

Traffic Analysis

We prepare our own traffic analyses. We aim to minimize the required space by choosing the most efficient lifts.

The Building

High-rise buildings would not have been imaginable without lifts.

In most cases a traffic analysis is required to determine the necessary number, size and speed of these lifts.

Buildings equipped with too few lifts (under-elevated) are difficult to sell, while in buildings with too many lifts (over-elevated) the proportion between gross floor area and usable space is not right. The value of the building is also reduced as a result of this.

Our task as planning engineers is to ensure an optimal lift service with the least possible number of high-quality lifts.

Number of Passengers

Traffic analyses are based on both the overall number of passengers and the proportion of these passengers who have to be transported within a certain time within the building.

The transportation capacity of a lift system is regarded as sufficient if the 5 min transportation capacity during up-peak situation is equivalent to a set percentage of the number of passengers to be transported.

Suitable Interval resp. Average Waiting Time

The suitable interval time serves internationally as evaluation criterion. The suitable interval time is defined as the average time gap between two lift rides from the main landing station during up-peak situation.

An interval time of 30 s is the goal when dimensioning lift systems. In Germany, instead of "Suitable Interval", the term "Average Waiting Time" is used, with a half interval of 15 s.

Both terms are standards for planning and should not be mistaken for the actual waiting times occurring later during normal operation of the lift systems.

System Response Time

In existing buildings modern control systems can monitor each call at each landing station as well as monitor the time it takes after each call for a lift to reach this landing station in the right direction.

This so-called system response time would be identical with the actual waiting time if each user would make a call.

The monitored times can be averaged over shorter or longer time periods. These monitored and averaged waiting times indicate the quality of an existing lift system.

Distribution of System-Response Time		Evaluation
30 s	60 s	
> 75 %	> 98 %	very good
> 70 %	> 95 %	good
> 65 %	> 92 %	satisfactory
< 65 %	< 92 %	not satisfactory
Chart 1: Evaluation of the average system response time in office buildings		

Size of the Lift Car

The required lift car size is usually dependent on the number of passengers who have to be transported during one travel period to reach the necessary transportation capacity with a good average waiting time as well as the appropriate space needed per person in the lift car.

Stop Loosing Time

Stop Loosing Time is defined as the additional time needed for stopping at a station compared to travelling through a station without stopping.

Evaluation Criteria

In our opinion there are three criteria relevant for lift users:

- short waiting times
- as few stops as possible until the target landing and
- adequate room in the lift car so that direct contact between passengers is avoided