Bikeability or walkability?

Integrating bicycle and pedestrian lanes in Malmö

The city of Malmö is a bicycle friendly city: It proudly claims to be “a city for cycling [...] you can use your bike anywhere, all the time, all year round [...] people cycle because it is fast and simple, even in winter” (City of Malmö, 2022). The policy programme for the design of the city’s streetscape describes in detail how safe cycling will be achieved all around the city. The paved and slightly raised space alongside the streets is seen as a communal space that is to be shared between all types of pedestrians – people of all ages, backgrounds and personal characteristics – and bicycle users. Malmö City uses a principle of integrating bicycle and pedestrian lanes with no boundaries between them other than a mere shift in pavement material. It is an open question whether the city is a walk friendly city as well. Thus, the pop song about the shortcomings of the French capital is applicable to the streets of Malmö.

Piéton, cours te cacher ! Paris ne t’aime pas !

Fous l’camp de là ! Paris ne t’aime pas !

Piéton t’es en danger ! Paris ne t’aime pas !

Pedestrians, run and hide! Paris doesn’t like you!

Get the hell out of there! Paris doesn’t like you!

Pedestrians, you’re in danger! Paris doesn’t like you!

(Pias Recordings France, 2011)

In the following text, the two authors describe and try to assess the streets around the Malmö University.

An invitation to Malmö University

In his seminal work, the British sociologist Rob Imrie, retired professor from the Goldsmiths University of London, highlighted how the poor knowledge of the so-called ‘design professionals,’ i.e., architects, planners and building control officers, literally locks people with disabilities out from buildings and public spaces (Imrie, 1996). In combination with cultural beliefs and policies, the barriers of the built environment create social inequalities that become a core impediment to full participation for people with disabilities (Edwards & Imrie, 2003). Little suggests that the situation in Malmö is any different. When first invited to come and lecture at Malmö University, the second author raised some hesitations. After a series of vague pretences and an equal number of retorts asking for
clarifications between the authors, the second author finally abandoned traditional
politeness and started to outline the full problem of travelling to Malmö and getting by in
the city:

The planning principle for streets in Malmö turns the pavement space into a type of used
shared space between bicycle users and non-bicycle users. This means that the
necessary pavement space for non-bicycle users is split into narrow zones that non-
bicycle users, i.e., pedestrians of all ages with or without all types of assistive mobility
devices, must use while the lane for bicycle users must stay clear. This situation exposes
both fit and frail persons to the risk of colliding with one or more cyclists who rarely adjust
their speed to what is going on in the neighbouring zones.

A certain silence followed when the first author pondered the full implication of what his
colleague had just said in a rather sharp tone. Putting the not so underlying rivalry
between Malmö and Stockholm aside, she had put her finger on a very precise detail that
the first author also longs for when using the pavement space in the Western Harbour
district or elsewhere in Malmö: the overwhelming certainty of being the sole user type of
this space, or if not that, then that his fellow users travelling in the same direction as him
or in the opposite one, would use their individual bodies to move forward within their own
capacities or with the help of another human being, an assistive device like a manual, or
motorised, wheelchair or guided by a cane, a pram, or a walker, but not by the use of a
bicycle, a tricycle or a cargo bike.

In Stockholm, I feel much more comfortable, I mean both more safe and secure, in the
pavement space. The pavement space is adjusted solely to pedestrian usages, while the
bicycle zone is part of the roadway, making cyclists coexist with other vehicle users. The
zoning and detailing of the roadway allow for the free flow of cyclists going to or from
work, and the necessary responsibility for attention and respect of fellow roadway users
is shared between vehicle users, with the greater part of the responsibility naturally falling
upon the drivers of cars and heavier vehicles. In Malmö, no zoning or detailing separating
the pavement space from the lanes other than contrasting materials. The necessary
responsibility for the attention and respect of fellow users seems to fall on the non-
cyclists.

In search of pedestrian calm on the pavement while preparing for a lecture, the lecturer
and two accompanying persons came into direct contact with the design principle
implemented by the city of Malmö. During the walk, the streetscape came alive and
produced a series of incidents, observations and reflections as to why the seamless
integration of a bicycle lane in a pedestrian zone is not a good long-term solution. In
response to the French sociologist Bruno Latour’s idea of a “down to earth approach”
(Latour, 2015), this essay resumes the events that occurred in November 2019. The
essay retraces the tumultuous walk from Malmö Central Station to the main university
building Niagara, and, from this building to a second building, Orkanen, in which the
lecture took place.
**Outside Malmö station and TWSI**

A black rectangle set in in the pavement draws attention to the revolving door leading into Malmö central station. Normally, a revolving door is not considered as an accessible and usable access, but this door is the only access to and from the station. Tactile walking surface indicators, in the following TWSI, are installed in the pavement outside the station building. Inspired by the Braille system for tactile texts, the system was developed in Japan in 1965 by the Japanese engineer Seiichi Miyake to help visually impaired people find their way at pedestrian crossings, at train stations or in public buildings (Mizuno et al, 2008). Different markings give guidance on how to navigate in space, since their surface are detectable through the white cane. The exact combination of raised or grooved bars, cones or dots differs from one country to another. A visitor abroad needs to pay attention since the system for alerts and directional cues often is inverted in comparison with the national system.

Elongated surface bars for directional guidance, directional tactile surface (DTS), are either carved, grooved or raised to a level of 5 mm. The recommended width is about 600-700 mm wide and give directions as to how to walk (Ståhl & Almén, 2016). Each side around a DTS marking should be flat and about 600 mm. The DTS routes should be interrupted by zones for alternative routes or alert and warning. Such zones should have a size of 0,9-1,05 metres, but with a smooth surface (Trafikverket, 2016). The DTS routes often ends with a zone for alert and warning, i.e., a surface with raised cones with flat top at a level of 5 mm and in a grid some 5 cm apart, called warning tactile surface (WTS) (Trafikverket, 2016). This is the recommended pattern, but an alternative design with flat domes exists also. People with visual impairments consider latter pattem difficult to discern with a with cane (Trafikverket, 2016). The alert and warming zone should be some 1-1,5 metres long and so wide that it is detectable with a white cane and when standing on the zone (Trafikverket, 2016). At pedestrian crossings, this zone must be of a width of at least 600 mm and ending with a kerb stone. In length, this surface is about half the length of the crossing, about 1 metre, just marking the step and not the ramp. The kerb stone creates a difference in height between the pavement and the roadway of at least 5-6 cm (Trafikverket, 2016).

**Walking along Neptunigatan in the direction of Malmö University**

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**Figure 1.** The crossing at Skeppsbron with inconsistent use of TWS slabs and the street curvature affecting the access to the ramped part of the crossing.

**Figure 2.** The bicycle lane has priority over TWSI which results in cutting the slabs to align with the curvature of the lane. However, a person with visual impairments has probably more problems finding his or her way than a bicyclist without visual problems.

**Bicycle lanes overrun TWSI**

The paved bicycle lanes run between pedestrian space set in concrete slabs or natural stone and the roadway in asphalt. A visitor with visual impairments coming to Malmö will be puzzled, contrary to the recommendations, the necessary width for alert or warning at crossings is random, sometimes only some 35 cm plus kerb stone instead of at least 60 cm plus kerb stone. Furthermore, the WTS pattern has broad but flat domes. Instead of following the standardised format for defined zones for alternative routes and alert or warning, these zones are adjusted to the curvature of the bicycle lane instead of vice versa. The slabs are cut drastically to a half, or even less, of the required surface, see Figure 2. This design of the bicycle lanes and WTS suggests that bicyclists have priority over other users, see Figure 2.

At the other side of the street, to the right of the Malmö Stock Exchange, we choose to turn right to cross the street called Neptunigatan. Here, the pedestrian crossing is easier to traverse with a wheelchair since the ramped section is almost flush with the road level but also at a right angle to the pavement, see Figure 3. This crossing is also generously broad, with the traffic pole placed to the left. Like the crossings at Skeppsbron, there is a difference in height of about 8,0 cm between the pavement level and the roadway. This creates a low step to the left, indicated with TWSI, but the warning area is too close to the edge of the pavement. On the other side of the street we meet, for the first time, pavement markings in white against the black asphalt that indicate that the bicycle lane
has two directions, see Figure 4. In Malmö, bicycle lanes are normally intended for two-way traffic, but, generally, few traffic signs or pavement markings present this fact (Evenäs, 2014).

**Crossing the street and finding two bicycle lanes but no pavement space**

Based on the markings, the authors choose to understand the unmarked bicycle lane as a pavement space. On the bridge section of the street, dots in the asphalt suggests that this lane is divided into a third zone closest to the bridge railing, see Figure 5. Here, the authors also meet their first cyclists heading in the direction of Malmö Central Station in the pedestrian zone. Some cyclists use the unmarked lane, and honk at them, while other cyclists use the lane on the other side of the railing and with the bicycle symbol. Once, the authors arrive at the other side of the bridge, another conundrum appears. The first author concludes:

*This is a very strange solution since, here, the two visible lanes, the one for pedestrian use and, the one for bicycle use, converge. Suddenly, the bicycle lane has priority over the pedestrian lane. When we enter this zone, cyclists start to honk at us. At the same time, it is difficult for us to quickly discern where the pavement zone is and move away from the bicycle lane. On the left side, bus shelters for two bus stops form a row with small openings in between the shelters. There is no free space. To the right, raised planting boxes around trees seal off the free zone parallel to the façade. The obvious focal point for cyclists and pedestrian users alike is the crossing straight ahead that will traverse the street Nordenskiöldsgatan. Once, again, it’s obvious that the Malmö city design principle prioritises bicycle users.*

To the cyclists’ dismay, we must continue in the bicycle lane, making the right-hand side of the lane ours. At the time of our walk, most cyclists are dressed for work and not for exercise. This might also suggest that the pace in the bicycle traffic in Malmö at this hour of the day is agreeably slow, not including those cyclists who use the bicycle ride for exercising purposes. Very few of the cyclists we observed during the study used a helmet. This also indicates a clear difference between Malmö and Stockholm, the number of bicycle helmets; only some 15 per cent of cyclists in Malmö use a helmet, while the same number is about 75 per cent in Stockholm (Evenäs, 2014).
Figure 3. The crossing at the Neptunigatan allows for an easy and straight passage although the ramp has two directions, one in the direction of the movement, and another one to attenuate the difference in heights between the higher and lower part of the crossing.
Figure 4. The bicycle lane that is parallel to the Neptunigatan is bidirectional which is indicated with two bicycle symbols as pavement markings.
Figure 5. A dotted line divides the pavement zone on the bridge partition of the Neptuni-gatan. Visually, the line continues in a row of cobble stones that creates a boundary between the pavement surface set in granite slabs and the other part set in asphalt.

**From waterfall to full storm, on the university street**

Arriving at Nordenskiöldsgatan, we also leave the quite open and vast space that can be found around the previous streets. The street is denser, some twenty-five metres from the façade of the building on the one side to the façade on the other side. The two main buildings of Malmö University are located along the street, some two hundred metres apart. Near the junction with Neptuni-gatan, lies the Niagara building. The other building is Orkanen. Both buildings contain lecture halls and seminar rooms. On both sides of the streets, parallel and just outside the façades, you have the pavement spaces that are about two metres wide, set with quadratic slabs in concrete. Directly next to this zone, on either side of the street, you have the bicycle lanes, about two metres, see Figure 6. A narrow zone of about a metre separates the bicycle lanes from the roadway, set in cobble stones. The bicycle lanes are bidirectional with a somewhat more intense traffic since this grid is connected to the old central parts of Malmö. The street is some 425 metres long running in a North-South direction. There are two bus stops along either side of the street served by several bus lines.

Approximately 100 metres north of Niagara there is a pedestrian crossing. It has a width of approximately four metres, but it is completely inaccessible and unusable for any type of equipment with wheels. The pavements do not allow for ramps in an angular position in relation to the roadway, see Figure 7. The difference in height is substantial, some 12-15 cm, which means that the ramp length must be 1.2 – 1.5 metres, diminishing the free space for bicycles and pedestrians. There are no traffic poles or light signals, nor are there any TWSIs. There are not even kerb stones to facilitate for equipment with wheels. The crossing is inaccessible and hard to use. This is a very strange circumstance since it is the main artery between the university buildings. In addition, the number of students
with disabilities has increased both at the Malmö University and at other Swedish universities. Based on a small sub-sample of 8,250 students answering a national inquiry distributed to the 370,000 students who are registered at the Swedish universities, about 27 per cent of the students stated that they had some type of disability (UHR, 2018). The authors had a difficult experience making their way from the Niagara building to the Orkanen building.

*Outside Niagara, the pavement space is not wide enough for the large group of students gathering outside the entrances facing the streets. The entrances are drawn back some 2 metres from the pavement space. Universities have a tendency to create groups of people on the pavements. With little respect for the amount of people outside the buildings, cyclists angrily hoot at pedestrian users, regardless of their age, stature, or potential assistive devices if they block the free passage in the bicycle lane. Often a loud negative comment can be heard from the cyclists. Apparently, they assume that it is the pedestrians that should pay respect to the cyclists. As a group of three persons, of whom one is using a wheelchair, we receive the same treatment.*

The configuration of the street prioritizes bicycle users over other street users. The design promotes the free flow of cyclists, often travelling at high speeds, going to or from places of work. This means that what should be the reciprocal attention applying in any traffic situation with several street users becomes mainly unilateral attention paid primarily by pedestrian users of all ages, some of whom use mobility devices. Even other vehicle users, like bus drivers, car drivers, lorry drivers and motorcyclists must pay extra attention to the cyclists at the pedestrian crossings to avoid colliding with those who take advantage of the very last seconds of green light for crossing. It is quite a stressful experience using the pavements around Nordenskiöldsgatan during rush hours.

**Cyclists and pedestrians in Malmö need universal solutions**

The city of Malmö aims for streets that can be universally used by a multitude of users, but the limitation lies in a design principle that refers to the spatial configuration rather than the harmonisation of user behaviours. Research indicates that integrating bicycle lanes in the roadway that other vehicles use at the same time must be related to the permitted speed (Trivector, 2020). The allowed speed should preferably be lower than 30 km/h to minimise the types of accidents that cyclists, above all, run the risk of having (ibid.). Signs and road signage are also essential to increase cyclists’ safety in relation to other vehicles (ibid.).

In an equal way, when it comes to bicycle lanes integrated in the pavement space, the width of the lanes and the pavement must be related to the intensity of traffic involving cyclists and pedestrian users alike (ibid.). The minimum width for pedestrian usage needs to be between 1,8-2,0 metres for both one- and bidirectional traffic (ibid.). The bicycle lanes must span from 1,6-2,5 metres or wider for one and bidirectional traffic (ibid.). It is vital that the lanes are marked with road signage (ibid.).
The logical next step in the design of bicycle lanes in Malmö would be to visualize the respectful cohabitation between different users who are active in the street environment. A national comparative study on design principles used in Gothenburg, Malmö and Stockholm would shed some more light on design solutions that would promote more safe and secure design solutions for all users of the streetscape, not only a designated group of users like cyclists. The authors conclude:

The ideal would be that Malmö is both a bicycle friendly and a pedestrian friendly, simply a bikeable and walkable city for all. For us, this would reflect a universal design approach for the cohabitation between different users of the street environment (United Nations, 2008). Adopting such a universal design thinking approach could inspire a local pop song about Malmö, paraphrasing the French song (Pias Recordings France, 2011):

Piétons de tout âge et corps, Malmö vous aime !

Venons tous à notre ville d’une conception universelle, Malmö vous aime !

Piétons, vous serez en sécurité dans nos rues, Malmö vous aime !

Pedestrians of all ages and shapes, Malmö really likes you!

Come to our universally designed city, Malmö really likes you!

Pedestrians, you are very safe on our pavements, Malmö really likes you!
Figure 6. The Nordskiöldsgatan with one of three similar entrances to the Niagara building to the left and the blue Orkanen Building to the far right. The projecting concrete fundament with wooden seating allows for students to use the pedestrian zone to ambulate in front of the building.
Figure 7. The pedestrian crossing at the Nordenskiöldsgatan is completely inaccessible and unusable for most pedestrians: the zone for accessing the pavement from the roadway and going to the pedestrian zone is too narrow and there is an evident risk of colliding with a bicyclist. To the right, the access zone is somewhat broader with a narrower bicycle lane. On neither side of the roadway, the pavements allow for installing a ramp with the recommend-ed gradient of 1:20 or even 1:12 since this would results in ramp lengths of 1,2-2 metres.

References


Biographies

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