



Improving Train Station Design

Project

Pedestrian flows
train station Oerlikon

Organisation

Ernst Basler
+ Partner AG

Sector

Public transport
Train station design

Goals

Analysis and Visuali-
zation of pedestrian
flows for different
train station upgra-
dings

Topics

- Pedestrian flows through train station and environment
- Capacity bottlenecks
- Route choice behavior of pedestrians

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Gestaltung +
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Ernst Basler + Partner AG, a swiss based engineering company, conducted a simulation study of pedestrian and passenger flows at the train station Zürich-Oerlikon (Switzerland), based on several planned upgradings. The simulation study with SimWalk especially focused on a planned underpass, connecting two different quarters, „Bahnhofplatz Süd“ and a development zone called „Zentrum Zürich Nord“. The analysis provided solutions to the following questions:

- *What impact on pedestrian flows would additional stairs have, connecting underpass and platforms? How would they influence the route choice behavior of passengers?*
- *Are there any capacity bottlenecks in the system what regards platform boarding and alighting?*



The simulation study compared two different train station upgrading scenarios: one called „underpass with platform connection“, the other „underpass without platform connection“. Software requirements for this case entailed pedestrians choosing routes

depending on available capacities, densities (bottlenecks) and number of pedestrians in the system. Additionally, the software had to allow modeling of stairs based on actual capacity. The simulation study with SimWalk showed the displacement of pedestrian flows, depending on the different upgrading scenarios of Oerlikon train station.

Further simulation results were, firstly, the discovery of capacity bottlenecks of platform stairs leading down to the underpass. Secondly, additional bottlenecks were discovered at the entrance stairs to the underpass, connecting train station forecourt and underpass.

