Cycling innovations - Best Practice by EIT Climate-KIC

Copenhagen: Focusing on simplicity

Copenhagen aims to make cycling simple and predictable. This innovation is about an overarching approach to create that simplicity and predictability by providing the right infrastructure that makes it clear how cyclists should behave.

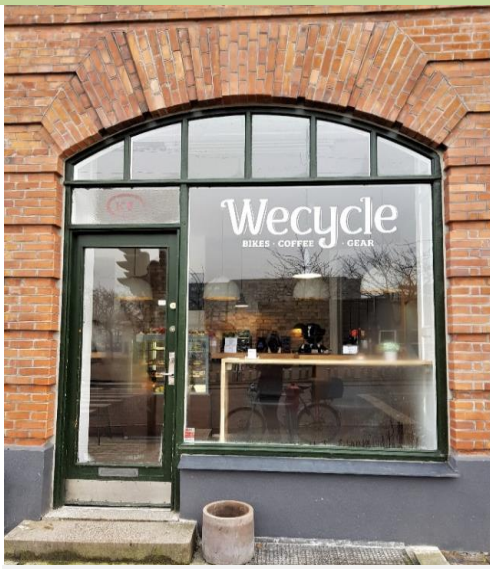
"Cycling in Copenhagen should be like brushing your teeth. You don't think about it, you just do it."

This aim has been successful thanks to a strict infrastructure legislation and planners who supported it. The cycling infrastructure is consistent throughout the city, so once a newcomer has learnt the overall cycling rules (where to place yourself at a junction, and how to signal turning and stopping), cycling in Copenhagen is easy, no matter where you are.
In Copenhagen, cycling can be done on all streets. With few exceptions, all main streets in Copenhagen have bike paths. On all roads with a faster speed limit than 50km/h there is a separate cycle lane.

Copenhagen has had some initiatives in redirecting space from either carparking or car lanes to implement bicycle lanes and bike parking to ensure more directness, space or simplicity for cyclists. The infrastructure is marked very clearly with curbs or infrastructural differences between road and pedestrian paths. This makes it very clear for cyclists where they belong and where they should go. It is also a good way to keep pedestrians out of the cycle lanes.

One solution to avoid accidents and to enable a better flow for the cyclist has been to move drains from cycle lanes to the curb. By doing so the drains do not interrupt the cyclist, but rainwater is still removed.
Interactions between cyclists at public transport stops are managed by ensuring a height difference or curb or paving stone difference between the bus stop / pavement and the cycle path. Parking spaces for cars are often placed on the outside of the cycle lane to protect cyclists from moving traffic.

The most famous crossing rule in Copenhagen is the solution of how to tackle the left-turn. This has been done very differently compared to the Netherlands where turning is done often with a green phase for cyclists in all directions at larger junctions. Cyclists who want to turn left at a junction, enter the junction but stay on the right-hand side, without crossing the traffic. They will stop on the right hand-side in the correct position (indicating to other road users that they are stopping by raising their right hand) until it is clear for them to cross the traffic. (most often when the light changes).



Context

Like in most cities, car-centric planning dominated in Copenhagen in the mid-20th century. The share of cyclists was very low in the 70s, but the city has since grown to be one of the key cycling examples of the world. The current situation is a product of priorities rather than a long history of having good bike infrastructure.

One of the key elements emphasised in cycling policy and plans is that cycling is not a means in itself. Cycling policy is about allowing the possibility to use cycling as a transport mode to reach the goods and services that are required. Thus the policy is very clear in making cycling a serious transport mode, and providing the right infrastructure and facilities so that people can choose the bike as a mode of transport.

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Climate-KIC is supported by the EIT, a body of the European Union

Driving forces

There were strong grassroots campaigns in the 70s in Copenhagen to keep the bicycle as a mode of transport and stop the building of motorways in the city. The level of the grassroots campaigns were not as strong as those in the Netherlands, but nevertheless managed to change the course of urban development – reducing the impact of the car in the city.

Seeing cycling not as a goal in itself, but rather having a goal of better lives in a better city, has resulted in the strategies being very user friendly. Copenhagen has tried to put the cyclist in the centre by using a user-perspective. The planning has been supported by the political level, and certain politicians have been driving forces in implementing cycling policy, leaving legacies behind them.

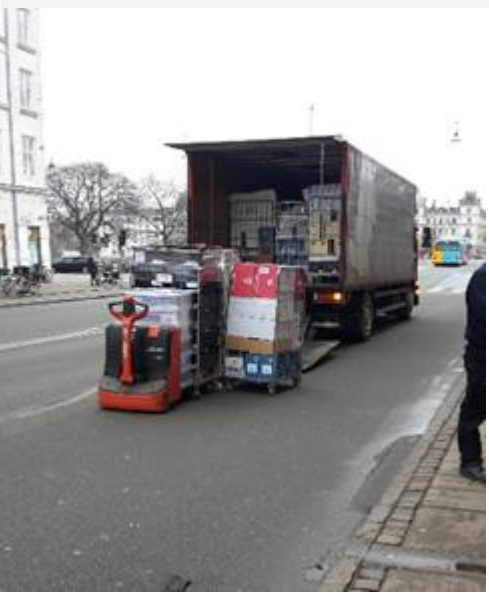
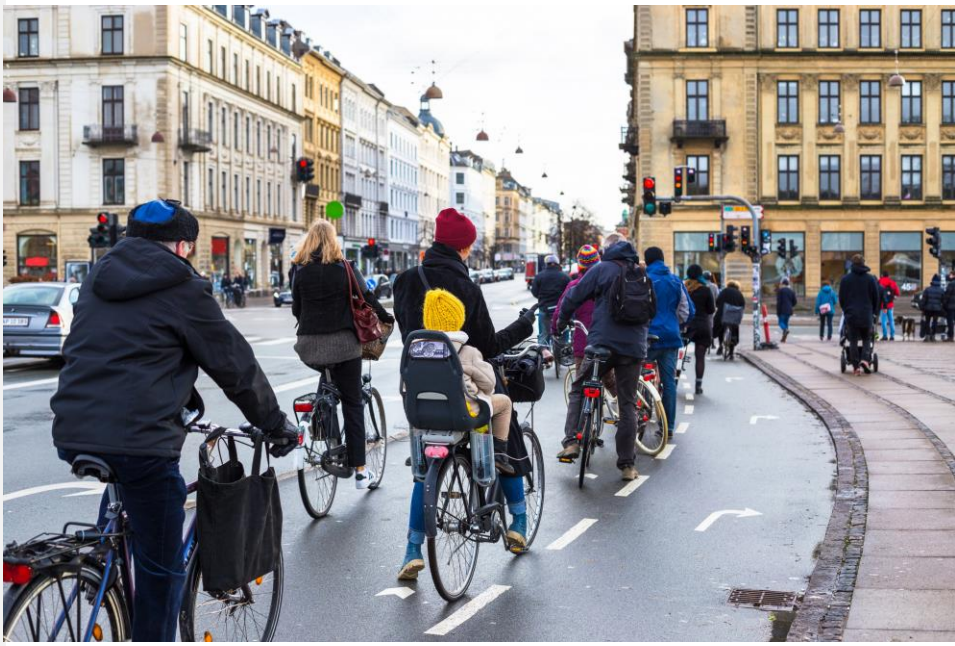


Foto: Tryck parked in bicycle lane

The turn is enabled by moving the pedestrian crossing a bit backwards, 2-3 meters. It should not be moved further back since it then means risking that car drivers don't see the pedestrians, as well as giving a lower standard for the pedestrians.

The gains with having a specific space for a left turn is that it creates a formal waiting space for cyclists who make a two-step turn. It becomes easier for cyclists to place themselves suitably, thus avoiding being in the way of others who want to continue straight forward.



Success factors

Having a consistent infrastructure has proved very successful. This is might also be why the left turn has become famous. When planning bike infrastructure, the city tries to prioritise the user perspective even though this sometime make the projects more expensive and more complicated to realise, than it would have been by just following the normal "roads standards"

Cycling is now integrated into all planning documents (ranging from Climate policy to Vision of the City). They see cycling from a holistic perspective, emphasizing that it is a mean of transport and most often not a goal itself. But there are also additional planning documents specific for cycling.

The municipality put a lot of emphasis on communicating socio-economic calculations to support the benefits of bike infrastructure in relation to investing in other modes of transport. Sometimes the municipality makes temporary trials where they before building the infrastructure try it out to evaluate and show if it works, before making it permanent. The municipality has also found that it is good to have some investment plans "on the shelf".

Barriers

One of the main barriers is the space needed for this type of cycling infrastructure. Even in Copenhagen the focus is on efficient car traffic flow which means that investments often cannot be made that decrease the space for car traffic.

The issue of car parking in the city is highly a politically controversial subject, and there is often a conflict between car parking demand and cycling infrastructure.

Even though there has been a great success in the left turn solution, and the implementation of it in, cyclist still need to signal what they are doing, for example signal that they are stopping.

Managing freight transport in combination with cycling is also problematic. Deliveries need to be made in the city, but there are today few good solutions of how to manage this, and large delivery trucks often park (illegally) on cycle lanes to make deliveries. At the same time, as long as the cycle lanes are very wide and deliveries are made outside of peak times, this minimises the problems.

Find out more?

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Scaling potential

Cycling in Copenhagen is sometimes described as a bumblebee. The insect shouldn't really be able to fly but it does, and likewise there shouldn't be as much cycling in the city of Copenhagen given the car-centred infrastructure and high level of car use. This means that other cities with high level of car use and car-centric planning can find it possible to adapt "the Copenhagen model" since they can recognise their own cities when looking at Copenhagen, and can see ways in how to systematise the work in prioritising the bicycle in a way that is understandable to them.

The key takeaway from Copenhagen is that it is possible to create simple, coherent infrastructure for cyclists, and the focus needs to be on making it easy for cyclists to understand and use, and apply it consistently across the city. To do this requires political will to dedicate space to cyclists prioritising them over other uses of urban space (e.g. car lanes, car parking, pedestrians, green areas/trees).

The left-turned method invented in Copenhagen has been implemented on a street in Stockholm. The evaluation showed that cyclists initially just kept turning left in a way that they were just to, but the usage of the turning space increased gradually. Interviews were conducted with cyclists in Stockholm, which showed that most cyclists found it clear how they were supposed to use the turning space and that they felt safer since the Copenhagen-method had been implemented.

This left-turn method has greater potential in places with one-way cycle lanes, since it doesn't really work so well with bi-directional cycle lanes. Even though there is a need for the infrastructure to be consistent throughout a city, one can start implementing new solutions at bigger junctions.

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