Urban Road Design

- Safety Deficiencies and New Developments -

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WUPPERTAL

Main Campus

Haspel Campus
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Schwebebahn – Suspended Monorail

Foto: www.polar.sunynassau.edu

Foto: www.answers.com
Black Spot (Example from Wuppertal)

Situation until 2003
Black Spot (Example from Wuppertal)

Pedestrian Crossings at a Bus Stop
No Accidents (Example from Wuppertal)

Situation from 2004
Deficiencies in Urban Roads

Excessive speed especially at the entry and through villages and cities

60 km/h and more…
Deficiencies in Urban Roads

Excessive speed especially at the entry and through villages and cities

Always keep in mind the braking distances !!!
Deficiencies in Urban Roads

Missing or insufficient sidewalks and cycle paths

Sidewalk?
Cycle/Donkey path?
Deficiencies in Urban Roads

Combination of Minimum Sizes

- In case of shortage of space, road users switch to the carriage-way.

→ Risk of accidents!
Deficiencies in Urban Roads

Missing Measures to prevent Illegal Parking

- Illegal parking, for example on the pavement.
- Line-of-sight obstruction.
- Missing safety clearances.
Deficiencies in Urban Roads

Lacking pedestrian crossings

• Visibility of Vulnerable Road Users?
• Waiting Time for Vulnerable Road Users?
• Stopping distance?
• Excessive speed?
Deficiencies in Urban Roads

Lacking pedestrian crossings
Deficiencies in Urban Roads

Insufficient Sight Distances

Quelle: SVPT
Deficiencies in Urban Roads

Missing a barrier free design

• Acceptance and Use of Sidewalks?
• Continuity of sidewalks?
• High kerbs?
• Elderly People?
• Bicycle Crossing?
Deficiencies in Urban Roads

Lacking consideration of Elderly People
The most effective Measures all over the world

Measures that are effective in reducing speed
  – The best effects being obtained by a unit of road design, signing, marking and enforcement
Measures that improve visibility
  – Many accidents in urban areas could be avoided by adequate sight distances
Measures that successfully separate road users
  – Non-use of separate facilities is a problem – high-standard design is needed
Reduce Speed

Measures for Traffic Calming

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Take care of Pedestrians Quality Needs

- Provide safe pedestrian facilities!
- Increase pedestrian crossings!
- Create adequate sight distances!
- Work with contrasts!

Source: MMMEV NRW
Take care of Pedestrians Safety and Security Needs

Always take care for the Visibility and Sight view at any Pedestrian Crossing

Fan = min. 20m
Fab = min. 15m
Provide middle islands
min. 2,00-2,50m, better more

Staggered refuge island (4 lane road)

Alternative: Median Strip in shopping areas
Design for All Road Users

D4A – Design for All Principles
Implement New Instruments

Road infrastructure safety management directive

Procedures of the directive
Simplify your City

Reducing complex situations

Source: Franz Linder, P3 Agentur, Cologne
Support Respect of Pedestrian Needs

Kevelaer (D), Verkehrsberuhigter Bereich (Traffic Calming Area) Roermonder Platz

10,000 veh/24h
Support Respect of Pedestrian Needs

Haren (NL), Shared Space Rijksstraatweg

8,000 veh/24h
Support Respect of Pedestrian Needs

Burgdorf (CH), Begegnungszone (encounter zone) Bahnhof

6,000 veh/24h
Support Respect of Pedestrian Needs

Biel (CH), Begegnungzone („common use zone“) Zentralplatz

10,000 veh/24h
Support Respect of Pedestrian Needs

Bern (CH), Tempo-30-Zone (open space) Köniz

20,000 veh/24h
Announce the Renaissance of Walking

Practical example

London – „walk London“

- Promotion of walking with a path network of 577 km.
- Connection of all 33 districts.
- Creation of a positive image.
Thanks for your attention!

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www.traffic-transport.org