Innovative approaches to land use and urban development: creating livable communities

Case study: Berlin

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Content

1 Overview about transports within the city of Berlin

2 Boarding aids

3 Information and communication

4 Further activities
Berlin is served by an attractive, extensive, comprehensive and interlinked network of

- 9 underground lines (U-Bahn)
- 15 suburban railway lines (S-Bahn)
- 185 bus lines
- 23 tram lines
- 6 ferries
- 73 shipping companies.
Suburban and underground trains begin operating at about 4 a.m. and continue running until about 30 minutes after midnight. Many buses, some underground trains and the main suburban railway lines offer a night service. No other European metropolis has more underground lines which operate through the night at weekends and on the eve of public holidays.
BVG (Berliner Verkehrsbetriebe) – Germany’s largest company of public traffic

- Every day 16 times around the world
- 900 millions of passengers a year
- 2,5 millions of passengers daily
- 12.000 employees
The divided Berlin and its consequences for two different transport systems
Philosophy of the BVG

Based on the „Guidelines for the further development of Berlin as a barrier free city“ (15 September 1992) it is necessary to construct e.g. subway stations on such a way that the stations themselves, the vehicles and the relevant equipment are accessible and usable by all of the handicaped people without external help.
Philosophy of the BVG

All the activities for the handicapped people are also helpful for the other passengers.

The percentage of mobility impaired people is very low relatively to the total number of passengers but the barrier free design is good for all!
Barrier free design of public transport vehicles and infrastructure in Berlin

- 100 % of buses
- 40 % of trams (100 % in 2018)
- 100 % of suburban trains
- 73 % of suburban stations have a guidance system for visually impaired people
- 46 % of subway stations have a guidance system for visually impaired people
- 99 subway stations and 118 suburban train stations are equipped with elevators or ramps
BVG assistance for mobility impaired people

Authorized person of BVG for mobility impaired people is giving advices in a subway station
Mechanical folding ramp for buses
The new double-decker has space for two wheelchairs
New generation of trams „Flexity Berlin“
The new tram „Flexity Berlin“ has space for two wheelchairs
Field study: Comparison of an electromechanic and a manual operated folding ramp at regional trains

- Hoisting lift on the platform
- In the train integrated electromechanic ramp
- In the train integrated folding ramp
Field study: Comparison of an electromechanic and a manual operated folding ramp at regional trains

<table>
<thead>
<tr>
<th></th>
<th>Lift on the platform</th>
<th>Electromec. ramp</th>
<th>Manual oper. ramp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrying capacity</td>
<td>260 kg</td>
<td>350 kg</td>
<td>350 kg</td>
</tr>
<tr>
<td>Breadth</td>
<td>830 mm</td>
<td>970 mm</td>
<td>820 mm</td>
</tr>
<tr>
<td>Length</td>
<td>1650 mm</td>
<td>1000 mm</td>
<td>1200 mm</td>
</tr>
<tr>
<td>Height of platform</td>
<td>550 mm</td>
<td>380 – 760 mm</td>
<td>400 mm</td>
</tr>
<tr>
<td>Operated by train staff</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

WORKSHOP on Innovation in Accessible Transport For All Washington, 14 January 2010
Field study: Comparison of an electromechanic and a manual operated folding ramp at regional trains

**Which ramp do you prefer as the boarding aid for the train?**

<table>
<thead>
<tr>
<th>Ramp Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electromechanic integrated ramp</td>
<td>75%</td>
</tr>
<tr>
<td>Manual operated collapsible ramp</td>
<td>25%</td>
</tr>
</tbody>
</table>

**Which boarding aid do you prefer in general?**

<table>
<thead>
<tr>
<th>Boarding Aid</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hoisting lift on the platform</td>
<td>0%</td>
</tr>
<tr>
<td>In the train integrated ramp</td>
<td>75%</td>
</tr>
<tr>
<td>Ramp on the platform</td>
<td>25%</td>
</tr>
</tbody>
</table>
Mechanical folding ramp for subways
(Stored on the platform nearly the head of the train)
Information and guidance system for blind and visually impaired people

Accessible Berlin

PUBLIC TRANSPORT
- The trams consist of modern trains with a low floor, which also have ramps that can be lowered. These trams circulate on 14 lines.

- The public transportation of Berlin (BVG) has installed guidance stripes in over 40 subway stations. The surface of these stripes is corrugated to mark the edge of the platforms.

- In the new central station Hauptbahnhof a nearly complete information and guide system for the blind and visually handicapped people is installed.

Link for transfer by car: http://www.reiseagentur-c-mueller.de/
High contrast in the interior room and continuous handholds for better orientation of visually impaired people
Emergency module

**What is the concept about?**

The emergency module consists of three elements:

- the emergency brake
- the emergency egress device and
- the emergency communication system integrated in one module

**What is new or special about the concept?**

This emergency module was successfully tested by persons with different handicaps (physically impaired, wheelchair user, small stature...).
Periodical training of the mobility of handicapped persons (motivation)
Call center for consultancy activities especially for mobility impaired persons
Berlin on the way to a city without barriers

Accessible Berlin

BERLIN WITHOUT BARRIERS

- Berlin is located on the way to a city without barriers and the logo is the signpost for it

- especially in the last 10 to 15 years there has been much in progress

- The logo has been developed in close cooperation with representatives from industry, commerce, tourism, culture and science

- They create a catalogue with minimum criterias for the award
Thank you for your attention!