

A universally designed transport system – best practise for better knowledge

First Ida Stenbråten Harildstad^{a,1}
^a*Norwegian Public Roads Administration (NRPA)*

Abstract. Universal design is a democratic question incorporated in legislations, standards and guidelines. But universal design is also a tool for walkable and attractive pedestrian areas where active and sustainable modes of transport is prioritized. This paper present a project called “Good examples of universal design” that promotes transport facilities that is built with universal design, that emphasizes universal design as one of any aspects that’s need to be fulfilled to make the transport system attractive and accessible. This paper presents both how the project was carried out, the results and what best practice is.

Keywords. Universal design, sustainability, walkability, National walking strategy, strategy for better architecture, learn from best practice, competence, promoting build transport facilities

1. Introduction

A universally designed transport system is one of four main goals in Norwegian transportation politics. The Norwegian Anti-Discrimination and Accessibility Act of 2009 states that is prohibited to discriminate against any person based on disability.

The Norwegian Public Road Administration (NPRA) continuously builds transport facilities that are functional and usable for as many people as possible. There are developed quite specific design guidelines of how to plan different parts of the transport system, such as for example bus stops, pedestrian crossings, pavements and stairs. These guidelines are either set as absolutely requirements (such as curb ramps, gradient and widths) or recommended requirements (such as surfaces, contrasts and distances).

But universal design is not only about important details like curbs and tactile warnings, elements that easily can be embodied in guidelines. Universal design it is also about making a transport system that is logic and easy to read, witch prioritizes people and walkability, and makes it possible and attractive to choose active and sustainable modes of transport.

NPRA therefor emphasise the importance of considering a commitment to universal design together with other important commitments, such as the Norwegian national walking strategy (NRPA 2012), NPRAs own strategy for architecture (NRPA 2012), road safety and requirements for operation and maintenance.

¹ Corresponding author, ida.harildstad@vegvesen.no

The goal for universal design in the Norwegian National Transport Plan for the years 2014-2013 is *whole travel chains with universal design*. To reach this goal we need to demonstrate that different transport facilities must be connected to each other, and to its surroundings. Small gaps in a travel chain can be a huge challenge for many. Universal design is, amongst other commitments, an important instrument to reduce barriers and to achieve an attractive transport system that facilitates active and sustainable modes of transport for as many as possible.

2. Good examples on universal design

One important priority in reaching national ambitions for universal design is to increase the competence on why and how to build a universally designed transport system. The project presented in this paper, called “Good examples on universal design” is a project that aims to highlight such transport facilities, that has achieved accessible and attractive quality through a various use of instruments.

The project started with two goals in mind: firstly to *show* our own organisation, as well as others, some of the accessible transport facilities that we build every year. Secondly it has been very important to get added value in terms of *learning* from others successful results.

We highlight and present transport facilities that look aesthetically good, works well in terms of functional requirements, and also fulfil technical requirements according to our standards and guidelines.

All elements in a travel chain are of interest, evaluated separately or together in the context of a larger project. Different pedestrian and bicycle facilities, pedestrian crossings, bus stops, terminals, parks and urban areas, viewpoints, bridges, accessible tunnels and ferries are all parts of people’s everyday travel – and therefor object of interest in this project.

We started this project in 2011, by developing a methodology for inspection, evaluating and presentation. The first five examples were inspected, evaluated and presented in a pilot project in NPRAs southern region in 2012. In 2013 the project was expanded to involve about 20 new transport facilities from all parts of Norway. We plan to expand the collection of examples each year, and step by step establish a broad base where one can find inspiration and learn from others experiences.

3. An interdisciplinary approach

Selections of transport facilities is done by regional coordinators for universal design employed in NRPA, and the quality on the chosen facilities are assured by an interdisciplinary group. We use a tree step method, where different parameters are being evaluated:

1: A good designed pedestrian transport facility has to be universally designed in terms of technical requirements; here we use technical check lists already developed in *Universal design of roads and streets* (Handbook 278, 2011).

2: An accessible transport facility should also look attractive, and invite you to use it. A conscious use of aesthetically solutions and how the facilities is planned, build and maintained in connection with its surroundings is therefor also important to consider. Walkable transport facilities should protect the walker from other traffic and make you feel safe when being there, as well as focusing in options for maintenance thought the year. In addition to an assessment of how the technical specifications are followed in regard to universal design, the following criteria are important to make the overall quality evaluation:

- Context and relationship to the surroundings
- Logic and orientation
- Interaction between different modes of transport
- Road safety and perceived safety
- Travel experience
- Use of materials
- Operation and maintenance
- Architectural quality

3: We also question the project leaders behind these facilities about when the principles of universal design was taken into consideration in the planning process, which disciplines that attended in the process and which user groups that has been invited to participate.

The inspections and evaluations are carried out by interdisciplinary groups, represented by personnel working with for example planning, architecture, engineering, building, operation and maintenance.

The material are summarised and published at NPRAs website (www.vegvesen.no) and in a yearly brochure. Target groups are those who plan, build and maintain transport facilities.

4. Results

Here I present some few examples of the facilities presented. The oral presentation will present and describe a few examples from different parts of the travel chain.



Waterfront promenade, Oslo. Wide promenade where people can both stop and stay, while others can pass. The facility is well lit, has zoning and have a material is good to walk and roll on.



Strandgata, Hamar. It city street is now bright and appealing with wide sidewalks, clear zoning and accessible entrance at the shops and cafes. The green area between a road and railway is preserved with walkways, places to rest, good lighting and planting.



Trollåsen, close to Oslo. An attractive facility for pedestrians, cyclists and public transport. Separate solution helps improve accessibility for pedestrians and cyclists.



Kvivsvegen, in western Norway. Universally designed bus stop. Step-free access and excellent visual and tactile contrasts. Bench with armrest.



Bus stop, Trondheim. The stop is designed so the bus can stop close to the platform. High platform and buses with low floor allows for step free entry and exit.



View point at Ljøen, western Norway. From the viewpoint there are stunning views. The place invites you to stay. Some of the benches should have backs and armrests.

5. Why promote best practise?

NPRA, and others working in the field of transport, are working systematic with building new, and upgrading old, infrastructure to universal standard. This task takes time, is complex and there are still need for increased expertise on this field.

The mail goal with this project is to encourage, inspire and teach those who work with planning, building and maintaining transport facilities, about already build solutions in the transport system that are useful for as many as possible – and at the same time being functional and aesthetically nice with more qualities than “just” universal design. Universal design is still a field where many still need more competence on what best practise is.

Few examples are perfect in every way, but we emphasize the good, instead of just highlighting flaws and the unsuccessful solutions. All potential for improvement is off course also considered in the evaluations, but “best practise-solutions” are still presented as most important.

In my presentation of this project I will emphasize that both the process, where interdisciplinary groups evaluate transport facilities – and the presentation and communication – are important results. I will focus on that universal design are one of many instruments that are important to reach goals for more active and sustainable transport for all; that universal design must be sought with both technical, functional and aesthetic quality; how this project has led to ownership and interdisciplinary involvement from all persons involved, and how best practise can help us to reach goals for a universally designed transport system.

References

The projects website:

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National walking strategy (2012)

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NPRAs architectural strategy (2012)

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Handbook 278 *Universal design of roads and streets*:

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