

# **Implementation of Endoscopic Model Simulation: Essen-Centre - The main railway station**

*Wolfgang Thomas*

University of Essen, Germany

## **Assumptions**

With approximately 630,000 inhabitants Essen belongs to the six biggest cities in the Federal Republic of Germany. Essen owes its international reputation to a strategically unique position in the centre of one of the biggest economic conurbations on the European continent. Where, historically speaking, the middle of the previous century only documents Essen as an unimportant abbey town, since the turn of the century it developed, particularly in the period between 1930 and 1960, to the industrial capital of central Europe. This important position of Essen has continued well into the nineties despite the sudden collapse of the coal and steel industries. In a process of change, comparable to that of industrialization, the "Ruhr metropolis" has undergone a transition from a centre of industrial production to a centre of service industries; thus, contemporary Essen represents one of the most important centers of commerce in the heart of Europe: distinguished location of fairs and exhibitions, location of headquarters of internationally renowned industrial and commercial companies, centre of seats of energy supply companies, centre of shopping activities and university town. Corresponding to the strategically favorable assumptions, it is in and in the vicinity of Essen that the most important traffic routes of the continent meet. This is true for the railways, the roads, the waterways and for air traffic.

The position of the main railway station of Essen, in the geographic centre of the Ruhr conurbation, symbolizes this unique trait: parallel routes of the regional and supra-regional networks of long distance traffic, that is, railways and motorways, meet directly in the centre of the city; efficient local trains (S-Bahn) provide a first class link with *Düsseldorf International Airport*; finally, the public network of local traffic secures, from a functional point of view, optimal access to all suburbs of and places in the vicinity of Essen by conjoining all the different means of transportation in the railway station itself. Seen from the aspect of town planning those traffic systems mark the focus where the business oriented city and Essen south meet. The southern part of Essen is characterized by urban living, industrial administration, a wide range of shopping outlets, cultural events and spare time facilities.

Unfortunately, the potential, from the point of view of town planning, of the main Essen railway station is extremely disproportionate to the esthetic and atmospheric reality. Instead of providing a meeting point and a centre of supra-suburban communication the main railway station is cut off, by wide traffic routes, from its southern and northern surroundings. Thus, in particular, the car traffic searching for spaces to park causes dangerous situations, noise and exhaust fumes and drastically underline the impression which frightens off pedestrians; riding a bicycle becomes a potentially lethal adventure. The north-south route, which is absolutely dominated by car traffic, immensely aggravates the above mentioned irritating factors: "Trespassing at one's own risk". Thus, it is not astonishing that the system of tunnels which is completely cut off from the outside world serves as an important level of distribution for the pedestrians. If one uses this system, however, it becomes a hostile zone which lacks, even for people familiar with the place, any possibility to orientate themselves.

The main railway station of Essen is - and there is no beating about the bush - a psychological barrier which can hardly be bridged. This is valid for the innocent pedestrians of the north-south route on their fenced-in pavements on the main traffic level as well as "underground" (in Ruhrdeutsch "unter Tage") as a native of Essen would say. But this is also valid for people who, on five levels altogether, look for different means of transportation (underground, local trains, long distance trains such as Intercities, local buses) and their scattered places of access. Thus, the passage from the Intercity platform, situated on the north side, to the fast-bus stops, situated directly below the Intercity platform, makes excessive demands even on the best guiding system. First-class passengers have to walk - if they do not prefer a taxi out of desperation - about half a kilometer across the underground distribution level. It is even worse for the user of the local trains (S-Bahn) who tries to reach the platform on the same level from *Rellinghauserstraße*. He or she will probably go for a multiple, that is 8 times, crossing of roads, because an "adventurous" alternative will lead him deep down to the underground level, to the wrong platform, so to speak.

In order to put the rather provincial main railway station of Essen into the middle of a lively communication between the south of Essen and the city involves the dissolution of its isolated position as a traffic island. From the point of view of the town planner it also means to correlate, in terms of space and atmosphere, the station with the buildings of a high identification value situated on the north side. But this does not mean in the least to promote the monotony of anonymous office architecture around the main railway station by a higher density of buildings.

Reinforcing the activities of the *Huyssenallee* would already provide the link with the *Rüttenscheid* shopping mile, the railway station in the centre of an inner city axis parallel to the underground route, from *Rüttenscheid* to the university. Thus, the pedestrian would have within his or her walking distance the whole range of tertiary services: university, city administration, alternative shopping facilities, cultural and leisure time amenities, even the recreational park "Stadtgarten". The concept tries to prove all this in detail and illustrate it with simulated pictures. A student project group at the university of Essen analyzed the inner city situation thoroughly. They focussed on the problems relating to the main railway station, departing from a structural and analytical account of the situation.

### **Simulation of Urban Space**

The analysis of the ongoing conflicts points to the individual car traffic as the core cause of the railway station being noticed more as an obstacle rather than a link between the city and the south of Essen. A preliminary basis of a solution is provided by the recognition that the railway underbridge will have to be closed for car traffic. This is also the position of the town planners of Essen. The same also holds for the square in front of the railway station and part of *Hachestraße*. The southern side of the station should also be relieved of through traffic. This assumption opens up new possibilities of a thorough re-formation of the available space. The underground distribution level, up to now "underground", provides a remarkable potential of a three-dimensional development of the area of the railway station. A vertical section along the underground route between *Saalbau* and *Gildehof* circle points unambiguously to a ground level link with important parts of the city centre. The street space around the hotel "Essener Hof", situated east of the hotel "Handelshof", could merge with the distribution level on the same niveau and thus open up a second zero level. The same is true for the distribution gallery, situated between the main level of the station and the track level on the one hand and the edge of the built-up area of the "Südviertel" on the other hand: both are approximately on the same niveau. The slope between the two intersecting poles comes to about 26 meters.

The video simulation [1] of the situation, from the pedestrian's point of view, illustrates the effects by direct comparison or by using the technique of superimposing reality and model:

"We enter the main station square at the northern end of the underbridge. The design concept uses the basic possibility to open part of the former street space in a downward direction. The effect, seen from the perspective of urban space, of this procedure for the distribution level

is obvious: the distribution level receives the quality of a lower zero niveau. The three-dimensional experience no doubt also enriches the upper zero niveau. A mutual revaluation cannot be denied. *Hachestraße* will also obtain a new face and becomes part of the three-dimensional development. The view to the west opens up astonishing possibilities. The spatial limitation to the west by a high rise building is rather an abstract hint.

The experience of the design concept, seen from the urban space perspective, departs from where city centre and lower zero level meet on the same niveau: the upper zero level is supposed to facilitate the orientation in the direction of the new entrance situation of the main station: to the right the entrance of the hotel "Handelshof". Now a view of the slightly lowered niveau of the "Handelshof terraces" before we are going to observe the whole project in question from the lower zero level. We enter below our previous location and move slowly in the direction of the station entrance. Above, to the right, we can still recognize the canopy of the "Handelshof terraces". We continue on our way until the view into *Hachestraße* opens up and change again, for the benefit of better orientation, to the upper zero level. When we leave the bridge we are at the old northern entrance of the station. We approach the corner buildings where *McDonalds* still invites us and have a closer look at the now two-floor arcade. From the central position a change to reality. At the same location we have a glimpse of the prospective promenade in front of the main post office and turn towards the south. Here we also superimpose the real picture. Halfway up the stairs another turn in the direction of the promenade in front of the post office, before we return to the lower zero level. Here our walk westwards ends.

From this perspective it becomes clear why there should be no high rise buildings between track level and *Hachestraße*. Because it is only in this way that the traveller can obtain a view of the characteristic buildings of the city. At the niveau of the upper zero level we experience the well-known perspective on to the station square, with the high rise building of the *Bahn AG* as an eastern limitation.

We return via the lower zero level, along the shopping arcade, until we are in sight of the track level of the main railway station; reason enough for a change to this level of communication. The futuristic perspective points to significant changes. This is confirmed even from the perspective of the more remote tracks. Again we return to the op-

posite view position of the lower zero level: from a slightly elevated landing these pictures illustrate a turn of 135 degrees and show a view of the more or less characteristic buildings of the square. We take our position now below the landing where *Hachestraße* and main station square merge: In the northeastern direction we experience “Handelshof“ and “Haus der Technik“ from the perspective of the former distribution level. Particularly impressive is the two-floor arcade of the “Haus der Technik“. It is situated diagonally across the shopping arcade which we have just passed from the west. Going into the same direction we approach the point where our walkabout through the lower zero level started. Now we are below the “Handelshof“ and the terrace situated in front of it. In order to mark our way better for the last part of our walkabout we change again to the main entrance of the hotel “Handelshof“. The atmospheric changes cannot be missed.

Now we continue our interrupted walk and are at the entrance to the terrace of the “Haus der Technik“: Here begins that part of the lower zero level which were to continue the present tunnel system to the east. We enter that part along the row of shops below the terrace zone. Finally, we turn to the eastern ascent to the upper zero level. An illustration of the access to the main station from the east is restricted to the zero level: On the basis of a real picture the alternative possibilities of access. The pictures show clearly that the lower zero level can also be reached via the *Haus der Technik* terrace. A turn to the south opens up a zone which today is absolutely dominated by dormant traffic and is thus not normally noticed by the pedestrian. Finally a survey from the window perspective of the high rise administrative center of the *Bahn AG*. Approximately the same ground-plan position from the perspective of the pedestrian. And, last but not least, the diagonal relation to the prospective main entrance of the station and its square: attractive location and communicative place.”

## Note

- [1] A copy of the video simulation can be obtained at Essen University / FB10 - Städtebau / P.O. Box 103764/ D-45141 Essen (Germany).