

# STRATEGIC MONITORING AS AN OPPORTUNITY TO PRESERVE CULTURAL HERITAGE EXEMPLIFIED BY THE TRACK HARP AND HISTORICALLY SIGNIFICANT TECHNICAL MONUMENTS IN FRONT OF LEIPZIG MAIN STATION, GERMANY

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## Summary

The technology change towards economically efficient rail services yields to a loss of historically significant technical monuments and gigantic inner-city wastelands.

A correct heritage management could be established by a strategic monitoring.

**Keywords:** monitoring, cultural heritage, preserve, technical monuments

## 1 Problem statement

We are currently experiencing a dramatic transformation of our urban railway infrastructure which had previously remained almost unchanged for nearly 100 years. Now we witness the loss of marvellous architectural testimonies, high design qualities and correlations in urban.



*Fig. 1 Inner-city wastelands, former warehouse facilities and track harp Leipzig, Germany [1]*

### 1.1 Discussion of the causes

We are observing

- a technology change towards economically more efficient and faster intercity and regional rail services with rail coaches but without shunting,
- a decline in general cargo transport and associated dispensability of inner-city trans-shipment centres, shunting yards and warehousing facilities,
- a division of the formerly institutional railway organisations into individual business entities with largely autonomously acting stakeholders.

## **1.2 Consequences**

Cities and monument conservator are degraded to mere onlookers of developments. They are confronted with accomplished facts – loss of historic fabric. Newly-built infrastructures do not contribute anything in terms of quality to sustainable urban development. But: Gigantic inner-city wastelands are created and open chances for re-positioning.

## **2 Case study: track harp of Leipzig Main Station**

The example of changes made at the historic track harp of Leipzig's main station and the 100-year-old railway infrastructure illustrate existing conflicts and outline strategies that have been initiated for their resolution.

### **2.1 Initial situation:**

#### **2.1.1 History of building and track harp system**

Leipzig (Saxony) is one of the cities that underwent gigantic growth through industry and trade at the end of the 19th century. Its population rose between ca. 1870 and 1900 from 100,000 to 450,000 inhabitants. Like in other European capital cities, some 100 years ago the railway sector with various individual rail companies was converted into one integrated structure and an appropriate infrastructure was developed [4–7].

Key elements of the station included a ca. 300 m long passenger building with a large hall (main concourse) and a glazed platform hall. Design of both structures was awarded in separate design competitions.

New-builds included track approaches with shunting areas and western and eastern freight yards, turntable engine sheds, water towers, control boxes, road and river under- and over-crossings, a separate postal railway station.

The facilities built between 1909 and 1915 were operative until after 1990 and were then de-commissioned in phases, starting with the postal station, Freight yard East, then West, utilisation of engine sheds, etc. Leipzig Main Station was refurbished from 1994 to 1997 and a shopping mall was integrated. Construction of a new S-Bahn tunnel started in 2003 (preparations had already begun 1909 below the eastern side of the station).

Until the political changes in Germany, all structure were in a reasonable state of repair and still existed. However, the railway company lost its economic interest in a continued use of the freight yard after 1990.

#### **2.1.2 The role of responsible organisations**

The decisive stab for the historic infrastructure installations was made by plans of DB Netz (rail network) which provided for connection of the new city tunnel and ramp structures and an autonomous new railway connection (Munich-Berlin, Frankfurt-Dresden) to accelerate inter-city transport. The project was implemented regardless of the consequences for existing infrastructures.

Leipzig Municipality was informed when the builder-owner required demolition permits, i.e. contract modifications in the so-called railway crossing agreements of 1909. There were strong protests by the Municipality, the local heritage management department (the structures were listed) and the state heritage management service – but to no avail. The refusal to sign a new railway crossing agreement in view of the described circumstances

prompted the railway company to agree to a monitoring scheme which was also charged with defining binding de-sign specifications.

This task was entrusted to the author (director of IGB, University of Leipzig).

### **3 Strategic monitoring**

#### **3.1 Initial activities**

First initial activities of the monitoring process were:

- Analysis of existing structures and condition of building fabric
- Review of documents regarding the new railway connection, geology, stress analysis
- Analysis of urban space-related objectives and natural spaces (River Parthe)

The findings of the monitoring task established the following:

- the building fabric was sound and had a high design quality,
- the superstructures were not suitable for new loads,
- more than 50 % of old structures will not be required/become dispensable in the future,
- there are aspirations to improve the pathway system, install bicycle trails, green spaces, make the River Parthe experienceable as a landscape space,
- public transport considerations have to be accommodated: Widening of roads and tram routes

#### **3.2 Interaction with the stakeholders, responsible organisations**

Subsequently, meetings were organised and hosted with individual stakeholders to sound out chances and scopes of action.

#### **3.3 Results**

What has been achieved by the monitoring process?

- Retention of correlations in urban space, alterations shall remain visible (preservation of foundations, archaeological monuments, etc.),
- Retention of symmetry with engine sheds and uniform visual effect and appearance of yellow clinker bricks, steel superstructures, balustrades,
- That is: Historic retention walls, bridge views, balustrades. etc. will be documented, stored and reconstructed true to their originals,
- A correct heritage management approach specifies that any changes, e.g. widening of support axes, etc., will be made with modern materials (welded structural steel, no falsifying reconstruction),
- Spaces will be made accessible to the general public, bicycle trails, green spaces, canoeing route,
- A lighting concept was additionally required and implemented.



*Fig. 2 Road intersection Berliner Straße and Rackwitzer Straße track harp Leipzig, Germany [2, 3]*

#### **4 Perspective, general references to handling with significant technical monuments of railway systems**

What will have to be improved in the future?

- Early integration into the planning process, i.e. already in the route planning phase.
- The heritage management department should abandon thinking in terms of individual assets and start envisioning cultural spaces, correlations in urban space (cf. World Heritage discussion).
- Enhanced awareness and knowledge at federal state level about which assets have a conservation value, are unique or dispensable,
- We have to learn to allow for changes and alterations.

In conclusion, it can be stated that our monitoring approach has succeeded in preserving essential structures and urban space qualities.

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