út; the first Town Hall was at the corner of Attila utca and József Attila utca. The settlement developed in L shape, in two directions: along Árpád út and Váci út, the former being the shopping street. This shopping centre at the crossing of Árpád út and Bajcsy Zsilinszky út, junction of road and public transport, has been retained, the other being in Szilágyi utca near the Rákospalota-Újpest railway station with considerable commuter traffic. It seems to be reasonable to develop a linear district centre along Árpád út, between István tér and the railway station (1600 metres away) to meet the growing space requirement of public institutions and services. It is also supported by the tracing of the metro line No. 3, now under construction, which will run under Váci út, Árpád út, join Rákospalota-Újpest railway station and has its terminal in the new residential area Káposztásmegyer.

Kőbánya also has a 'bipolar' district centre (Fig. 2): one pole is at the Pataki István tér with the institutions of administration and culture, the other — about 500 metres away — is the Kőbánya-alsó railway station of the lines to Cegléd and Lajosmizse. Between the two, along the 400 m inner section of Kőrösi Csoma Sándor út and at the Zalka Máté tér the shopping centre of Kőbánya was formed, now under modernization, to be made a pedestrian shopping street.

Similarly, the principle of two poles has been consciously applied to the *Kispest* centre. Its traditional shopping street is the section of Vörös Hadsereg útja near the market and the Kossuth tér, with its public institutions, accom-

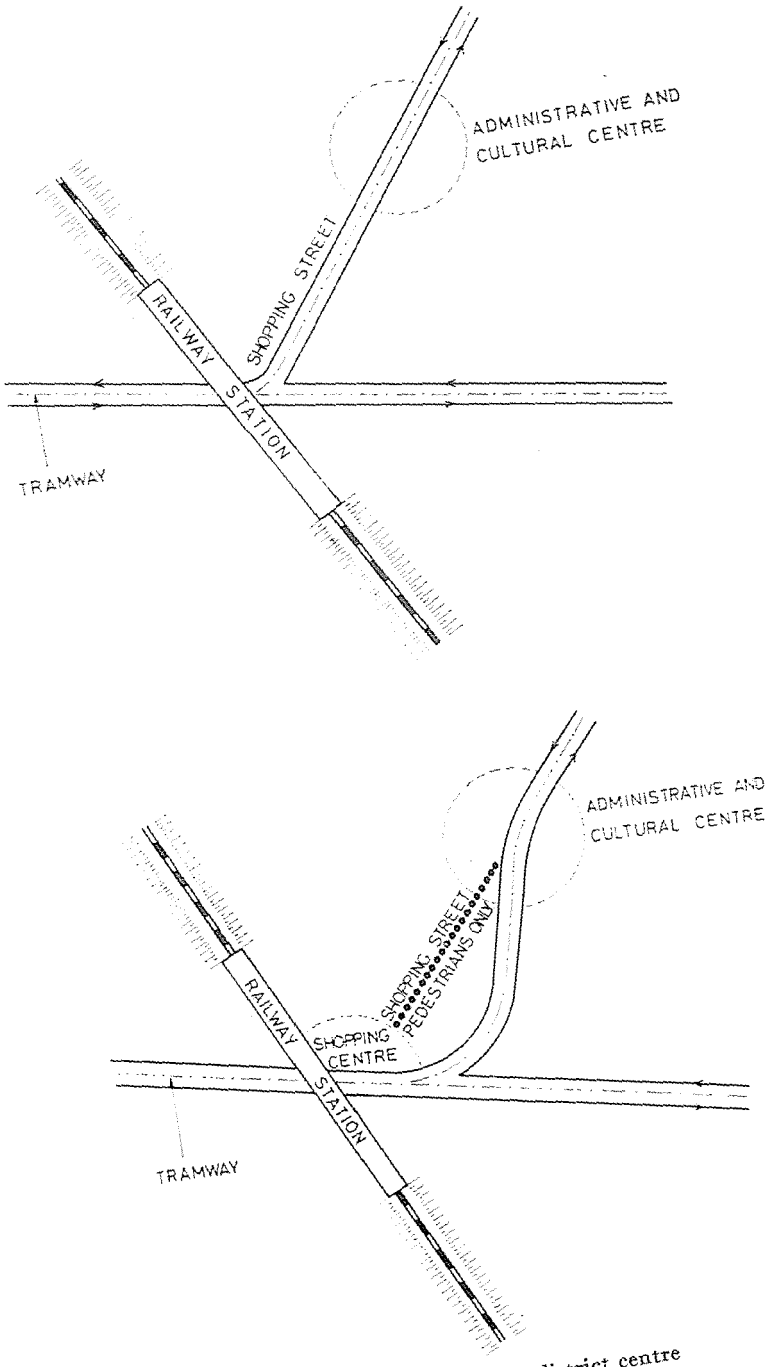

Fig. 2. Kőbánya district centre

modating outdated shops in mostly single-storey houses to be pulled down. The junction of the lines to Cegléd and Lajosmizse, 750 m away from the Kossuth tér, comprises the southern railhead of the metro line No. 3 with direct interchange facilities with the suburban trains; some of which have a terminal here, just as the bus lines to Kispest, Pestlőrinc and Gyömrői út. According to the plans, the new district centre will be normal to Vörös Hadsereg útja, its original direction, between the new urban and suburban public transport junction and the traditional institutional centre at Kossuth tér, running along Ady Endre út up to Bajcsy Zsilinszky tér.

The development of the small local centre in *Soroksár* around Hősök tere shows the past and present importance of the suburban railway line to prevail over the Kelebia line of the Hungarian Railways. Although the traffic-geographical situation of Soroksár reminds of that of Kispest; in Soroksár no development of a district centre near the railway station can be imagined, leaving apart the lacking claim to a bigger centre.

3. Impact of railway lines on the settlement division

One of the — most often mentioned — disadvantages of railway lines within a settlement is to sever, divide the settlement, confining the spatial and — in the case of barriers — timely relations between areas along railway lines. This disadvantage is, however, not a general one. Budapest has a railway network of 203 kilometres,

171 km are level tracks,
26 km are running on banks, bridges, and
6 km are tunneled, sunk traces or mixed.

The original track level was modified on three lines:

- the 3 km track of the Budapest—Kelebia line was sunk by 6 metres at the Csepel passage between 1909—1912 to avoid level crossing with the Pesterzsébet–Csepel suburban railway line then under construction (Fig. 3*a*);
- the original level crossing of lines between the Eastern Railway Station and Kőbánya felső station; the Eastern Railway Station and Ferencváros station, and the lines connecting the stations Józsefváros with Ferencváros and Kőbánya felső was replaced by a two-level crossing at the beginning of the century;
- the construction of the fly-over at Zalka Máté tér in 1940 started the raising of the Kőbánya—Zugló track (Cegléd line) to a bank. The project interrupted by World War II was completed in 1948 by the construction of the fly-over in Thököly út and the passenger underpass in Erzsébet királyné útja (Fig. 3*b*).

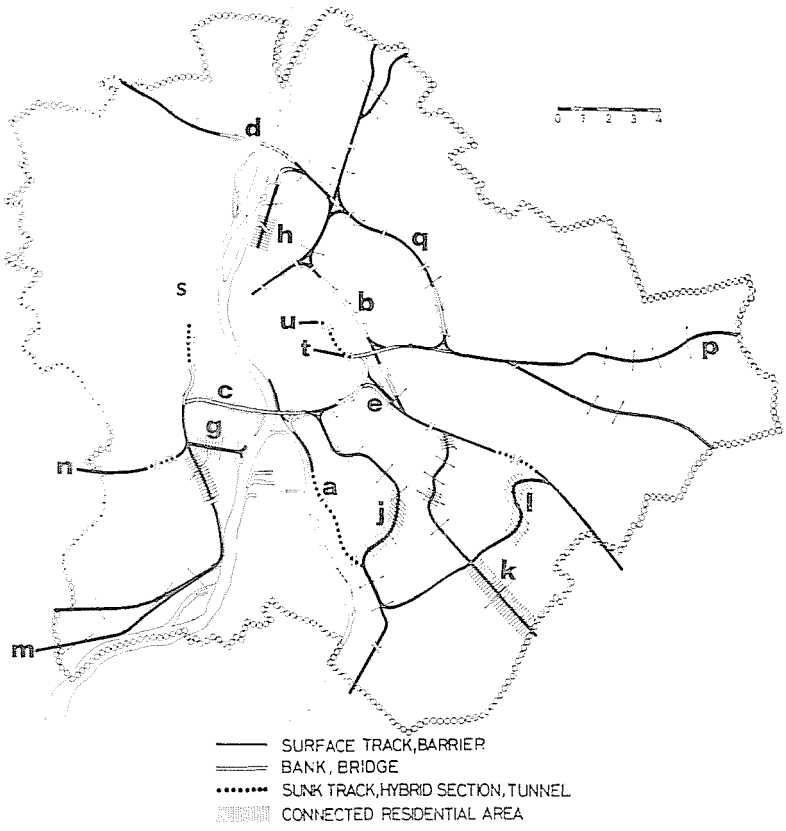

Fig. 3. Railways

The lines originally built on banks were:

— the southern connecting railway line, in 1877 (Fig. 3*c*);

— the track joining the northern railway bridge, in 1896 (Fig. 3*d*);

— the connecting line Kőbánya-Kispest–Ferencváros in 1928 (Fig. 3*e*).

These tracks crossed every important road (except for Gyáli út) through a fly-over; the first two lines — when built — were led across undeveloped, open areas.

No doubt, it was the Kőbánya–Zugló level track of the Cegléd line — meanwhile banked up — that most hindered the town development. Beside this, at present but a few tracks are disadvantageously dividing the settlement fabric:

— the Kelenföld–Budafok–Albertfalva track of the Székesfehérvár line (Fig. 3*f*);

— the track between Kelenföld station and Fehérvári út of the feeder line connecting Galvani utca and Andor utca (Fig. 3*g*);

— the Vizafogó Railway Station (to be demolished soon, Fig. 3*h*);
— the Ferencváros-Soroksár cross line tracks in Pesterzsébet along Vasútsor (to be demolished soon) and in Alsóhatár utca (Fig. 3*j*);
— certain tracks of the Lajosmizse line in Kispest and Pestimre (Fig. 3*k*);
— the Soroksár-Gravel pit line track in Pestlőrinc (Fig. 3*l*).

The above lines, crossing coherent residential areas, are about 16 km long, 8% of the Budapest railway network. The major part of the network's level tracks do not really hinder the development of the town; the areas along the railway lines can be connected by fly-overs or subways. Here are some characteristic features of these tracks:

— The south railway line running in the western part of the Kelenföld plain (Fig. 3*m*), the railway line to Bicske (in the valley of the Kőér brook, Fig. 3*n*), another line to Dorog (Fig. 3*o*; along the Aranyhegyi brook) and the one to Hatvan (Fig. 3*p*; along the Rákos brook) — have all been established along topographical features which would sever the settlement even if there was no railway there.
— The left-bank circular railway (Fig. 3*q*) built at the eastern boundary of Pest, around the former area of the capital on an absolutely unbuilt area. Streets of the town, extended in the meantime to the circular railway, are not contiguous to those of the surrounding settlements irrespective of the railway.
— Extensive establishments in several places along the railway lines would anyhow restrict the connection between neighbouring areas (e.g. the industrial areas and sports grounds along the Lajosmizse line at the boundary of Kispest and Pestlőrinc, the factories at the southern side of Gyömrői út, the green belt replacing the former gravel pit in Rákoshegy etc.).

The actual impossibility of crossing busy urban thoroughfares at will must not be disregarded either. The spatial and timely limitations of crossing are not exclusive to railway tracks but inherent to the growth of traffic.

As to the *environmental damages*, the electric railway traffic on a properly laid and maintained welded track is exempt from air pollution and less noisy than a medium-busy urban thoroughfare.

4. The impact of railways on the development of public transport junctions

When the first railway station in Pest-Buda — the ancestor of the Western Railway Station (Fig. 3*r*) — was inaugurated in 1846, the only means of local public transport were horse-drawn omnibuses. One line ran between this station and the city.

Also the first horse-drawn streetcar line, opened in 1866, joined the railway station. Another line built along Szent István körút was extended in 1876 over the Margit bridge. The first test-line of electric tramway also started from the Western Railway Station and ran along Nagykörút up to the actual Majakovszkij utca, extended by 1890—92 over the whole Boulevard, bypassing the horse-car as an intermediate step of development. Shortly after this, all the horse-car lines crossing the square in front of the western Railway Station were electrified, then all the four lines got terminals with loops laid in the side streets. The through traffic was suspended first on the lines Váci út—Kiskörút, then Szent István körút—Kiskörút and for a while even the line along the Nagykörút was cut in front of the Western Railway Station. After the post-war reconstruction of the bridges, the present situation, or rather the one before building the metro line No. 3, has developed, i.e. an integrated traffic along the Nagykörút, the terminals of the Angyalföld and Kiskörút tramlines and that of trolleybus lines in Rudas László utca.

With the opening of metro line No. 3 joining the Western Railway Station, the tram and trolleybus terminals at Marx tér will disappear, but a new bus terminal will be established.

The horse car line Lánchíd—Zugliget was added a spur at Széna tér in 1896, the first to join the *Southern Railway Station* (Fig. 3*s*) opened in 1861. Thus for 35 years, access to the Station was only by horse-drawn omnibuses. Two years later the tram line along Krisztina körút was opened and there was the terminal of the Alkotás utca—Farkasrét line until the tram junction at Moszkva tér was built in 1941. At present, beside some busy tram and bus lines, the most important access to the railway station is by the metro line No. 2.

The year after the opening of the *Józsefváros Railway Station* (Fig. 3*t*), built in 1867 at the rail-head of the Hatvan line, the spur along Mező Imre út of the Rákóczi út—Városliget horse car line was installed. The first tramway line along Baross utca joining this railway station was built in 1889 — but at that time the *Eastern Railway Station* (Fig. 3*u*), opened in 1884, was already in use. In this way the Eastern Railway Station was established at the branching off of an existing horse-car line. One year later the horse-car line was extended along both Thököly út and Kerepesi út. The latter was also necessitated by the terminal of the Cinkota suburban railway established here in 1887. The lines joining the railway station were electrified in 1897.

In 1912 tram lines had been installed in Festetics utca and Bethlen Gábor utca, resulting in the development of the capital's biggest tram junction before World War I. The tram network's rival lines with unfavourable features were already stopped in the interwar period: the tram lines in narrow streets and their terminals were replaced by trolleybus and bus lines after World War II. For the access to the station of the public the deep level station

of metro line No. 2, opened in 1970, is of major importance; also the planned metro lines No. 4 and N° 5 will cross Baross tér.

The busiest railway stations have considerably influenced *the tracing of the Budapest underground network* — and indirectly also the further development of the settlement fabric. Already the first two lines (east-western No. 2 and north-southern No. 3) join all the three main railway terminals and also the main suburban junctions of the railway commuter traffic.

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The railways development concepts for Hungary and Budapest conform with the international guidelines. The plans the most significant for the settlement fabric are the following: to establish reversing stations for the commuter traffic (e.g. in Kőbánya-Kispest, in Rákospalota-Újpest) to build the crossing line Soroksár–Kispest, to correct the Lajosmizse line at Kispest and to build a new marshalling yard south of Mátyásföld.

Analysing the interactions between the railway network and the settlement fabric the following conclusions can be drawn for the further plans:

a) The attraction of the railways for industrial settlement in a given area is far from steady but it largely depends on the situation of the area within the town. If the settlement fabric modification adds to the potential energy of a given area, the industry must cede before a more efficient utilization of the area. The prevailing economical process corresponds to the prevalence of growing land values.

b) A 'bipolar' district centre develops only in the attraction area of a railway station which is at the same time both the centre of commuter traffic and a local traffic junction.

c) The effect of railway lines to divide and confine a settlement is no special disadvantage where they run parallel with natural barriers or motorways, or if they are lined by extended industrial areas or green belts etc. which would anyway limit the cross-flows.

d) The local public transport junctions joining busy railway stations need not consist of a number of terminals. There is often no room for that around downtown railway stations, and breaking off the passenger flow lines would be fairly disadvantageous.

The local public transport system joining railway stations is, however, required

- to provide a possibility for the passengers to continue their journey in all the important directions of the city without changing;
- to be of the same capacity as the train, i.e. the local public transport lines must cope with passenger flows arriving by train in peak hours.

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This exposition of the interactions between railway and settlement fabric is aimed at helping to match the planned establishments with the continuously changing and developing settlement fabric of Budapest.

Summary

Definition of the notion 'settlement fabric' is followed by the enumeration of its constituents and the influencing factors, and their characteristics are pointed out.

Typical interactions between railway and settlement fabric are analysed with reference to the one and a half century of development of Budapest. The development of the railway network and that of the industrial areas (in particular, the industrial areas already demolished, subsisting and recently established) are in interaction. The railway is a factor in the development of 'bipolar' city centres, railway lines may divide settlements and finally, the railway decidedly furthers the development of local traffic junctions. Certain concrete cases are analysed from the past, future development projects outlined and some conclusions are drawn concerning future plans.

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