

ACCESSIBLE ENVIRONMENT 8

TEMPORARY TRAFFIC ARRANGEMENTS

Other instructions

“Esteettömyys tilapäisissä liikennejärjestelyissä” (“Accessibility during Temporary Traffic Arrangements”). A polytechnic thesis by Anni Juutilainen. The Helsinki for All Project “Tilapäiset liikennejärjestelyt katualueella” (“Temporary Traffic Arrangements in Street Areas”). A publication of SKTY (The Finnish Association of Municipal Engineering); “Tilapäiset liikennejärjestelyt Helsingissä” (Temporary Traffic Arrangements in Helsinki). City of Helsinki Public Works Department Excavations and temporary traffic arrangements in Helsinki

Ulkotilojen esteettömyyden kartoitus- ja arviointipäätös (An Evaluation Guide for Accessibility in Outdoor Areas). The Helsinki for All Project

Instructions of the Finnish Association of People with Mobility Disabilities: www.esteeton.fi

SuRaKu Instruction Cards

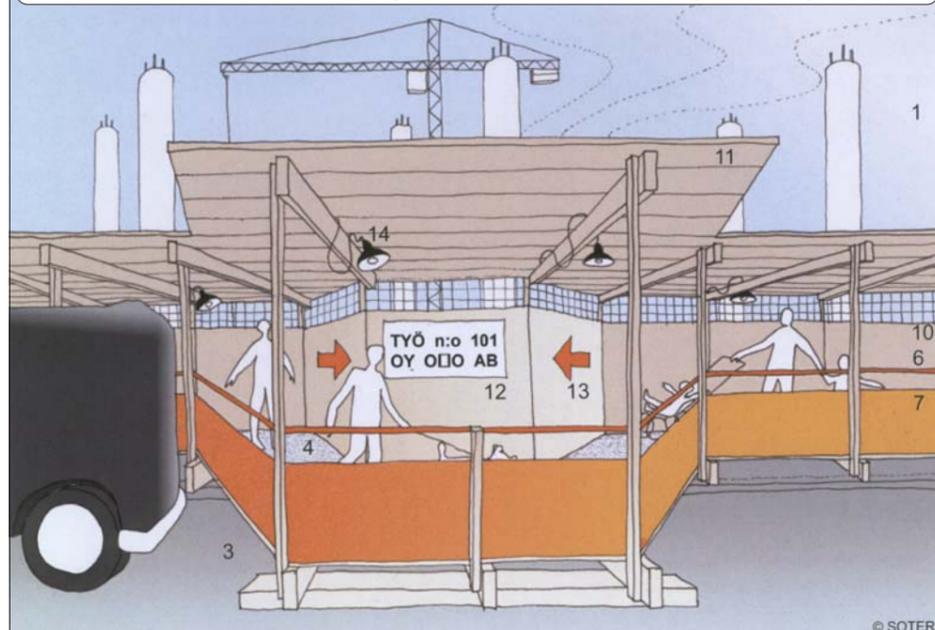
- 1 Pedestrian crossings and pavements
- 2 Pedestrian street milieus and squares
- 3 Differences in elevation
- 4 Public courtyards
- 5 Park paths and resting places
- 6 Public playgrounds
- 7 Public bus stop areas
- 8 Temporary traffic arrangements

SuRaKu Accessibility Criteria Tables

Kerbstones at pedestrian crossings, Outdoor staircases, Ramps, Guidance paving flags, Demarcation strips, Loading islands, Gutters and gullies, Walking surfaces, Pedestrian crossing markings, Handrails, Railings, Push-button poles, Pedestrian crossing signs, Seating, Bollards, Pedestrian refuge islands, Tactile maps and information signboards, Warning areas. For SuRaKu Instruction Cards and Accessibility Criteria in PDF format, see www.hel.fi/helsinki/kaikille/



Figures 6 and 7
 1) Temporary footpath, 2) Temporary footbridge, 3) Worksite, 4) Temporary footpath, partly ramped, 5) Temporary footbridge, 6) Handrails, 7) Railings, 8) Railing and fence posts, 9) Protective fence/barrier, 10) Protective screen wall, 11) Protective roof, 12) Information panel, 13) Signs, 14) Lamps, 15) Warning/flasher lights



Figures 6 and 7. Examples of arrangements for unobstructed traffic at a worksite.

Information

Information on building sites in Helsinki can be found on the Public Works Department website at www.hkr.hel.fi. The information concerns large-scale work causing exceptional disruption to road and pedestrian traffic. Information will also appear in newspapers.

Information covering temporary traffic arrangements should mention whether the pedestrian footpath has been directed to the pedestrian/cycle path on the opposite side of the road or whether a dedicated route for pedestrians has been marked on the traffic lane. This will be of particular help to persons with impaired vision who normally experience difficulty in locating temporary crossings, and to cyclists so routes can be prepared which avoid unnecessary crossing of roads. Obstacles on alternative routes, for example, steps or notably steep slopes, should also be mentioned.

Construction licence application

As a rule, the applicant attaches to their application a drawing of the planned temporary traffic arrangements. In cases requiring relatively minor arrangements a written summary is sufficient, because model drawings are available at the Service Office of the Street and Park Department. Adequate planning for worksite traffic routes and for workers' parking areas is absolutely necessary to prevent incorrectly parked vehicles from blocking traffic to and from an otherwise accessible worksite.

First steps in launching a worksite

From the viewpoint of accessibility, the first priority is directing traffic. Protective barriers have to be in place as soon as any machinery or materials have arrived at the site (Figure 2). Pedestrians must not at any point be forced to pass the worksite using the carriageway. If the worksite is in a parking area, parking spaces for persons with a disability must be made available.

Protective barriers at a worksite must serve all user groups. When temporary traffic arrangements are in place, persons who are partially sighted, wheelchair users and elderly people must be able to move about freely. If the barriers direct pedestrian traffic to the opposite side of the carriageway, they must be placed exactly at the pedestrian crossing so that persons who are partially sighted are able to align themselves properly in relation to the crossing (Figure 5).

Work in progress

While work is in progress at the site, it is essential that traffic arrangements be kept up-to-the-minute at all times. All worksite materials and machines must be kept inside the protective fences to avoid causing a risk of collision to persons who are partially sighted or causing an obstruction to wheelchair users. Proper protection for lorries is a special priority, because the loading platforms of lorries are so high up that persons who are partially sighted using a cane could easily walk into them and hurt themselves.

Closing phase

Protective barriers are to be used during the closing phase as well. To avoid misunderstandings, worksite safety should be kept at the same level as before. A protective rope must not be used at any time to direct pedestrian and cycle traffic, regardless of whether or not there are excavations at the worksite, because persons who are partially sighted will not notice it.

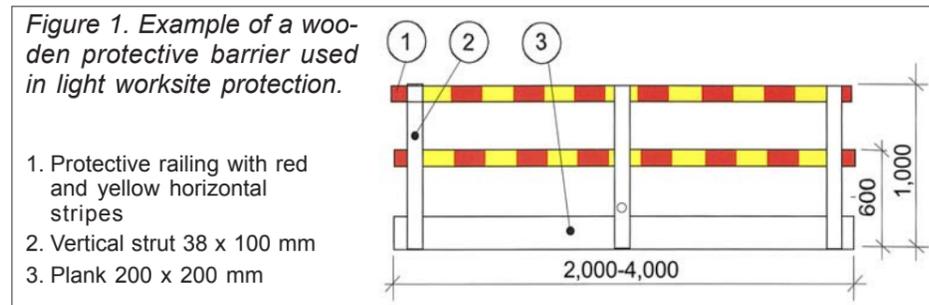


Figure 1. Example of a wooden protective barrier used in light worksite protection.

1. Protective railing with red and yellow horizontal stripes
2. Vertical strut 38 x 100 mm
3. Plank 200 x 200 mm

SuRaKu Cards contain guidelines for planning, construction and maintenance of accessible, public outdoor areas.

The model designs outlined in the cards are examples of designs for an accessible environment. However, further advances in the quality of the environment and accessibility can be achieved by continued product and design development.

The instructions and specifications in the cards are based on the accessibility criteria established for the SuRaKu Project, and on the model designs.

Two levels of accessibility have been defined for the areas in question. The requirements for the basic level of accessibility apply to all areas. More stringent requirements for the special level of accessibility apply to the following areas:

- Pedestrian street milieus
- City centre areas with public facilities and services
- Areas surrounding institutions providing health care and services for the elderly and persons with a disability
- Areas with a lot of housing targeted at the elderly and persons with a disability
- Public transport terminals and areas surrounding public bus stops
- Sports areas and playgrounds catering to all types of users
- Accessible routes in recreational areas, etc.

The same principles apply to temporary traffic arrangements for both basic and special levels of accessibility.

Classification of excavations

- Brief excavation ≤ 24 hrs; long-term excavation > 24 hrs
- Shallow excavation ≤ 0.7 m; deep excavation > 0.7 m

Light-duty protection:

- Speed limit ≤ 60 km/h; job is completed in less than 24 hours
- Speed limit ≤ 50 km/h; job extends over 24 hours; no deep excavations at the site
- Speed limit ≤ 40 km/h; job extends over 24 hours; possibility of deep excavations at the site
- Protection between the worksite and cycle and pedestrian traffic

Protective fences, barriers or posts provide sufficient safety if:

- The job is completed in less than 24 hours and there are no deep excavations at the site
- The standing speed limit on the street is 40 km/h or under, the job extends over 24 hours and there are no excavations at the site
- Protection is needed from truck cranes, for transport platforms or for closing off a reserved parking area, etc.



Safety and protection at a worksite

Regardless of the location or size of the worksite, or duration of the project, worksite safety must be maintained at a high level at all times. In areas of low traffic density, the protective barrier should be fastened to a plank or a bar of some other durable material (Figure 1). A continuous, unbroken barrier defines the worksite more clearly, provides better optical direction, and is easy to follow for persons who are partially sighted using canes. For long-term worksites in areas of high traffic density, bars of concrete, iron, or some other corresponding material are recommended.

Pedestrian footpaths, cycle paths and walking surfaces

The minimum width of pedestrian footpaths and cycle paths is 1.5 m, and the minimum clear height 2.2 m. The minimum width of temporary bridges as well as that of ramps is 1.2 m. If the path with railings is long (c. 15 m), a wider passing place (1.8 m) must be provided. The surface must be maintained properly and remain free from potholes. To be accessible with a manual wheelchair, the maximum allowable lateral inclination of the path or ramp is 2%, and the maximum allowable longitudinal inclination is 8% (Figure 4). No obstructions likely to cause a risk of collision, falling or tripping are acceptable on the path.

The surface of the path must be hard, and it must not be slippery even in rainy conditions or in temperatures below freezing. For the duration of long-term projects, previously paved paths must be temporarily repaved. In short-term projects, temporary stretches of pedestrian footpaths and cycle paths are to be paved or compacted to make them wheelchair- and pram-accessible. When ramps and bridges are surfaced with film-coated plywood, the non-slip carpeting must be securely attached to avoid the risk of tripping. Other alternative safety measures are roughening of the plywood surface or spreading of a compacted layer of crushed stone fines. Where the path is too narrow for city street maintenance machinery, the responsibility for snow removal and non-slip treatment, mostly gritting, falls on the worksite.

To sustain the weight of heavy electric wheelchairs, ramps must be able to withstand 250 kg. In the absence of a wall or other solid barrier to prevent wheelchairs and prams from slipping over the edge, the ramp should have a safety edge (min. height 50 mm). The surface of the ramp must be roughened.

Figure 2. Protection of worksite machinery must not force pedestrians to use the carriageway.



Figure 3. Worksite signs or their mounting posts/bases must not cause a risk of collision, falling or tripping.

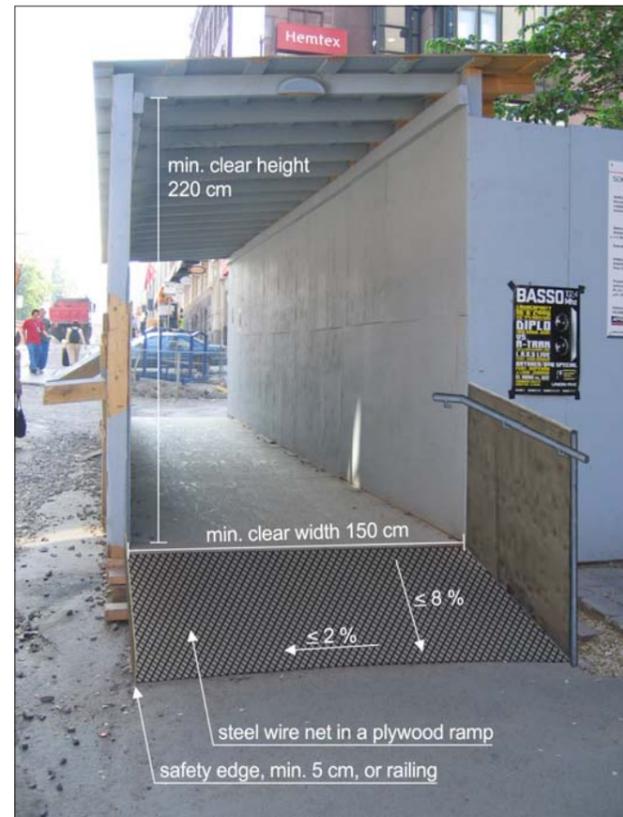
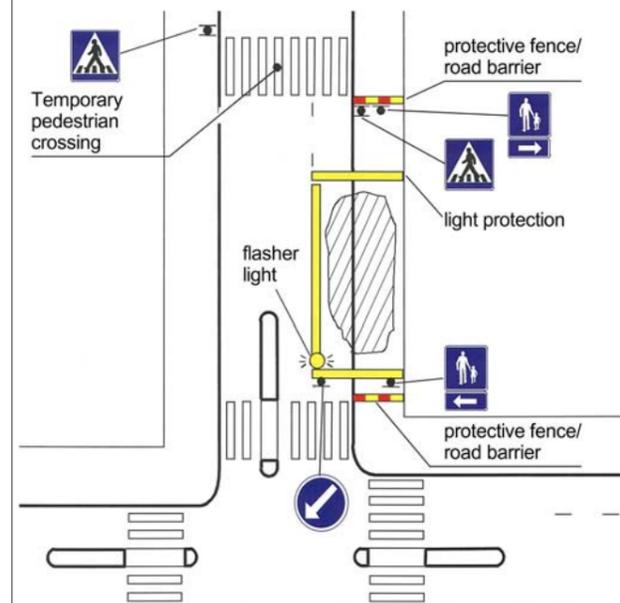


Figure 4. A temporary covered pedestrian footpath and ramp. The low wall on the right keeps pedestrians and other users from straying onto the carriageway. The steel wire net covering the plywood ramp is especially usable in wintertime conditions.

Figure 5. The protective fence/road barrier must be placed exactly at the pedestrian crossing so that persons who are partially sighted cannot miss the crossing. Signs should be mounted at a height of 1.4–1.6 m.



Pedestrians and cyclists are directed to cross the road using the nearest pedestrian crossings. A temporary crossing is needed if the nearest one is at an inconvenient distance and the worksite is a long-term one. The warning sign "Pedestrian Crossing Ahead" is used where necessary.

Handrails and railings

Handrails are installed at a height of 0.9 m on both sides of the ramp. Handrails should be continuous and unbroken. Handrails should extend at least 0.3 m past both ends of the ramp. The handrail is installed at a minimum distance of 45 mm from the wall, and its diameter should be 30–40 mm for a firm grip. To permit free movement of hands along the handrail surface, the handrail should be attached from below.

The height of the railing is determined by the difference in elevation. A railing is necessary when the difference in elevation is over 0.5 m, and in that case the height of the railing should be 0.9–1.1 m. A railing is necessary in the presence of even smaller differences in elevation, if there is a distinct risk of tripping or falling for persons who are partially sighted, etc. The railing should also have a low second rail at a height of no more than 0.1 m from the path surface. If the difference in elevation exceeds 0.7 m, protection from a fall must be provided in the railing. No sharp edges or components causing a risk of collision or entanglement are allowed in railings or handrails.

Protective barriers and netting

Protective barriers should always have a low second rail close to the ground for the benefit of persons who are partially sighted with canes. The low rail also prevents the wheels of wheelchairs and prams from slipping outside the barrier. The lower rail should be at a height of 0.1 m and the upper rail at a height of 0.9 m from the path surface. The barriers form a continuous, unbroken fence around the worksite and help prevent falls, accidental straying onto the site and taking a shortcut across the site.

It is recommended that during the closing phase, instead of separate concrete blocks, the protective netting be attached to a continuous rail for guidance and prevention of tripping. Protective barriers and walls should lead clearly away from the carriageway and be sufficiently long.

Signs and information boards

To avoid visual obstruction or danger of collision, signs and information boards should be mounted by the side of the path (e.g. on the wall or fence surrounding the worksite) (Figure 3). To be readily noticeable, signs should be mounted at eye level (1.4–1.6 m). The minimum clear height under a sign mounted above the path should be 2.2 m. In temporary signs, the letters, digits and symbols should be black on a yellow background. The typeface size on worksite signboards should be 30–45 mm, if access to the signboard is unobstructed; 80–100 mm, if the signboard is seen from a distance of 1–3 metres.