

Shopping Behavior Simulation for the Reuse of an Existing Office Building

The reuse and restructuring of an existing building very often changes the flow dynamics of the planned facility in significant ways. Welle 7 in Berne, Switzerland, a former office building near the main station, was evaluated by Migros Aare, the largest regional Migros cooperative, regarding the effectiveness and safety of the flow dynamics of the building which was planned as a new concept centre.

The change from a building mainly used by office workers to a retail outlet poses significant challenges for the control of people flows. Whereas the flow dynamics of office workers in and out of the building are much more predictable, retail dynamics is influenced by many other factors, time of the day, weekends, weather, shop mix etc.



New interior design and people flow dynamics

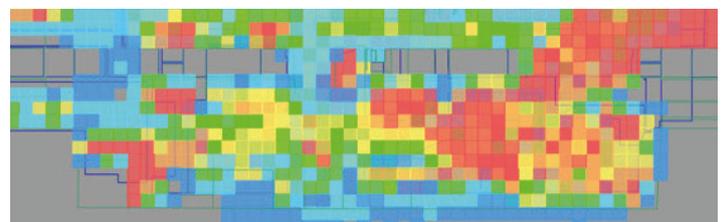
The restructuring of the 10'000m² area of Welle 7 included different shopping opportunities, leisure as well as educational activities with more than 10'000 expected visitors per day. Compared to the previous use of the building, the complexity of the interactions was expected to be much higher with the new use.

One of the challenges of the study was to integrate shopping behavior simulation as well as normal flows in and out of the building. SimWalk 5 supports the realistic simulation of shopping behavior with a new route choice model that includes activities (buy in a specific shop) and attractions (be attracted by a specific type of shop or location). The respective data for the simulation were estimated based on similar retail outlets and their visitor numbers and behaviors. Three cases

Retail Simulation

Migros, Switzerland's largest retailer, conducted an evaluation of the people flow dynamics of a former office building, reused as a concept centre. The new structure and a new clientele changed the flow dynamics significantly. The simulation study confirmed the planned layout and revealed some sensitive spots in advance which can be accounted for in the future.

were considered, a base scenario with average visitor numbers, a mid-range scenario for late openings and an extreme scenario with the highest expected visitor numbers. The study revealed that the planned layout was resilient in the base and mid-range case, whereas in the extreme case there were some hot spots and bottlenecks that will have to be accounted for if large numbers of visitors are to be expected. The Welle 7 operators will now have guiding principles to estimate the behavior of their facility regarding people flows in the future.



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