



# Necessary for some, good for everyone

Best practices of universal design in Norwegian municipalities and counties



# Good communities for all

Universal design involves creating healthy, inclusive communities where everyone can participate.

In this booklet we present some of the exciting and innovative measures that have been implemented by Norwegian municipalities and counties to provide better access for all to public spaces, meeting places and buildings. By learning from each other, we can create better and more inclusive communities for all.

During the last four years, The Norwegian Association of Local and Regional Authorities (KS) has facilitated a network for municipalities and counties on universal design and how to make changes that are not necessarily difficult, nor costly to implement. This municipal network will be continued.

The National Board of KS has adopted a long-term plan for the period 2016-2019:

These are our overall goals:

- Inclusive government
- Healthy municipal economy
- Attractive employers
- Sustainable health and welfare services
- Inclusive upbringing
- Viable regions, cities and districts

Working in a municipality or county authority – either as an employee or as an elected official – first and foremost involves working for a community that includes everyone.

Let's create good communities together!



Gunn Marit Helgesen  
Chairman of KS



**Chief Editors:** Christian Hellevang og Anne Gamme, KS. **Development and Production:** Marianne Alfsen, Felix Media. **Journalists:** Marianne Alfsen and Lena Stovrand, Felix Media. **Translation:** Silje Berggrav, Felix Media **Photographer:** Fredrik Naumann, Felix Features. **Graphic Design:** Anette Kirkeby, Bly. **Print:** Byråservice. **Published:** 2018 **ISBN:** 978-82-93100-29-4





## Busting myths for a change

"The solution busts (...) the myth that universal design is necessarily costly or technically complicated," writes the jury in their decision to award the change room facilities at Solvik Camping in Oslo with the DOGA Innovation Award for Universal Design 2017 (architecture category).

"Good solutions do not depend on size or budget. Normative solutions may also develop in small projects and have a great impact on larger scale projects. Solvik is an example of a low-tech solution with transfer value," the jury added. It pointed out that with an increasing proportion of elderly people in the population, change rooms in public bathing areas and outdoor facilities have become a challenge.

Solvik Camping is located in scenic surroundings on Malmøya, a stone's throw from Oslo's city centre. Disabled people can apply for keeping a caravan and the area is open to anyone for a day trip. In 2010, the City of Oslo constructed a universally designed swimming pier, but the shower and toilet facilities were out-dated and inaccessible. In 2016, a new building containing change rooms and sanitary facilities was constructed from timber, with a superstructure between them. This ensured good sight lines both to the fjord and the protected trees, and made the building less dominant in the natural landscape.



**BETTER FOR ALL:** "It is apparent that universal design can be used as a solution that is both inclusive and better for all," writes the jury that gave Solvik Camping the innovation award. (Photos: Damian Heinisch/Flux Architects)



# Everyone to the top

The Stovner Tower in Oslo is proof that the ideal of a society where everyone can participate at the same level can inspire spectacular architecture that provides adventure and qualities for the whole population.

It all began with a big hairy idea, enthusiasts with a plan – and a municipality that cares about universal design through and through.

“You must believe in the impossible,” says Truls Korsæth, project manager in the Agency for Urban Environment in the Municipality of Oslo.

The idea of The Stovner Tower came from the spectacular walkway that is built in the treetops of a national park in the German federal state of Bavaria.

“The idea there is to preserve nature while allowing people to move through it and get a completely different experience of the forest and trees,” says Korsæth.

Scepticism was quickly turned into enthusiasm as both politicians and planners began to take in what The Stovner Tower could mean for The Grorud Valley Integrated Urban Regeneration Project. This collaboration between the Municipality of Oslo and the national government is an environmental and living condition intervention that will create lasting qualities for communities in a suburb characterised by urban challenges.

“The response was unanimously positive,” says Korsæth.

## TO THE TOP ON WHEELS

Today, The Stovner Tower is a natural part of the network of walking trails around the Stovner shopping centre, making up the heart of the universally designed activity park, Jesperudjordet.

“It was important for us to create park facilities that are adapted to all user groups: young and old, able-bodied as well as the disabled,” says Korsæth.

The jewel of the crown is a 260 metre long walkway, spiralling up over the treetops, with a gradient that allows visitors who are dependent on a wheelchair or walker, or bringing a child in a pram, to get to the top on their own accord. Along the way are resting areas and benches.

Rails and lighting provide safety and security for all, day and night, forming natural orientation lines and clear contrasts. At the top awaits views in all four directions.

## STEPLESS TOWER

“Everyone thinks of a tower as something to climb or access by lift. It was fun to create a tower where the walkway slinks up towards the sky in one single long movement, inspired by a bird in flight,” says Korsæth.

“Most people will associate ramps with wheelchair users. This is also a ramp, but it is a long and amazing ramp that can be used by everyone. I think this is a fantastic and impressive construction,” says Cato Lie, Policy Advisor for Universal Design in The Norwegian Federation of Organisations of Disabled People (FFO).

Project Manager Korsæth believes the best thing about the tower is that it gives everyone the opportunity to see the tops of the trees, not just experience the scenery from the ground, and the view that extends far beyond the Oslo Fjord.

“When you get an idea like The Stovner Tower, which initially seems a little wild and crazy, you shouldn’t let it go. You should have the guts to implement it. Most constructions can be universally designed, and the design does not have to suffer,” says Korsæth.

“Symbolic projects like these are important. They get attention and demonstrate that universal design can be beautiful,” adds Cato Lie.

Korsæth agrees:

“We must make sure that universal design not only manifests itself in flat and unobtrusive projects. You can create so many exciting projects if you just wrack your brain a bit and include the users from the idea stage onwards. Automatically you will design a better building for everyone.”





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«We must make sure that universal design not only manifests itself in flat and unobtrusive projects»

Truls Korsæth  
The Agency for Urban Environment



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URBAN REGENERATION: 1) Cato Lie grins on his way down, having been able to enjoy the view of the Grorud Valley – by his own accord. 2) The Stovner Tower is located between Stovner's characteristic suburban high-rises. 3 and 4) There is a lot of traffic up and down the tower, which has become a popular outing destination. Fourth graders from Stovner School rush towards the top with delighted squeals. (Photos: Fredrik Naumann/Felix Features)

«Universal design involves not only following the norms,  
but finding solutions along the way»

Marcus Zweiniger  
Landscape architect, the Municipality of Bodø



## Norway's most attractive city

Extensive urban development, guided by the principle of inclusion,  
awarded Bodø as Norway's most attractive city in 2016.

The air is vibrating in the streets of Bodø. A lot is happening in the city that grows faster than most.

"Bodø sees opportunities where others see limitations," said Jan Tore Sanner, Minister for Local Government and Modernisation, to the Norwegian Broadcasting Corporation in June 2016 when he handed out the national prize for sustainable urban and local development.

It did not start so well. In 2011, the Norwegian parliament decided to close down the main military air base in Bodø. Workplaces as well as parts of the city's identity disappeared. But the people of Bodø brushed off their disappointment and embarked on an ambitious project: New Airport, New City. The air base located in walking distance to the city centre, would become a new suburb, and a new airport would be built further south.

### INCLUSIVE CITY

It didn't stop at that: Over the last two years, the entire city centre has experienced a facelift. It is more than just cosmetic.

"We wish to create a city where everyone can participate," says Marcus Zweiniger, landscape architect in the Technical Department of the municipality. He has a habit of knocking on the door of anyone who is part of developing the new Bodø. And he is well received.

"The principle of universal design is the basis for everything we do. We are reviewing our efforts at all levels," says Zweiniger, adding:

"Enthusiasm for universal design is not something you can delegate. Therefore, it is important to include everyone who has a passion for this. We have many enthusiasts in Bodø."

### SMART SOLUTIONS

It began with the cultural powerhouse Stormen (The Storm), completed in 2014. A library and a cultural centre in the heart of the city. The new, universally designed, magnificent buildings brought with them a new outdoor space that

eventually sprawled down Storgata and up to the covered shopping street Glasshuset (The Glasshouse). From there, it stretches out reaching ever new city streets.

"The cultural centre became an eye opener for those of us who work with the city's outdoor spaces," says Zweiniger. The upgraded quayside, city square and surrounding streets have received a new granite coating with a slip-resistant surface and textures that require low force to traverse. Street lighting, furnishings and trees reinforce the zoning sections.

Earlier, the sidewalks in Storgata were narrow, the bricks were run down, and the street had been repeatedly tar-macked to the point where barely any thresholds were left. Today, it is a clearly defined pedestrian street. Dark cast iron indicator and warning slates that are resistant to snow plows are used as artificial orientation lines where needed.

"The contrast to the light granite slates could not be better," Zweiniger says.

### ANNIVERSARY GIFT

The universally designed harbour promenade was a gift to the citizens as a celebration of the city's 200th anniversary in 2016. Lined with a sitting wall and plastered with stone, it winds towards the cultural centre.

The challenge is that parts of the promenade run along an operative harbour.

Weight restrictions were solved with a thin tarmac layer on this part. Here the municipality also had to find a functional marking of the pedestrian zone. They chose an elevated, permanent yellow marking, which matches the ships' bright yellow moorings.

"Universal design involves not only following the norms, but finding solutions along the way," says Zweiniger, adding:

"To me, universal design is about so much more than removing barriers. Inclusion is the essence, and the goal is a friendlier society for all."





UNIVERSAL FACELIFT: 1) "Now that we have an accessible pedestrian street from the upper part of the city centre and down to the harbour area, it has become so much easier to move around the city," says Ståle Normann, former leader of the Norwegian Association of Disabled (Bodø). 2) This store in Storgata provides step-free access. The City Centre Project is reviewing the status of universal access to other city stores. 3) These cast iron orientation lines can withstand the weight of snow trucks during winter. 4) Bodø has come a long way in eliminating barriers, steps and thresholds that prevent access by wheels. (Photos: Per-Inge Johnsen/The Municipality of Bodø)



# The serpent that could swallow all

In Norse mythology, the Midgard Serpent was a terrible sea creature, caught by the god Thor. It meant the end of both of them. Today, the serpent is wriggling again, in the form of a footbridge over the Frøyland Lake.

"The Midgard Serpent is an example of combining ambitious architecture and sense of aesthetics with universal design," says Anne Reidun Garpestad, who was the project manager when Time was a pilot municipality for universal design from 2005 to 2013. She still serves as a universal design consultant.

Bryne Residents' Association undertook the initiative for the Midgard Serpent, which connects important hiking trails in Time and Klepp municipalities in Jæren. Surrounding Frøyland Lake is a 16 kilometre long hiking trail. The bridge has made the hiking area more accessible to those who prefer shorter walks. In addition, the spectacular design of the bridge, designed by Asplan Viak in Stavanger, has become a destination in itself.

## AESTHETICS MATTER

"Aesthetics mean a lot to us," says Olav Hetland, leader of the Bryne Residents' Association in Time. The association worked hard for 10 years to realise the project, which was launched by a public festival in 2016.

Attempts to plan a bridge stalled in the 1980s. Back then the idea was only to provide a functional access from A to B. When the Bryne Residents' Association put great architectural visions on the table, they managed to stir up the interest that was lacking in the previous round.

Each Norwegian Krone collected by the Bryne Residents' Association from private funders was matched by Jæren Savings Bank, which was established in 2015 when Time Savings Bank and Klepp Savings Bank merged. Financial support became an important symbolic act, as the bridge physically connects the geographic range of the new bank.

"We received one million Norwegian Kroner just by selling name tags to be put on the bridge," says Hetland. In addition the project received funding from Norsk Tipping, a government-owned limited company that regulates gambling and assigns the revenues to good causes.

## GOOD TEAMWORK

An organic 230 metre long shape, covered in 33,000 metres narrow, lime pine timber planks, winds its way over the water today – almost like a twig. The Midgard Serpent is more than a convenient short cut; it has become a landmark and an attraction in itself.

Close cooperation between the Bryne Residents' Association, the architects and the municipalities, ensured that both aesthetics and universal design were safeguarded.

"Initially, this seemed like a crazy idea. Through dialogue we managed to make universal design and aesthetics work together, and create something even better than if we had just paid attention to one or the other," says Garpestad, adding:

"The Midgard Serpent really refreshes the meaning of universal design. It's not a matter of dull facilitation and adaptation. It's about creating exciting design for everyone."

## INCLUSIVE

"Here I can go for a trip with my partner, who is also a wheelchair user. In fact, we can roll side by side over the bridge. That means a lot," says Anne Marie Auestad, Deputy of the Norwegian Association of Disabled (NHF) in Nordjæren and NHF Southwest.

Access roads as well as a picnic spot have been upgraded to universal standard. The Midgard Serpent itself has stepless access, non-slip cover, a gradient in accordance with regulations, and is two metres wide. Discreet green lighting along the surface lights up the bridge, providing both security in the dark and acting as orientation lines.

Auestad rolls unobstructed from the parking lot, along the upgraded trail and onto the bridge. She appreciates this:

"I can come here for a trip with friends and family without special planning, without anything being 'facilitated' only for me. It makes me feel more included."





*«We managed to make universal design and aesthetics work together, and create something even better than if we had just paid attention to one or the other»*

Anne Reidun Garpestad  
Municipality of Time

NORSE MYTHS: The Midgard Serpent passes Lalandsholmen, where the myth says that the Viking King Olav Tryggvason was born. Anne Marie Auestad, Deputy of the Norwegian Association of Disabled (NHF) in Nordjæren and NHF Southwest is one of many who have fallen in love with the bridge. She has come with Anne Reidun Garpestad, who works with universal design in the Municipality of Time. (Photos: Fredrik Naumann/Felix Features)



# 18 municipalities, 18 walking trails for everyone

The County Authority and County Governor got the ball rolling. Today, all the municipalities in Telemark County are about to reach their goal of one universally designed walking trail in each municipality.

"The walking trails have become our local meeting places, where children on tricycles can join senior citizens with walkers," says Aud Irene Kittelsen in the Municipality of Vinje, one of Telemark's smallest, with its 3,727 inhabitants.

"Without the initiative of the County Authority, we would not have seen such a strong local involvement," she says. Vinje did not stop at just one; all three towns of the municipality now have, or will have, a facilitated hiking trail.

In Edland, parts of the old county road were unused and ready to be developed to a walking trail. In Rauland, the municipality used the opportunity to construct a return trail connecting to the existing lighted trail. The next universally designed hiking trail will be developed in Åmot, stretching through the town centre, down towards the idyllic lake Ormetjønn.

"One good part of this project was having it integrated into the municipal zoning plan," says Kittelsen. This is the proof that walking trails for all have developed from being an ad hoc project to becoming an integral part of the municipality's planning.

"Our main role was to motivate and be a driving force and

adviser," says Kjersti Berg in Telemark County Authority.

"We set the criteria for selecting the tracks: that they should be close to the town centre and preferably close to schools, child care centres, senior citizen homes and businesses, to encourage physical activity in everyday life. We assisted the municipalities with mapping walking trails and gave concrete input on how to make improvements. We arranged theme days and inspections, and contributed with financial support," she says. Berg adds that one crucial element was forming alliances with local enthusiasts, who felt passionate about the idea – such as Aud Irene Kittelsen in Vinje.

"This is a good example that small resources being made available at county level can gain significant importance at a local level," concludes Berg.



**HAPPY CYCLISTS:** In Evjudalen, a park area in the middle of downtown Bø, the walking trail has been given a universal facelift: improved elevation, a more even tarmac cover, lighting, benches and meeting places. It is now easy for Tormod Hansen (waving), initiator of «Cycling at all ages» to bring people for a ride. (Photo: Lene Hennem/Telemark County Authority)





## The problem became the solution

When Åsveien School in Trondheim was pulled down to make room for a new school, a steep and challenging terrain was turned into an advantage for universal design.

The new building slides like stairs down the terrain, with step-less access to each level and with flat terrain from the parking area to the various entrances. Outside, the height differences across the schoolyard are offset by walkways. These walkways meander, forming natural lines between the old beech trees, leading to clearly marked entrances on each level. The many entry doors help create a calmer environment when the bell rings, as the students spread out. The walkways are easily accessible and facilitate orientation, with different activity zones on the horizontal stretches next to the walkway.

The outdoor facilities at Åsveien School have been designed by the landscape architectural company Løvetanna Landskap. They have now started working on a new school construction.

"We are designing Lade School based on the same principles, with a main walkway that is universally designed, giving access to playgrounds located at different levels in the terrain. Shortcuts can be used by those who can't be bothered walking the long, gradual walkway," says landscape architect Astrid Kjølén.



ROLE MODEL PROJECT: "The solutions at Åsveien School are so smart that they have inspired other schoolyard projects," says Solveig Dale, adviser on universal design in the Municipality of Trondheim.





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**LIGHT IN THE DARK:** 1) Entrance to the cultural centre in Bodø, with integrated LED lights in the stairs. 2) Handrails with integrated light, as shown in this stairway, make it easier to orientate oneself both in the library and the concert hall. 3) The light intensity is adapted to the different areas. The corridors have 200 lux, and the use of hot and cold light tones vary throughout the day. 4) The bookshelves in the library have extra strong light, and reading lights can be adjusted up to 800 lux. (Photos: Bjørnar Tønne/Byggenytt)



# Lighting the Storm

Midnight sun and dark winters have a big impact on Bodø. In the planning of the city's cultural centre, lighting was to play an important role.

After the World War II bombing, one of Bodø's best properties was turned into a parking lot. But in 2007 it was finally decided: The cultural centre Stormen (The Storm) would become a reality, built on the city's prime location, right by the harbour. Seven years later, two buildings – a library and a concert hall – opened.

"The cultural centre was to make Bodø a more attractive city, and the ambitions were very high in all areas: universal design, architecture, environment. We had a whole range of important goals," says Dagfinn Nilsen in the Municipality of Bodø. He was the project manager for the cultural centre Stormen.

## A TECHNICAL FIELD OF ITS OWN

Architectural competition is not an everyday routine in the municipality, and the goal was to build something everyone could be proud of. Collaboration between the London-based DRDH Architects, and the lighting designers Mari Gaasemyr and Marion Gardette from Norconsult, was established early on.

"One important goal was to integrate lights and signs. You often see these components being added towards the end, which can lead to random and not particularly good solutions. A project can be ruined if you do not have a comprehensive plan from the beginning. Light design is a technical field of its own," stresses Nilsen.

In the cultural centre Stormen, the use of lighting is indeed thoroughly considered. This applies to the overall design as well as light intensity, light distribution, and the use of hot and cold tones in the light. During the daytime it is colder, towards the evening it is warmer. The overall principle is to compensate for the lack of natural light. This means that the amount of light supplied is adjusted to the natural light outside.

*«A project can be ruined if you do not have a comprehensive plan from the beginning. Light design is a technical field of its own»*

Dagfinn Nilsen  
The Municipality of Bodø

## READABLE BUILDINGS

Buildings should have good readability. Smart use of light creates contrasts that make it easier to find ones bearings in the buildings. The normal direction of vision is ahead and not down. This means that the illumination of vertical surfaces also plays a part. The library and the concert hall have handrails with integrated light and appropriate brightness in the various areas: 200 lux in the corridors, 300 lux on the information boards, and reading lights that can be adjusted up to 800 lux.

The reception area has stronger lighting than the rest of the buildings. In the library the bookshelves have extra lighting, and the outside staircases have integrated, recessed lighting in the form of LED rope lights. In addition, the designers have made an effort to avoid reflection and glare.

"Universal design – including the use of light – was a topic at all our project meetings. We asked our advisers regularly to clarify how they ensured that universal design was an integral part of the project. We wanted to send a clear signal that this was very important," recalls Nilsen.

## HONOUR AND GLORY

Since the end of the project, some minor adjustments have been made, such as improving the lighting of the main entrances.

Both before and during the construction phase, Stormen was met with much scepticism and resistance. But when it was finished, the criticism subsided. The cultural centre has won a number of awards and in 2015, it was one of three nominees for Norsk Lyspris (an award handed out by the Norwegian Organizational Network within Lighting and Illumination), in the category «Best indoor project.» It did not win, but received a diploma.

Today, Stormen is a popular centre, and according to project manager Nilsen, people express a lot of love and pride for the building. But he does not believe the users really pay a lot of attention to the use of light.

"I don't believe people are fully aware of light when it works well," he says.

Large windows allow nature all the way in, both in the library and concert hall. It's a powerful view, both summer and winter.

"These windows open up to the natural light in their own unique way. No light designer can copy what nature creates outside."



MUTUAL UNDERSTANDING: 1) Tactile orientation chart for the ferry. 2) "These ferries are so easy to use. The landing is wide, and it's easy to get inside. There is plenty of space for us to sit together, and everything is at the same level," says Elisabeth Hansen, mother of Sebastian (6), who has Cerebral Palsy and uses a wheelchair. 3) "Good planning results in better boats without a significantly higher cost," says Tomas Nesheim, Technical Manager for Universal Design in Kolumbus AS. 4) The door is wide, the mirror at an appropriate height. The toilet roll is within reach and there is sufficient space. Tomas Nesheim and Operations Inspector Rune Langvik in Norled present the toilet facilities on board. (Photo: Fredrik Naumann/ Felix Features)





«It doesn't cost more than an eraser to move a line on a drawing»

Tomas Nesheim  
Technical Manager for Universal Design, Kolumbus AS

## All men aboard

High thresholds and steep landings are history. This ferry gets everyone aboard. The innovative efforts have set the standard for universal design of boats both in Norway and abroad.

Long-drawn squawks from seagulls at the Fisherman's Wharf in Stavanger. The speedboat is arriving. The landing slides down mechanically; disembarkation is efficient.

Part of the secret is the fake deck: The Norwegian Maritime Authority requires doorsteps of at least ten centimetres breadth. This can be cumbersome. A smart solution is placing a deck on top of the deck, with a slip that lets the water pass through.

"Universal design is generally not very complicated; it is often self-explanatory. You just need to make people think in a slightly different way."

This is how Tomas Nesheim summarises his work as Technical Manager for Universal Design in Kolumbus AS, the public transport company of Rogaland County. This mindset has ensured that the boats from Norled Ltd, which won the tender on Kolumbus' routes, are more accessible for the users and good business for the shipping company.

For Brødrene Aa in Hyen, the shipyard that built the boats, accessibility has also meant good business. The company has sold the same boats to Sweden, Croatia and China. This year their boat «Vision of the Fjords» won the DOGA Innovation Award for Universal Design.

### BUILDING BOATS FOR THE FUTURE

14 years earlier: A motion from the floor in the County Council proposes a county plan for universal design in Rogaland, including for public transport.

Tomas Nesheim makes an action plan for Kolumbus. Norled wins the tender on the speedboat routes in Ryfylke. Thus, the public transport company, the shipping company and the shipyard are set to develop boats for the future.

The result was, among others, the speedboat Helgøy Glimt. The landing is slip-free and longer than the required measures. Inside: Three-dimensional information boards with

standardised pictograms. Support handles are at a height of 90 centimetres, carpets mute sound, and aluminium bars provide directional information for those using a cane.

Induction loop, matt paint to avoid shine and strong reflections. Lighting points in a row across the floor area as well as different colours on the seat rows right and left all contribute to making it easier for the visually impaired.

### WORKS FOR EVERYONE

The machine that validates tickets is placed at a proper height for wheelchair users, as is the kiosk.

"I often say that what's necessary for some people is good for everyone," says Tomas Nesheim.

Earlier: Steeper, narrower landings. A cumbersome path leading to the front door. Tall doorsteps, a step down to the lounge, no disabled toilets, neither change room for babies nor space for strollers and wheelchairs. Facilities for the visually and hearing impaired were also a rarity.

### COMMON MULTIPLES

Uniting the different needs proved to be a challenge. Good light for some users could potentially be blinding to others. Blind people need four centimetre high edges, which are not helpful for wheelchair users.

"Universal design is the lowest common denominator. We will be satisfied if it is good for 80 per cent and manageable for the rest," says Nesheim.

Wheelchair safety tracks on the floor. Electric door openers for the toilets. Mirrors at a level that suits everyone. Alarm buttons 25 centimetres above the floor. Toilet roll holders that everyone can reach.

Nesheim is pleased to see how far you can come with common sense. And the cost?

"It doesn't cost more than an eraser to move a line on a drawing."

Postal address: KS  
Postboks 1378 Vika, 0114 Oslo  
Street address: Haakon VII's gt. 9, 0161 Oslo

Phone: +47 24 13 26 00

[ks@ks.no](mailto:ks@ks.no)  
[www.ks.no](http://www.ks.no)

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KS advocates the interests of the local government sector towards central government, the Parliament, labour organisations and other organisations. As of January 2018, all of Norway's 422 municipalities and 18 counties are members, as well as 500 municipal, inter-municipal and county run companies.

This booklet is inspired by the members of the KS Network for Universal Design, which was established in 2013. The goal is to contribute to an inclusive society by sharing experiences and removing barriers.