

## **TRANSFORMING SQUARES -- THE ARRANGEMENT PLANS ARE BEING PREPARED**

**One of the preconditions of issuing the Railway Authority Permit is the existence of arrangement plans especially on public areas. When preparing the programmes, the aim was that the direct and further environment around the stations of the new metro line could play the role of transforming transport and town structure in the future.**

The designers lay special emphasis on the questions of town arrangement and traffic, on the creation of public areas and parks and the surface connections of the metro stations. By taking the various points of view into consideration parallelly, the time scheduling of the realisation also received an important role on each spot. This is because the spots of the planned metro stations are important junctions in the capital the arrangement of which may be a requirement already before the operation of the metro.

The arrangement plan of Etele tér has already been completed of the programmes; it is to be approved by the local government. Except for Baross tér, the programmes of the other spots have been prepared, their collation and agreement are going on now. We are going to give a short summary of the proposals on each spot.

### **Tétényi út**

The most determinant elements of the area are two main roads with heavy traffic, the junction of Tétényi út and Etele út, the park called "bull hill", the mainly broken-down shopping and office complex and the surrounding housing estate. The planned metro station will be situated at the south-eastern corner of the park – only here considering the full length of the line – and its exit arrives into a surface building. One of the central questions of the programme modified in several turns during the discussions was whether it would be suitable to have the passengers to arrive into a surface hall in such an environment. The unanimous opinion was that, in this – basically traffic junction – an underpass would suit much better the environment than an institutional complex to be developed. Thus, the creators of the programme propose to make an underpass, which can be realised in two steps, which will insure the passage of the travellers arriving from the metro towards the main traffic directions. But in the second step it will provide an opportunity to approach the transformed shopping centre and the planned underground garage.

### **Bocskai út – Móricz Zsigmond körtér**

If we go further on the line, the stations of Bocskai út and Móricz Zsigmond körtér are the following. They can only be interpreted together owing to their proximity and if town arrangement points of view are considered. Móricz Zsigmond körtér is a dominant element of the area, which should be treated as a town centre of Buda as the designers think. The circus plays a similar role at the moment, too, this role will not be changed basically by this metro station but the quality of traffic will be considerably improved by it. The topic of pedestrian, road and public transport are among the most important problems arising during the planning. Within this, the most serious problem is caused by the numerous terminal points.

One of the aims of the programme is to modernise also the network of public transport parallelly with the metro construction. When considering the surface arrangement of the circus, the improvement of the pedestrian traffic and the creation of larger surfaces for pedestrians are very important points besides the strengthening of the town centre character. This aim, of course, is not contradictory with the method of creation of the metro stations – on the basis of the plan of the railway authority - with the solution of the passenger traffic at two levels. Another important topic is how to solve parking problems.

The designers suggest several types of solutions but a reassuring final result can only be provided by the underground garages to be newly built.

In connection with the surface arrangement, the question of time scheduling also arises. This is mainly important in the case of the circus, because there will not be any considerable surface arrangements in spite of the construction of the metro station in Bocskai Út. Here an underpass will serve the passengers. On the basis of this, some buildings will receive arcades for the stairs. But in the case of Móricz Zsigmond Körtér the time scheduling of the surface arrangement will be emphasised more because the present situation can not be maintained until the starting up of the metro. That is why during the preparation of the programme there will be a scheduling on the basis of which the final arrangement of the körtér can also be completed parallelly with the placement of the structures of the metro.

### **Szent Gellért tér**

The square and its environment can not be separated from the most important traffic junctions of the Buda area. Co-ordinated planning will be necessary from the point of view of both the road traffic and the public transport network. The construction of the metro station will not basically change the structure of the square but it may result in a considerable improvement from the point of view of the traffic. The decrease of the surface traffic and the improvement of the connection of the square to the city will considerably raise the quality of the area and its representative character.

During planning, the biggest debate was on the layout of the square. On the basis of the concept, the present green surfaces should be transformed in a different way. The aim is to have a kind of symmetry between the two most important public buildings of the square. Thus, by modifying the crossing of Bartók Béla Út and Műegyetem (Technical University) embankment the remaining pedestrian surface can be transformed. By this, a more representative square can be prepared in front of the buildings of the hotel and the university.

The exit of the metro station will arrive into the underpass on the basis of the plans of the railway authority. Owing to the two-level layout of the extension of the square planned on Budafoki Út, the high level passenger service and the demanding surface layout can be insured at the same time.

The time scheduling of the transformation is also an important point of view on this spot. This is because the final arrangement of the square and the embankment can be realised after the placement of the structures of the metro but before the starting up of the line.

### **Fővám tér – Kálvin tér**

The two metro stations – owing to their proximity and role played in the capital – can be discussed within one programme. Differently from the spots of Buda, the preparation of the programme is also made more difficult by the fact that the area in question belongs to the competence of three districts and the capital.

When creating the image of the future of the area the situation of the tram on the boulevard is the most important traffic question – in addition to the placement of the metro stations. However, to judge whether the tram should go or not in the boulevard, can not be the task of the designers when preparing a programme. That is why the plan will be made in two versions: with the tram and without it. Another important element is the stop of the tram no. 2, which would arrive at the surface of Fővám Tér. Thus, the structure in front of the University of Economics will disappear owing to which a more cultural surface traffic can be realised. The fact should not be forgotten either that by this the connection of the metro station and the tram will be simpler.

In the case of both squares the designers aim at creating more cultural pedestrian surfaces and increasing green surfaces. The same considerations dominate the arrangement of the

Little Boulevard independently from which form of the tram traffic will be realised. The aim is to widen the pavement, to combine parking lanes with green surfaces everywhere.

### **Rákóczi tér**

The square and its environment can be treated as an already completed area. On the basis of this, the fundamental task is to match the planned metro station and its exits with this environment.

Rákóczi Tér rather functions as a square than a park in the life of the town. During the preparation of the programme the designers aimed at strengthening the park functions as much as possible and erasing the already mentioned character of public area with trees. Thus the proportion of covered surfaces will decrease compared to the green surfaces and the passage across the square will be improved.

The most important question is how to protect the trees of the square. In the station building technology of the railway authority only some of the old trees can be safely protected. At the same time, the trees of the square only provide together the image which the citizens have already got used to which should be protected. That is why during the preparation of the programme the designers will elaborate the version, which projects the creation of a new park – without modifying the place of the metro station.

## **PASSENGER-FRIENDLY METRO LINE**

**Passengers consider the metro a comfortable mean of transport if its route is suitable, its station distribution is optimal and if its connection is co-ordinated with the other means of transport under and on the surface. An important point is also that the line should insure a fast and reliable passage to the destination. The metro line no. 4 will insure all this at high level for its prospective passengers.**

We have published details in the issues of our newsletter so far, on which kind of metro wagons will go on line no. 4. We have presented the most important principles of automatic train control. We have published details on the emergency prevention systems to be applied for the sake of safe traffic. Now we are introducing what the passengers will see of it and how the systems installed for their benefit will serve their comfort.

### **Fast and reliable**

It is elementary from the point of view of the passengers that their travelling should be fast and can be planned. The time of travelling by metro is influenced by the dynamic parameters of the train and the method of organising the traffic. The dynamic parameters of modern metro wagons are defined on the basis of standards almost all over the world. In these standards the designers also defined high-level expectations from the trains of the metro no. 4.

The highest level of traffic organisation is an automatic train controlling system, which matches traffic requirements on the basis of automatic scheduling control. How travelling can be planned is mainly insured by the automatic control of the pace of train traffic, and all the random elements are excluded. Such a train controlling system will be installed on the metro no. 4.

### **CPTD: The specimen of the service**

Passengers should feel during the full time of travelling that they are cared for, they are in safety and they are served. This complex task is fulfilled by the Central Passenger Traffic Dispatcher (hereinafter: CPTD). CPTD only means the dispatching equipment created for the sake of the supervision and service of the passengers and the service operating this equipment. The centre can be found in a room shared with the Central Traffic Controller

(CTC), thus it continuously receives information on the movements of the trains. At the same time, owing to this, the CTC always knows exactly what is happening in the passenger traffic areas of the stations.

The work of the CPTD is assisted by computers and colour screens. The supervision of the passenger traffic is insured by the series of screens assigned to each station. By this, all the passenger traffic areas of the stations can be continuously traced by a closed chain industrial television system. The screen pictures can be automatically or manually downloaded. In the case of traffic disturbances the pictures can also be recorded by a video recorder.

### **Various passenger information**

Passengers should receive information already at the entrance and should be helped in orientating themselves in an unknown space. At an apparent place, clear, visual information should be provided which is independent from any languages. The passengers should receive information on travelling opportunities, the fees and other conditions of travelling. Important elements of the initial "briefing" are the ticket vending machines and the ticket punching machines installed at the entrance.

Besides static information displays in the passenger traffic areas of the stations, visual passenger information displays with changeable text contents are also necessary. They are controlled by the CPTD similarly to the passenger information broadcast by loudspeakers. By this latter individual information can also be broadcast. Emergency phones will also be placed in passenger areas by which the passengers can also initiate information exchanges with the CPTD. Displays will also be placed on the platform, which show the length of waiting time remaining until the arrival of the train.

The passengers' movements on the platform are supervised by a safety equipment which stops the incoming train in the case of emergency – for example when somebody falls between the rails from the platform – and switches off the dangerous dragging voltage. This function can also be activated by any passenger if the manually operated emergency button is pushed.

Following the passenger exchange the passengers are visually and acoustically informed about the closing of the doors and the start of the trains. The passengers are informed by loudspeakers on the trains and this kind of information can be spread by both the train supervisor and the CPTD. There are also emergency phones on the trains for the passengers.

After the arrival of the passengers to their destination, the most important task of the information system is to provide information how the passengers can leave the station the most comfortably and quickly possible. Their movements should also be assisted by easily understandable information means in this case in order that they can approach their surface destination in the simplest possible way and reach the exchange connections.

## **ACTUALITIES**

**In our permanent rubric we inform our readers on the events of the period which has passed since the publication of the previous issue of our newsletter. We expect that by our rubric everyone can trace the arborescent process of the metro investment in an up-to-date manner.**

### **The aim of the investment – the authorisation document**

The final version of the aim document on the surface arrangement of the investment programme has been prepared which the Lord Mayor will propose at the June meeting of the General Meeting of the Capital.

## **The approval of the programmes**

On its meeting of 14<sup>th</sup> June, the Town Construction and Town Image Protection Committee of the Local Government of the Capital discussed and approved the arrangement programmes of the six areas, which had been completed so far. On the basis of this the elaboration of the regulation plans on the stations and the environment of Tétényi Út, Móricz Zsigmond Körtér – Bocskai Út, Szent Gellért tér, and Fővám – Kálvin tér can be started.

## **Development opportunities on the line of the metro no. 44**

During the preparation work the search for development opportunities has become urgent. The study on this matter approaches this question from two aspects. On the first hand, on the basis of the existing conditions and on the other hand, on the basis of real estate development ideas. In the first case, the real estate developments realisable within the framework of the existing and approved regulation plans are examined. The second examination method starts from real estate development ideas, that is from ideal solutions based on the market. In this case, the usage of spaces above the stations is defined on the basis of what will be demanded on the spots based on the dynamics of the area in question. What are the functions (offices, flats, trade, entertainment or mixed usage) and in what volume the market of which can be created by real-estate development.

As a result of the comparison a development proposal and an action plan will be available on the spot of high importance. They will contain the steps to be taken in order that just the proposed solution should be realised. How an "organised environment" can be created where the best ideas, master plan concepts and project elements can be unified.

## **The Disposition Study Plan has been prepared**

Owing to the extension of the metro construction the DBR Metro Project Management is examining the opportunities of surface arrangements which have become necessary and which can be potentially brought forward. Backed on the earlier precedents, the detailed and clear Disposition Plan containing the technical solutions of the arrangements in connection with the metro separately for the Pest and Buda side has been prepared.

The Disposition Study Plan gives a comprehensive picture on the borders of the planned areas, the places of pipelined and cabled public services, the network and equipment of public lighting and the various structures. It covers separately organisation questions, the construction of traffic technique during the construction and its final solution. It contains preliminary construction draft plans and presents the planned scheduling of the execution.

This documentation of two volumes considerably alleviates the organisation of the future procedures of public purchases and tenders. It is because by this documentation the planning tasks can be exactly defined, it stipulates the job parts to be prepared during planning, stipulates the technical requirements of the Mandator, and the relative national regulations. The Transport Department of the Local Government of the Capital is examining the plan at the moment.

## **Professional Days of Tunnel Construction and Civil Engineering**

Professional days connected with an exhibition were held at the end of May. Besides the lectures on the metro line no. 4 of Budapest, the experts accounted on the tunnel and bridge of the Hungarian-Slovene railway line under construction and the European and Singaporean tunnel constructions. Within the framework of the conference the participants also looked at the bridges to be constructed on the Hungarian-Slovene railway line and the tunnel of Ballahegy. In connection with the construction of the Hungarian-Slovene railway line, a tunnel will be built in Hungary, too, after a long time, which is the consequence of the changed European map, the good neighbourhood relations and the wider regional co-operation. It can be said that a new period has begun for civil engineering and within this,

tunnel construction. The realisation of the necessary elements of the lacking road network, the more and more important points of view of environmental protection, the more and more impossible routes, the diminishing of areas and level of construction require that roads and railways should be led underground on critical places.

The usage of underground areas is a requirement in several cases, mainly in towns with dense building network, thus mainly in the case of Budapest for the purposes of public transport, parking and trade. It is convenient to take this point of view into consideration in connection with the planned structures of the metro no. 4.

## TEN SQUARES – TEN STATIONS

**From the view drawing prepared on the basis of the Railway Authority Permission plan we are presenting now the surface arrangement of Kálvin Tér and Rákóczi Tér and the layout of the stations. It must be emphasised again that they are plans and ideas on which we are continuously agreeing with the concerned authorities and competent local governments.**

### Kálvin tér

The biggest change – if this version is approved – will be that there will be no tram there. On the basis of the plans, on the place of the rails and the stops green surfaces will be created. On the basis of the proposed version the metro no. 4 will go above the existing metro line and its exit will be connected to the shopping corridor of the underpass of Kálvin Tér. By this solution considerable costs can be saved during the construction.

By the exchange opportunity high-level public transport connection will be generated between Southern Buda and Northern Pest and Southern Pest.

In Kálvin Tér the rails will be placed at 22.4 meters deep. 11 travelling stairs and 2 lifts will deliver the passengers to the level of the underground crossing. The station will be built with 2 exits and a deep-level connection will insure the exchange for metro line no. 3. The designers expect 85 thousand of getting off and 78 thousand getting on passengers every day.

### Rákóczi tér

Two exits are planned for the metro. The passengers can get to the underpass level by travelling stairs towards József Boulevard from where stairs will lead into two directions to the square on the side of the boulevard. Two big lifts will take the passengers towards the fair-hall.

The station, as an accelerator, will influence the rehabilitation of the area. It will improve the image of the area, allowing the appearance of investments. József Town can become a dynamically developing city also outside the boulevard.

The rails of the station will be placed at 19.3 meters deep. 4 travelling stairs and 2 lifts will take the passengers to the surface. On the basis of the preliminary calculations, 43 thousand getting off and 38 thousand getting on passengers will use the station every day.

## **MADRID: THE MOST DYNAMIC EUROPEAN METRO CONSTRUCTION**

**In recent years the metro constructors of the Spanish capital have almost performed a wonder: they have constructed more than 55 km of new metro lines by using government and town resources in less than four years. Owing to this, 6 km of lines are shared by 100 thousand citizens of Madrid which is four times more than in Budapest.**

The oldest citizens of Madrid still remember when the Spanish king, Alfonso XIII. inaugurated the first metro line of the capital at the end of 1919. Since then 80 years have passed and the short metro line has developed into a huge network. There was only a metro line of 4 kilometres then and today there are almost 180 kilometres. Then there were 8 stations and now there are 157 of them. On the first line 20 carriages were used and now more than 1320 are used on the eleven lines of today. The present Spanish king, Juan Carlos does not inaugurate only one metro line in his life but he inaugurates one new metro line or extension almost every year. It is because a dynamic construction is going on: Until 2003 new lines of 50 kilometres are planned to be constructed.

The task of the following few years is to construct a new circle line of 40 km which will connect the already operating lines and the railway stations of the suburbs. In the first step 27 stations will be built and the preparation work of three further stations will also be completed which will be opened later. A line extension of 10 kilometres also belongs to the development of next years.

The reason for the development of great pace is simple. Buses and trams can not insure the public transport at the necessary level in the capital with 3 million citizens. The reason for the construction of the first line was the same. Experts recognised already in 1916 that the tram going in the city was not enough; means of public transport with bigger capacity, which is faster and more reliable were necessary in the town.

Madrid has an exceptionally various metro network. Deeply led lines, lines directly under the surface and lines on the surface can also be found. The distances between the stations of the fast metro line connecting the airport and the city are very long while on other lines only a few hundreds of meters separate one station from the other. The trains are also various. On older lines so-called little profile trains are used which are mainly like the newer trams in Budapest. On more modern lines, similarly to Hungarian metro carriages, the so-called big profile, longer trains are used. The metro of Madrid carries the passengers from 6 o'clock in the morning to half past one in the morning and in the rush hours the trains follow each other every 2-5 minutes.

When constructing the metro network the designers aimed at connecting the metro organically to the other means of town and long-distance transport. That is why the lines meet the suburb railway network at several points and we can always find a metro station near big railway stations and bus stations, too.

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