

## Aiming for Universal Design

**Karin Larsson**

Department of Culture, Malmö Public Libraries, Malmö, Sweden

E-mail address: karin.larsson2@malmo.se



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### Abstract:

*Universal Design is a perfect vision to aim for. An environment, a library, designed to meet everyone's needs. Universal Design is, and has been, explained simply as good design. The design and composition are understood, accessed, and used by everyone - not only by someone disabled. In Malmö, Sweden, there are twelve libraries spread across the municipality. Are these libraries accessible for everyone? Maybe not, but they are a work in progress. A library wherever it is located must be a welcoming place for everyone wanting to visit. It is a human right.*

*Presented in this paper is a guide written to help and inspire all staff working with accessibility at any of Malmö's libraries.*

*Does this guide alone let us reach the universal design – no, however there are many changes being made throughout our libraries and they all are striving for universal design.*

**Keywords:** Universal design, disability, guide, accessibility

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### Introduction

Universal design is the design and composition of an environment or product, but also communications, that can be accessed, understood, and used to the greatest extent possible by all people regardless of their age, size, ability, or disability (What is Universal Design | Centre for Excellence in Universal Design). While we all are different, we also have different needs and abilities than others. The designs must have wide range for use and understanding, and they shouldn't need to be modified for ones needs as it must already have easy access. Being a product, or maybe a feature, the design functions are formed to work for as many as possible. Designs reduce adaption difficulties and as many people as possible are included in how the design works. One should always opt for the most inclusive feature if there is a choice. (<https://universaldesign.ie/what-is-universal-design/definition-and-overview/definition-and-overview.html>).

The term universal design was first mentioned by Ronald Mace, a well renowned architect in the US. He used a wheelchair after contracting polio as a child. Mace spoke loudly about making buildings accessible and he also founded what later would become Center for Universal Design. Not only the

term was formed, but also the philosophy of designing for everyone regardless of age and ability (<https://www.britannica.com/biography/Ronald-L-Mace>).

Universal Design constitutes from seven principles. First comes the name followed by the key concept and then the guidelines with “a list of the key elements that should be present in a design which adheres to the principle.” (<https://design.ncsu.edu/research/center-for-universal-design/>). These will follow within the paper. The key concepts presented by Center for Universal Design (<https://design.ncsu.edu/research/center-for-universal-design/>) are:

- **Equitable Use:** The design is useful and marketable to people with diverse abilities.
- **Flexibility in Use:** The design accommodates a wide range of individual preferences and abilities.
- **Simple and Intuitive Use:** Use of the design is easy to understand, regardless of the user’s experience, knowledge, language skills, or current concentration level.
- **Perceptible Information:** The design communicates necessary information effectively to the user, regardless of ambient conditions or the user’s sensory abilities.
- **Tolerance for Error:** The design minimizes hazards and the adverse consequences of accidental or unintended actions.
- **Low Physical Effort:** The design can be used efficiently and comfortably and with a minimum of fatigue.
- **Size and Space for Approach and Use:** Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user’s body size, posture, or mobility.

The key concepts can be applied to all new designs. More difficult is applying them to already existing products or services among other things. Being an accessibility strategist in Malmö, Sweden I have taken on the making our municipalities libraries as accessible as possible and always try to apply the key concepts. Most of Malmö’s libraries were not originally built with the intention of housing a library which makes it understandable that the buildings aren’t universally designed libraries. In this paper there will be more about these libraries and the work of trying to overcome obstacles towards accessibility. Content and achieved results from the guide will be mentioned throughout this paper.

In Malmö there are twelve libraries with one of them being the main library. Rather than building new libraries, there are other ways to try to fulfil as many of the applicable principals of universal design as possible. An appendix gives more explanation. Throughout this paper the laws, regulations, and such, referred to, are those of Sweden.

### **The public libraries of Malmö**

A Swedish public library must abide to a few governmental laws. The libraries are communal, and this administration also set a few regulations. The Swedish library act states that disabled are a target group, and they are given a special priority (SFS 2013:801) and all citizens must have equal access to the libraries.

Public buildings, like a library, must fulfil some criteria to function as such. These regulations are set by the Planning and Building Act (from here on mentioned as PBA), (SFS 2011:338). An example is how public restrooms are designed. There must be a certain circumference for a wheelchair to manoeuvre, a specific distance between toilet and wash basin, height of mirror placement as well as placement of soap dispenser. Not to mention the toilets armrest for the wheelchair bound person to be able to move from wheelchair to toilet. And of course, the placement of the toilet paper roll. Being a place where water is being used, a threshold is necessary to avoid flooding from the restroom, regulation mentions it must be as low as possible. These are a few regulations and general advice mentioned in the PBAs section called Easily Remedied Obstacles (BFS 2013:9 - HIN 3). Best be if there also is a contrast in colour from the white toilet and presumable white tiled wall to make it an easier task for the visually impaired to see the toilet.

Being disabled is not a reason for discrimination as it says in the law against discrimination, Diskrimineringslagen, (SFS 2008:567). Lack of accessibility is discriminating.

As an accessibility strategist my work is more practical than theoretical. It's hands on, if not my hands, the hands of my colleagues.

### **A library without obstacles**

When I began my work position, I immediately got thrown into an already existing, time limited, working group. This group consisted of librarians from six of Malmö's twelve libraries. The purposes of this group were a few; to write a guide for all co-workers, to investigate all libraries in Malmö to measure the level of accessibility, and practically upscale a few of them. At the very beginning, the main goals had to be set since we had to apply for a grant, which we eventually received. As one of the goals with the working group, creating the guide, a lot of research was done. We spoke to visitors, we interviewed teachers at schools for children with special needs, we observed the libraries visitors and we spoke to different associations for people with special needs and more. All of this together became our guide.

For us to understand where to begin we needed a professional view of our libraries. What do we need to do better and where do we begin. We chose a specific association, Begripsam, to do this overview. A few of their main goals are to contribute to the universally designed and more accessible societies. It is also important to mention that Begripsam also employ staff having disabilities. They checked the following five areas for us:

- Social accessibility (general approach)
- Access to activities and resources (planning viewing and events)
- Technical aid (access to mediums and technical aids)
- Physical accessibility (an accessible library)
- Access to information and communication (to write clearly and design information)

Their investigation led to a report of their findings. When they gave us their report with suggested or required, changes, we realised our libraries needed work, and since much has improved. During this time, we began altering some of the libraries that we noticed had many challenges regarding accessibility.

There were three libraries who received the makeover: Husie, Kirseberg and Rosengård, districts in Malmö. The main challenges were lighting, noise and the children's areas not being accessible at all. A lighting architect was hired to measure the lighting but also sort out problems found. At the same time the noise levels were measured, and the problem areas were corrected and repaired. At Husie a new inner roof was put in place, and to reduce echoes and other noises, silencers were placed around the public area, which also was done in the other libraries. At Kirseberg and Rosengård the children's areas were redone. At Kirseberg the baby section was situated in the basement with no other entry than a narrow staircase. On ground level shelves among other things were moved around to make place for a new baby and children's section.

A lot of knowledge has been attained with the changes of the three libraries and understanding why they had to be done. The libraries now function well with the changes as we followed recommendations from professionals, aiming for universal design.

Alongside this I began to network. I needed reference groups, with different disabilities, to come and visit our libraries and let us know what works and what doesn't. I now, a few years later, have a few different reference groups that help me, and themselves, to achieve the basic needs. Normally I get in touch with the group most appropriate for the task, sometimes I need more than one group's opinion.

As an example, for when I would need their help, I can mention this one library that needed more space. They obtained a location for expanding. More room was needed for visitors to be able to have meetings, or room for studying and such. The premise could also be let out to them who wanted to have evening studies, or group meetings or maybe yoga classes. It had previously been used as a dental office, so the property owner made sure to renovate the premise and change the layout to suit a library. When I was

shown the premise, I wasn't convinced it was accessible enough. The entryway had issues, as did the public toilet. Not to mention the emergency exit. I asked a few people from one of the reference groups to look and try out the premise. One of the persons from the group has cerebral palsy, had trouble when checking the toilet, it just wasn't up to par with an acceptable standard. As the check went on, they tried the emergency exit. One of the testers uses a wheelchair. First, she had a problem getting out as the opening had a step upwards, not so tall but still. Second, once she did get out the railing was to open so she feared she would fall out. The floor was grated and the holes were slightly too big for the wheels, she struggled get the wheelchair moving.

After this visit, which was filmed, the city planning office decided the location could not be used without making quite a few changes. These decisions are based on the PBA (SFS 2011:338). Not only because of the reference groups discoveries, although they made a big impact. By letting reference groups in to explore whatever it might be we are doing, we eliminate the risk of not having a universal design.

## **The guide**

The guide is written by dividing it into the aforementioned five areas. First an explanation is given followed by pointers, and/or a checklist.

Accessibility is participation. With UN's convention on the rights of persons with disabilities, we are bound to fulfil the requirements of universal design (<https://www.ohchr.org/en/instruments-mechanisms/instruments/convention-rights-persons-disabilities>).

This guide was written to be supportive and inspirational, for our colleagues working with accessibility in various ways. Our guide can be used by anyone as an inspiration, give some advice and show what Malmö's libraries can offer. We found that Begripsam's five areas of approach were usable, and targets universal design. Since dividing our areas of accessibility this way, applying the seven principals of universal design became easier.

- Social accessibility
- Access to activities and resources
- Technical aid
- Physical accessibility
- Access to information and communication

Social accessibility – general approach. Like anyone our visitors and users have different needs and wants. When someone doesn't respond or behave as expected, we might not always know how to react or help. Not all disabilities are visible, e.g., neuropsychological impairments as autism or adhd. Not all of us have the right qualifications to approach this correctly which makes it important to get the correct training. The social accessibility is very important, and we try to arrange for training opportunities every so often, so we understand how to meet all different kinds of people and make them feel comfortable and welcome.

The offers within the guide are basic, but one must remember that this information is essential and should be the basis in any function. See this guide as an aid for developing the work on accessibility and contributing to making the libraries more accessible.

Access to activities and resources – how to plan viewings, visits, and events. As we often have activities of different kinds, we aim for them to be accessible so everyone can participate. Some requirements to reach this goal are more important than others, and unfortunately, all demands can't be reached all the time. Therefore, we must inform our visitors what we can and cannot offer at a certain time, though there must be a minimum set of requirements. For events that have a larger audience we have and use a checklist to meet as many needs as possible.

If a school class wants a viewing of the library, the time for the visit is of essence. Best is if there are less visitors than usual, quieter than normal to give a calm and friendly visit. A few of us have also learned how to use ACC (signs as alternative and complementary communication tools), which may help some. For this kind of visits, we also have made a checklist to follow.

We offer adapted media, for example talking books and books in braille for children and adults with visual impairments and much more.

Technical aid – an accessible library. The libraries in Malmö might have a larger supply of technical aids than one would think. In most information desks and in auditorium like rooms there are hearing loops. There are also portable hearing loops. There are magnifiers, both handheld and bigger one for say newspapers, and reading cameras. A computer with braille display and braille printer, and more are being installed. These are a few of the technical aids available.

Physical accessibility – an accessible library. It's important for everyone to manage to find their way around the library and find what they are looking for. So, navigation must be on point with clear information, accessible signs, easy to read and understand them at all times. While roaming the area, it must be easy to use the toilets, get between the shelves, reach the books at same time as the environment has a comfortable setting with lighting and noise or sounds.

Access to information and communication - to write clearly and design information. Communicating in writing or speech, with our users is important, and it's just as important to use everyday language, easy to understand. To add to this, according to the Language Act (<https://lagen.nu/2009:600>), language in public functions must be clear, simple, and comprehensible – plain language, to which we abide.

### **How does seven principles of universal design and Malmö libraries five principles complement each other?**

There is no one design solution that would satisfy everybody.

Even if the physical accessibility is important, **social accessibility** is also important. Making people feel comfortable, understood, and accepted does go a long way. Being attentive, respectful and to listen is a large part of the social accessibility. **Equitable use** mentions not segregating or stigmatizing, as well as respecting privacy and safety. Both principles are clearly about respect and acceptance.

To join **activities or visiting** the library it must be an easy task, a **simple and intuitive** use as the **third principle** says. During school visits or literary evenings, checklists are provided to eliminate eventual problems or complex incidents. We offer sign language interpreters or similar, if needed, as the guide and principle states. For school visits we offer a range of preparatory meetings or information letters for the children and principle four asks for a variety of information modes, different elements of description and provide for people with sensory limitations. Most of our arrangements are filmed and can be found on our website. Malmö council have a regulation that all films published must have captions, an audio describer, colour choices, sign interpreter and a few other choices made by the viewer. With providing technology that can adapt to one's preference and the provision of the different interpreters, effective communication is provided as well as this being non-discriminating.

At a library there is a lot of technology, whether one needs it or not. There are lending machines, and book drops. Copying machines, magnifying glasses – handheld and larger ones with more tech. And of course, there is the website. And for the ones you might want we also offer talking books, e-books and more. The **technical aid** being computer programs helping the visually impaired, the dyslectic, word processing software using symbols among others. With our technical aids we have tried to not stigmatize or segregate as **principle one** opts for.

As previously mentioned, our libraries were not built according to the universal design. The main library consists of three buildings combined. The oldest part was completed 1901, but then as a museum. Not until 1946 did it house the library. And in 1999 the remaining two buildings were completed. From the outside the three different buildings are obvious. When inside it's hard to tell.

With the library being a tall building, all three parts, elevators are necessary. There are two elevators in each building, and they are all similar in size. Unfortunately, our elevators are sometimes too small to fit modern wheelchairs. This occasionally makes three of our five floors non-accessible for some. Even if the elevators are to be changed, the shaft cannot be widened. Having elevators does on the other hand help many that cannot use stairs. The **physical accessibility** is key.

Navigating in the libraries must be simple so we have chosen to have the same navigating system at all libraries as well as the colour scheme and signage to simplify our libraries for everyone. All signs are plain and easy to see and understand. Clear signs that show either area, subject or pointing towards the toilets e.g. Reachable signs have braille print besides symbol and print.

When purchasing furniture or changing them, we make sure that there is something for everyone which can be understood in **principle seven**, and that appropriate size (of space, area or product) is provided regardless of user's body or mobility. With furnishing and arranging the environment and choosing design that offers a range of individual preferences and abilities is expressed in the **second principal**. We aim to accommodate as many as possible, everyone can find something that suits them.

To **inform and communicate** can sometimes be difficult. It is our duty to make it easy for everyone. No one is to be put aside, whatever the reason. **The fourth principal** says our design of what it may be, must be easily understood by anyone. We offer different ways to provide information, and how we communicate. We normally communicate digitally, by static signs or verbally. All information is given with everyday and easy language. For visibility communication we have safety markings on doorways, glass walls, stairs, and other areas difficult to see or separate with visual impairments.

We can serve those who cannot visit the library, with home visits, to deliver books. This is a service for all who cannot leave their home for whatever reason, age or disability be it permanent or a limited time. We also have home delivery service or postal service of talking books specially produced for those who cannot read an ordinary book. With this comes a certain CD-player called a Daisy player. Having these choices as a service for our users, it expands the way one can use the library. Applying to the **sixth principle**, the design can be used with a minimum of physical effort. At the same time, we provide for the **first principle** as we give service to them at home, instead of at the library, no stigmatizing at the same time a privacy and security is provided.

Our goal is to have libraries that are accessible to as many as possible. It takes time and a lot of work, for everyone involved. We would not have come this far if we didn't work together as a work team, or if we didn't have the help of our reference groups. Together we work for the human right to accessibility.

Find principles here (<https://design.ncsu.edu/research/center-for-universal-design/>).

## Conclusion

A library being universally designed is a goal. We aim for accessibility for as many as possible. This paper should give some inspiration on how to be an accessible library.

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## References

[1] Begripsam. (2023). *We are Begripsam*. Stockholm.  
<https://www.begripsam.se/english>

[2] BFS 2011:13. (2023). *Boverket – the Swedish National Board of Housing, Building and Planning*. Karlskrona. <https://www.boverket.se/sv/lag--ratt/forfattningssamling/gallande/hin---bfs-201113/>

In English: <https://www.boverket.se/en/start/>

[3] Connell, Bettye Rose, Jones, Mike, Mace, Ron, Mueller, Jim, Mullick, Abir, Ostroff, Elaine, Sanford, Jon, Steinfeld, Ed, Story, Molly, and Vanderheiden, Gregg. 1997. *The principals of universal design*. <https://design.ncsu.edu/research/center-for-universal-design/>

[4] Nationerna, F., & FN, F. (2006). *Konvention om rättigheter för personer med funktionsnedsättning. Sveriges internationella överenskommelser SÖ 2008, 26*.  
In English: <https://www.ohchr.org/en/instruments-mechanisms/instruments/convention-rights-persons-disabilities>

[5] Nationerna & FN, 2006

[6] SFS 2013:801. *Bibliotekslag*. Stockholm: Kulturdepartementet.

[7] SFS 2008:567. *Diskrimineringslag*. Stockholm: Arbetsmarknadsdepartementet MRD.

[8] SFS2011:338. *Plan- och byggförordning*. Stockholm. Landsbygds- och infrastrukturdepartementet SPN BB.

[9] SFS 2009:600. *Språklag*. Stockholm: Kulturdepartementet.

[10] Wikipedia. (2023). *Ronald Mace*. [https://en.wikipedia.org/wiki/Ronald\\_Mace](https://en.wikipedia.org/wiki/Ronald_Mace)