



Bicycle Basics

Ergonomics and design for cyclists

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Principle: Road user as measure for design

- cycling means physical and mental effort
- cyclists are diverse, bicycles as well
- design must fit the human limitations



Cycling:

- human powered
- mental effort
- bicycle is instable vehicle
- no protection zone
- (almost) no suspension
- open air
- cycling is social activity



5 main quality requirements for bicycle infrastructure

- Coherent
- Direct
- Attractive
- Safe
- Comfortable

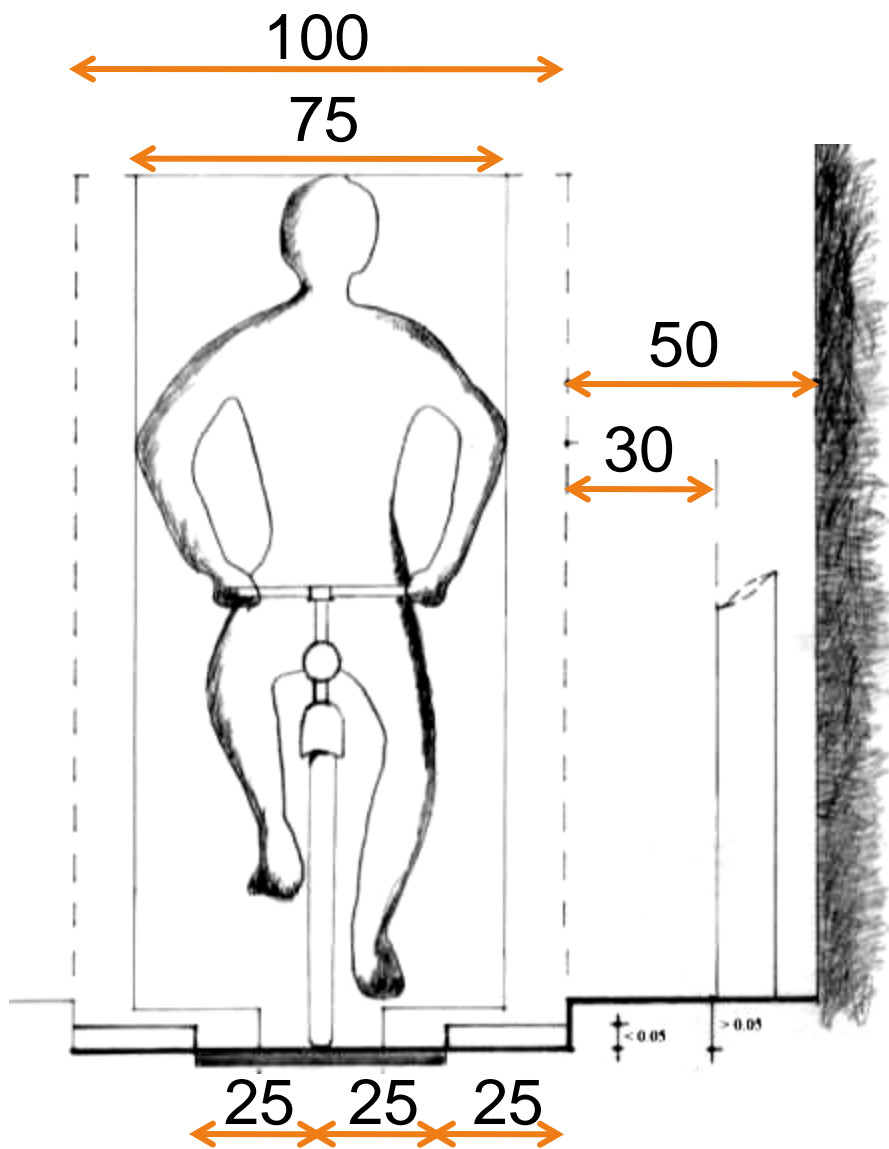
5 main quality requirements for b



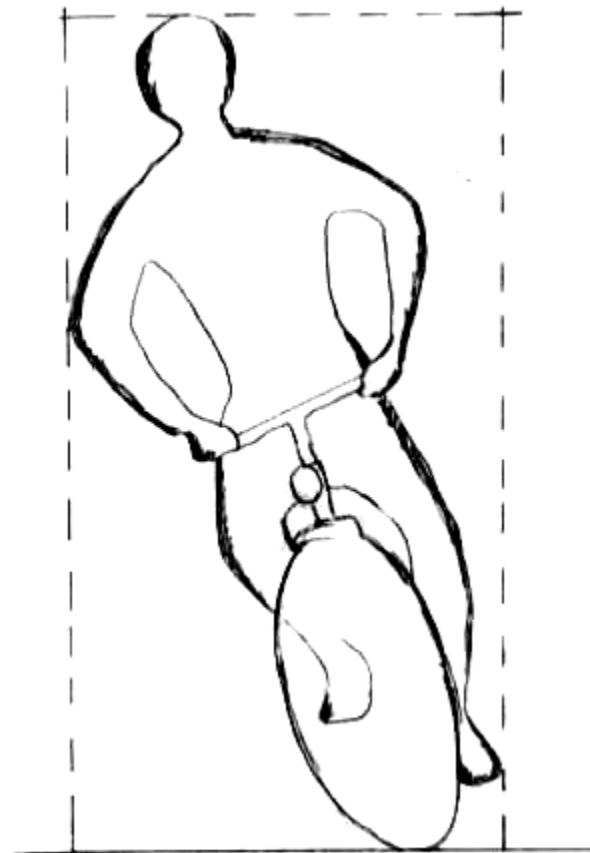
Coherent

- Direct





Enough space:



Enough space?



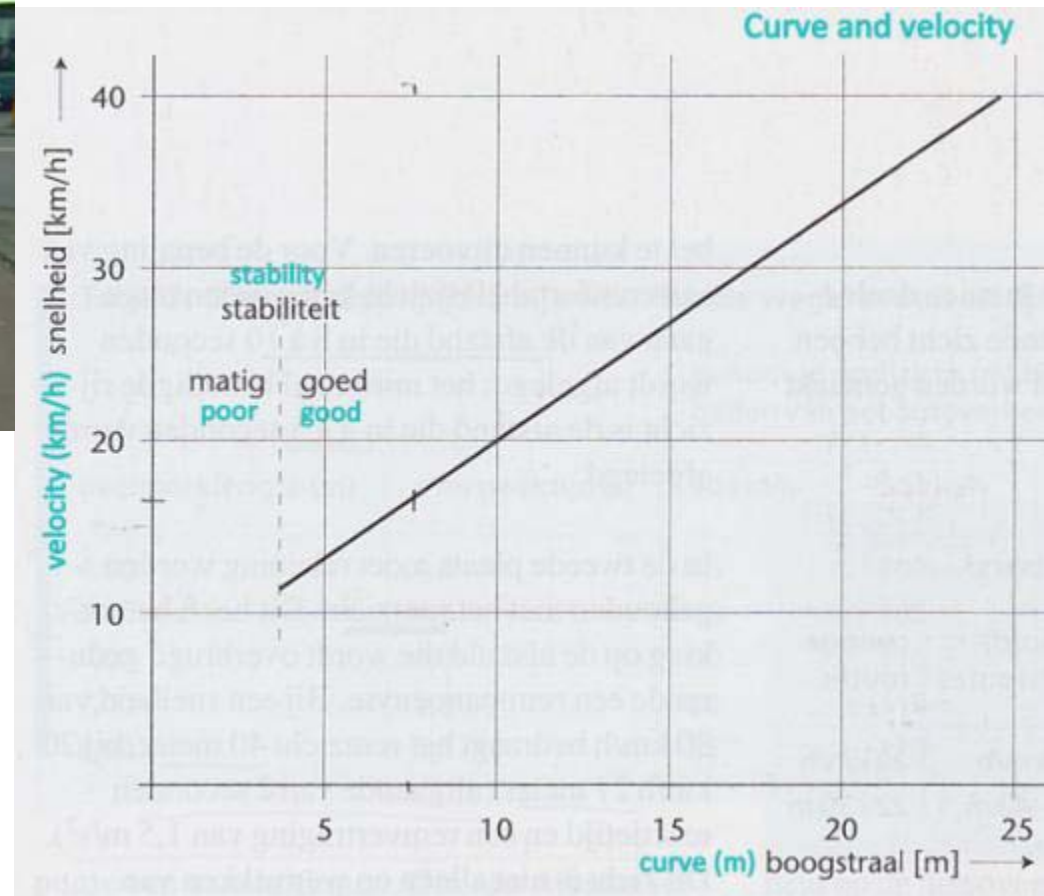
Enough space?



Enough space: curves



- speed = min. 12 km/h
- curves min. 4m
- more when faster



curves and space



Enough space: sight

sight while riding

- for reacting
- for stopping
- at junctions



Fysical effort:

- minimal energy loss
- smooth surface
- few stops
- direct routes



Fysical and mental effort



Mental effort

- complex traffic situations ask for more mental effort
- bad surface, narrow space and obstacles as well
- minimize the chances for mistakes
- forgiving design





Dutch Cycling Embassy

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