

## PROJECTS-Testing

### General description:

Colleagues of Universal Design Information and Research Center(ETIKK) participated in projects as disabled experts. Testing covers several types and levels of disabilities and also represent non disabled members of the society. Our colleagues represent experts with several types of disabilities such as; visual,hearing,and physical disability(manual,power wheelchair and scooter users and people with autistic spectrum disorder.

We always make an on -site visit together with customers in order to see and talk over emerging problems in details.

It can be followed by an expert opinion completed with plans providing solutions to the emerging problems.

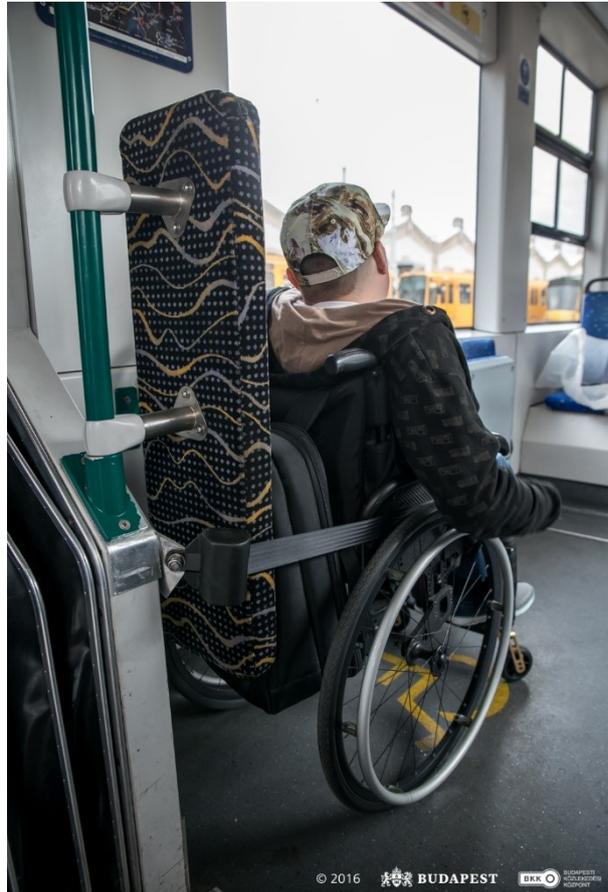
At customers' request Universal Design Information and Research Center suggests professionals,but the construction itself is not included in our profile.

### Vehicle's testing

Universal Design Information and Research Center has been testing the fleet of Budapest Transport Company and Budapest Transport Center for a long time in close cooperation.

#### **Tram 'Combino' Seatbelt testing:**

Disabled experts continuously give feedback on newly acquired vehicles and vehicles that are already in service from accessibility point of view.



**Figure 1-** Seatbelt test with disabled experts who use different kind of medical aids(BKK photo)

### Device testing

#### **Tobii Dynavox test:**

The Office of the Commissioner for Fundamental Rights contacted Universal Design Information and Research Center to assist in the investigation of a complaint. The office requested us to send an opinion on that device.

In order to achieve this our center looked for and tested with different subjects to make as wide examination as possible. We asked for conducive support in examinations, device use and communication with the participants.

Individuals participated in testing live with several kind of disabilities and different ages caused damage of central nervous system and other reasons such as individuals who need full support in communication. All of them used eye controlled Tobii Dynavox PCEye device.

The eye-controlled device can be positioned in any position with the help of a stand so that its users can use it in any posture (lying, sitting, standing).

This feature was important and necessary during the testing procedure because it took place in different positions, postures, and places such as; wheelchair,bed,hospital,office,home.



**Figure 2.- Eye-controlled device test in specific circumstances with conductive support Source: Universal Design Information and Research Center 2017.**

#### **'Segway' test-cooperation with companies and institutions caring children with disabilities**

Segway Ltd contacted Universal Design Information and Research Center with a newly developed electrical device. There are such companies in Europe and in America which have been developed such a converter that make Segway type vehicles wheelchairs with higher mobility.

A special program took place on 26 October 2017 in the building of the Elementary School, Vocational Secondary School, Unified Institute for Special Pedagogical Methodology Center and Dormitory for students with special educational needs at Mexikói út. Some students and the staff of Universal Design Information and Research Center were able to test the tools a seated version called Blumilt and a Segway provided by two of Segway's employees.

The test confirmed that both devices can improve and make faster the mobility of people with physical disabilities. In battery-powered devices an in built gyroscope adjusts the vehicle's balance hundreds of times per second to prevent it from tipping over.



**Figure 3. Device testing with users with special needs- at school at Mexikói road, Source: ETIKK**

Testing procedure participated children, teenager, and adults. Basically we can say that proper trunk control and sense of balance are required to operate the device as the upper body must be moved forward and backward. Since a power wheelchair is not really made for off-road use examination has shown that the development provide an alternative way of transport (e.g. excursion, or more difficult off-road sightseeing).