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USER OR EXPERT?

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Abstract

Modern design thinking welcomes design strategies that actively involve and cooperate with the user. Designing has grown into creating for people, with people. In the Nordic Region Co-design and Participatory Design are well known methods for bridging the gap between designer and user. Based on the on-going PhD research project "Generating Inclusive Built Environments through User Driven Dialogue in the Architectural Design Process", along with qualitative research conducted at the Danish Building Research Institute, this paper discusses the role of the disabled user in the design process of inclusive architecture.

The Disabled People's Organisations Denmark (DPOD) is one of the core actors in user participation related to accessibility and Universal design (UD). However, there seems to be a confusion regarding the role and responsibilities of these users. As users of accessible solutions and UD, the DPOD representatives are repeatedly mistaken for experts on accessible design and the current Danish Building Regulations. Consequently, the DPOD representatives are seen as guarantors of the correct and legitimate design solution.

This confusion combined with the user's partial understanding of complex architectural processes and the architect's limited knowledge of "life with a disability" leads to misinterpretations in the collaborative relationships. These misunderstandings might lead to hindrances in the process as well as architectural solutions that do not meet expectations.

The aim of this article is to shed light on these misinterpretations and discuss the role as well as reflect upon the knowledge potential of the user, in generating built inclusive environments. Through research data and theory the article analyses the current situation and discusses the implication of revising the user role. Hence the aim of this article is to contribute to the process of redefining the role of the user, with regard to UD as process and design solution.

Keywords: user involvement, user organisations, design process, universal design, architecture

Introduction

To some extent, modern design thinking has developed into creating for people, with people. The term 'Design Participation' was introduced in 1971, at a three day Design Research Society Conference, in Manchester [Cross, (1972)]. In this conference, Reg Talbot and Nigel Cross, organisers of the Design Research Society had included participatory management and dynamic design games. Since then, this approach has spread and influenced industrial design and, in hybrid forms, the architectural field, in many countries. Design thinking and the role of creating in the architectural process have been taking on new forms and involving new participants.

In the Nordic Region, Participatory Design, Co-design and User-Centered Design has become well known frameworks of processes to bridge the gap between the designer and the user and also a political means to support inclusive strategies in order to involve the community. User-driven development is not really a set of methodologies, but a philosophy or paradigm that a collaborative team can follow. Hence this development has articulated new roles for designers and architects, in order to reconsider and transform design processes and create new platforms for social inclusion in design practice.

The participatory design approach has also addressed a need for a clarification and a precision of the framework of the user's role, scope and answerability in the collaborative relationships.

In a Danish context, this development of modern design thinking also relates to processes of accessible design solutions and inclusive architecture. The Disabled People's Organisations Denmark (DPOD) has become one of the core actors in participatory processes of accessible design solutions and inclusive built environments and their active participation is reflected at global, national and local levels [<http://www.handicap.dk/politik/>].

The reason for these organisations' active participation in processes of accessibility and inclusive architecture stems from an absence of interest or engagement in the professional building landscape of stakeholders and practicing architects. The lack of attention to this subject could indicate that accessibility and universal design is yet to be defined and implemented as architectural design values in architectural strategies and methods.

The Disabled People's Organisations Denmark is a national umbrella organisation with 33 member organisations embracing more than 330.000 members. DPOD defines their commitment to engage in efforts that serve to encourage and protect the rights of persons with disabilities.



Figure1. House of Disabled People's Organisations Denmark / Cubo and Force4

Body-based discrimination in built environments

With the overall ambition to eliminate body-based discrimination in built environments and thereby improve independence and everyday life for persons with impairments, the Disabled People's Organisations Denmark takes a political starting point in the United Nations Convention on the Rights of Persons with Disabilities. The UN Convention not only makes clear that states should not discriminate against persons with disabilities, the Convention also explains the many steps that states must take to establish an inclusive environment in order to let persons with disabilities enjoy equality in society.

The strengthening of the United Nations Convention on the Rights of Persons with Disabilities includes the approach and inspirations of Universal design.

When we use the term universal design (UD) in this article, it refers to a broad spectrum of ideas meant to produce buildings, products and environments that are inherently directly accessible to children, older people, people without disabilities, and people with disabilities. Universal design is referred to as a design strategy for architecture and landscaping as well as strategies to meet external political and social aspirations in the future.

Universal design values embrace the importance of social inclusion in line with the Rights of Persons with Disabilities and point out the importance of accessibility as an interaction between society and individuals. The Rights of Persons with Disabilities emphasise equality, inclusion and the understanding that difference in ability is a natural and foreseeable human condition or experience. From that perspective, physical barriers and limitations are environmental challenges.

This view is often referred to as a social model of disability. The social model is a critical reaction to the earlier dominant biological or medical model which in itself is a functional analysis of the body as a machine to be fixed in order to conform to normative values [Lid, (2010)].

The social model of disability identifies barriers, negative attitudes and exclusion by environments and society. From this perspective, the physical environment and society are the primary contributory factors in disabling people. Although physical, intellectual, sensory or psychological variety may cause individual functional limitations or impairment; these do not have to initiate disability, unless societies fail to include people regardless of their individual differences. The social model of disability can be traced to the 1960s, and the specific term emerged in the United Kingdom in the 1980s.

Earlier views were based on the perception that the limitation resided in the individual, in the human body. This view confined disability to a permanent condition arising from disease or injury. A person was considered disabled due to individual and health-related causes. This is called a biological or medical model of disability.

These two models, the social model of disability and the medical model of disability are noteworthy components in this article as we touch on the different interpretations of disability together with accessibility and universal design [Lid, (2010)] [Charlton.(2000)] [Garland Thomson ,(1996)].

Along with moving the perspective of limitations from the individual to the surroundings, universal design responds to the awareness that accessible design solutions and inclusive built environments should not only eliminate barriers for some, but also enhance experiences for everyone.

From this viewpoint, the Disabled People's Organisations Denmark are building the commitment and engagement to inspire and support inclusive built environments, offering guidance and user perception in design and architectural processes. User representatives of the organisation share their experience of accessibility and inclusive design in an effort to contribute to the design process with a "one to one insight" of accessible solutions.

However the dialogue and the cooperation between this particular user group and the professional stakeholders and architects have not yet been studied.

Despite examples of collaboration between the architectural field and the DPOD user group, it is a challenge in Denmark to build architecture and shape physical environments so that it favors the motivation that universal design meets the expectations of the user group. Architecture infrequently shows an integrated and holistic approach when it comes to UD and accessible design solutions. [Frandsen, et al, (2012)] [Ryhl & Frandsen, (2016)]

In this article, the term architecture covers the planned and built environment and outdoor spaces. We use the term pragmatically and objectively to cover the built environment constructed to facilitate and support human life and interaction. Lack of accessibility in architecture hinders people with impairment from exercising their right to be a part of and interact with society, such as the right to an education, take part in politics, meet friends and family and enjoy nature and cultural life.

This overall challenge stems from various obstacles of unclear interpretations of accessibility and UD, fragmented knowledge of accessibility and UD and undefined collaborative relations with the user group.

A long-standing predominant focus on physical accessibility and its codification has led to critiques in the architectural field upon the legislative interpretation of accessibility and UD, represented by rules and standards. This critical position

develops from the view that the interpretation of accessibility and UD in the Danish Building Regulation is a limitation of the creative design processes and innovative thinking. [Ryhl, C (2009)] [Frandsen, et al, (2012)] [Kirkeby, et al, (2014)]

Nevertheless, the potential of addressing the objectives behind building legislation and regulations as an encouraging supplement to the regulations' measurements and standards is not met by the schools of architecture. Accessibility and universal design is not yet to be found in the architectural education or training in Denmark.

The Danish Building Research Institute (SBI) has been conducting research on UD and encouraged the development of inclusive built environments and accessible design solutions for more than a decade. The research is not only covering the level of building's functionality, but also includes human aspects of spatial experiences, sensory features and social responsibility.

However the exchange of knowledge between researchers and the practicing architectural field still appears to be a challenge. With the intention of furthering the comprehensive understanding of UD, the challenge is to develop a means to describe and communicate spatial quality and social values of accessibility and UD in architecture [Kirkeby (2005)]

The social perception of accessibility and Universal design is not necessarily a part of the awareness of the architect. A predominant focus on physical accessibility and the Building Regulations' operational measurements has led to a specific approach which often includes accessible design solutions in the final phases of projects, often as "add-on solutions".

Add-on solutions in this article cover prefabricated accessible solutions meant to specifically support persons with impairment in contrast to solutions designed and incorporated in the architectural scheme, supporting human diversity and differences in the body's physical ability.

These add-on solutions do not necessarily correspond with other architectural elements in the project neither are they responding to the manifold interactions between the body's physical diversities and inclusive environments. They are specific design solutions for specific people.

Absence of universal design strategies in the architectural practice indicates that universal design is yet to be defined and implemented as social values and spatial quality in the architectural education and working methods.

Among other aspects, the lack of implementation of UD in architecture may be related to limited knowledge and experience which strengthen and inspire the design process. Or it may be related to useful and already existing knowledge not addressed in architectural practice. Importantly, this questions functionality and efficiency of collaborative relationships with the user. Is user participation and dialogue always an enrichment of the design process? How do the DPOD user representatives address need-based knowledge to the architectural field so that it can inspire and meet both functional expectations and architectural qualities?

Other aspects may be the basis of the challenge - the task of anchoring universal design as a natural part of the architectural thinking.

In this article, we discuss and reflect on competences and the knowledge potential of users, for generating inclusive built environments. We will suggest out knowledge potential, which could inspire innovative design processes.

We argue that knowledge plays an important role in the creation of built environments and that knowledge is not just statically stored in creative processes. The transfer of knowledge, from the place it is created or stored to the place it needs to be applied is therefore essential. Hence, sharing of experiences and knowledge flow are important means to meet innovative design strategies that actively involves and cooperate with the user.

The term knowledge flow is seen as a passing of shareable content between actors and contains three important components: direction (sender and receiver), carrier (medium) and content. It is the process that transforms knowledge from constructed knowledge in the source context to translated knowledge embedded in practice in the target context. A good knowledge flow enables participants to cooperate effectively and share useful experience (Zhuge, 2006).

Since our physical environment is rarely designed and built with attention to UD, and as solutions with a focus on accessibility and equality are not incorporated in the architectural practice, it calls for a broader consideration of both the collaborative relationships with the users and the knowledge potential of the users. Broader studies of the existing, or not existing dialogue and knowledge flow between the architectural field and user representation of people with impairments.



Figure2. Hazelwood School in Glasgow, United Kingdom/ Alan Dunlop Architect Limited

The role of the user in collaborative relationships

In order to be brought closer to the understanding of the role of users in this particular collaborative relationship, the research study *“Generating Inclusive Built Environments through User Driven Dialogue in the Architectural Design Process”* explores and discusses the nature of the current relationship and then reflects on the potential of redefining the role of the user in the relation.

With the motivation to shed light on the user-driven discourse and interaction with the architectural field, the research study explores the landscape of accessibility and universal design with special attention to this collaborative relationship.

The framework consists of objectives to identify and reflect on the role of this particular user group and discusses their experience and competence to be being dialogue partners in design processes. It is the ambition to provide a critical reflection on the current situation and possibly suggest opportunities of development and potential for strengthening the user representatives as dialogue partners.

In the ambition of change and enhancement of user representation in the Disabled People's Organisations Denmark, the study draws on references from action research methodologies and involves the organisation, whilst simultaneously conducting research. The research is to some extent based on participating observation in the DPOD organization and a close dialogue with its core actors of disability policy. Through observations of the actual DPOD engagements for eliminating discrimination in built environments, the close relation allows practice-related knowledge to be a part of the empirical source of knowledge. [Nielsen & Nielsen (2016)]

With ambitions to identify and possibly enhance the qualifications and competences of the DPOD user representatives as dialogue partners and user participants, the study views political DPOD strategies and observes characteristics of work culture and interaction with the building industry. The observations build on participation in meetings and daily responsibilities as an observer, for the most part as "a fly on the wall".

In corporation with the DPOD, It is the ambition to formulate how can the DPOD user representatives address need-based knowledge to the architectural field so that it can be translated into architectural form and function. The process that transforms knowledge from the source context to translated knowledge embedded in practice. How can DPOD user representation support innovative design processes?

Empirical knowledge gained from existing research, observations and qualitative interviews with both DPOD representatives and professional stakeholders from the building industry is generating a perspective covering the experiences of the two parts in the collaborative relationship. The knowledge is gained from semi-structured interviews with twelve DPOD representatives and with representatives of six core organisations from the Danish building industry. The twelve chosen DPOD representatives cover a group of disabilities which are all interrelated with requirements of accessible design solutions, such as wheelchair users, visually impaired, hearing impaired, speech-language impaired and intellectually impaired.

Groups of disabilities with no direct relation to requirements of accessible design solutions are not a part of the interviews, such as diabetes, attention-deficit/hyperactivity disorder, epilepsy, heart conditions and emotional disturbance. However, informal and un-structured interviews and conversation with these groups has clarified if the group has a focus, or a requirement for accessible design solutions.

The conducted qualitative research studies indicate discoveries which might answer the questions of how DPOD user representation can support developments of inclusive environments. Notably, we must acknowledge that these studies of the user's role in this particular collaborative relationship are still in their first phases and additional interviews are conducted as this article is written.

The interviews draw on an interview guide, a list of questions and themes that need to be covered during the conversation. The semi-structured guide provides a clear set of directions for the interviewer to provide consistent, comparable qualitative data. However the inclusion of open ended questions and preparation of the interviewer to follow relevant themes that may stray from the interview guide does, still offer an opening for identifying new ways of seeing and understanding the theme. Furthermore the open ended questions give respondents the opportunity to explain if they do not understand the question or do not have an opinion on the subject. The semi-structured interviews of this project, are preceded by observation, informal and un-structured interviewing, in order to grow a profound understanding of the subject of interest required for developing applicable and meaningful semi-structured questions.

Preliminary findings points to an overall confusion regarding the role and responsibility of the user representatives in the architectural field and in the user group itself.

As users of accessible design solutions, the DPOD user representatives are expected to possess certain knowledge of accessibility and universal design. However, as users of accessible solutions and UD, the user representatives are very often mistaken for experts in accessible design solutions and building regulations. As a result the DPOD users are seen as guarantors for the correct and legitimate design solution by architects and building contractors.

Qualitative interviews with representatives of core organisations from the building industry and practicing architects indicate the understanding that involving the DPOD representatives is a way of securing and approving accessible design solutions in architecture. This view can lead to misinterpretations of commitment and responsibility in the collaborative design process and give the impression that the competences of user representatives are more comprehensive than they really are.

Interviews with representatives of DPOD member organisations show a general perception of being “taken as a hostage” in the design process or being misunderstood as a professional accessibility consultant or specialist. The experiences of misinterpretations is confirmed and emphasised by the participating observations in the DPOD organisation. The narrative of “being taken as a hostage in the design process” is per se a well-known phenomenon in the user group and in the organisation.

The users representatives experience the functionality of accessible design solutions on their own body and in so doing they can contribute with experienced descriptions of design and functionality. However, can we expect users to support architectural knowledge and furthermore be experts of accessible designs?

User representation in DPOD consists of unpaid assistants offering an individual user perspective in design and construction processes. The DPOD representatives should not be seen as professional consultants or as guarantors for the correct and legitimate design solution. This responsibility lies with the professional building owner/contractor and the professional consultants. User representation supports the professional design process, facilitating need-based knowledge and “one-to-one insight” of accessible solutions.

This facilitation can entirely be seen as a non-professional supplement disengaged of authorized or legitimate responsibilities.

This understanding is confirmed and emphasised in some of the research interviews with DPOD representatives, others find their role and competences more unclear.

It is essential to communicate the understanding of the user role, competences and responsibilities to the architectural field and the building industry. Undefined roles and unclear expectations blur the collaborative process and are reflected in the final product.

The undefined role of the user representatives is also to be found in the DPOD organisation itself. It shows as enlarged expectations to the DPOD user representatives and their competences. As a national organisation, DPOD, is expected to represent all member organisations of the umbrella organisation and support their overall ambitions – and so are the user representatives. However, interviews with representatives from DPOD member organisations show the challenge of being spokesman for the large group of very different organisations to be practically impossible.

Interviewees point out that user representatives of member organisations who live their lives with impairment facilitate need-based knowledge on the basis of experience of the built environment having a particular impairment. Hence it is a comprehensive task to facilitate and to guide on behalf of a large group of diverse people with a variation of impairments. To be a member of one particular user group and mediate very specific need-based knowledge and at the same time represent all of DPOD's member needs is complicated. One design outcome can be the ideal solution for one group of users and at the same time not a functional solution for the other group of users.

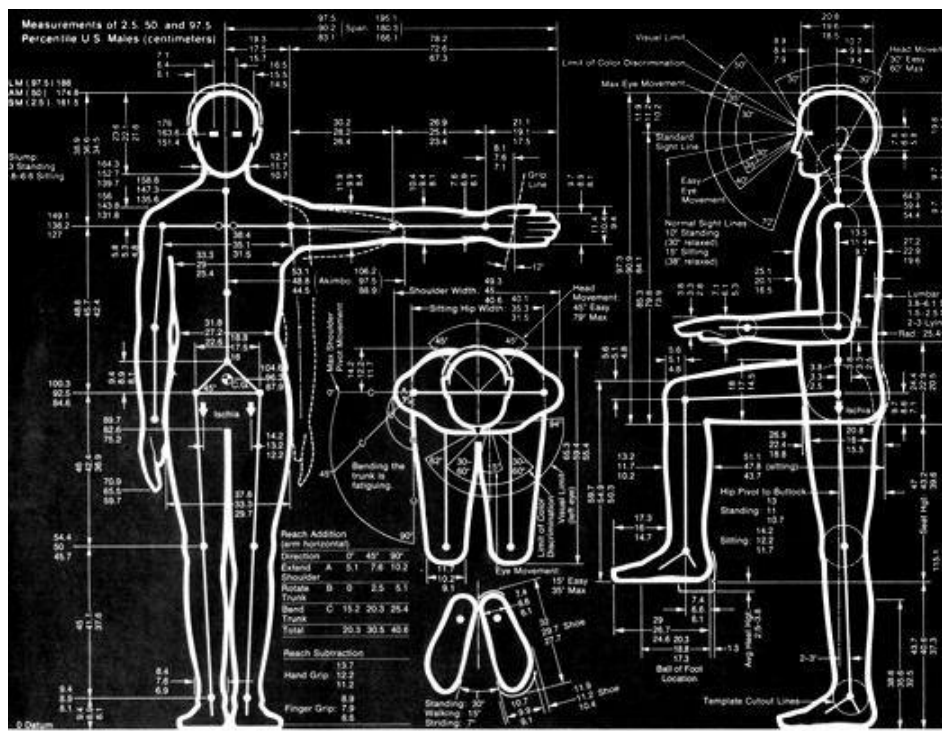


Figure3. Anthropometric dimensions of the human body

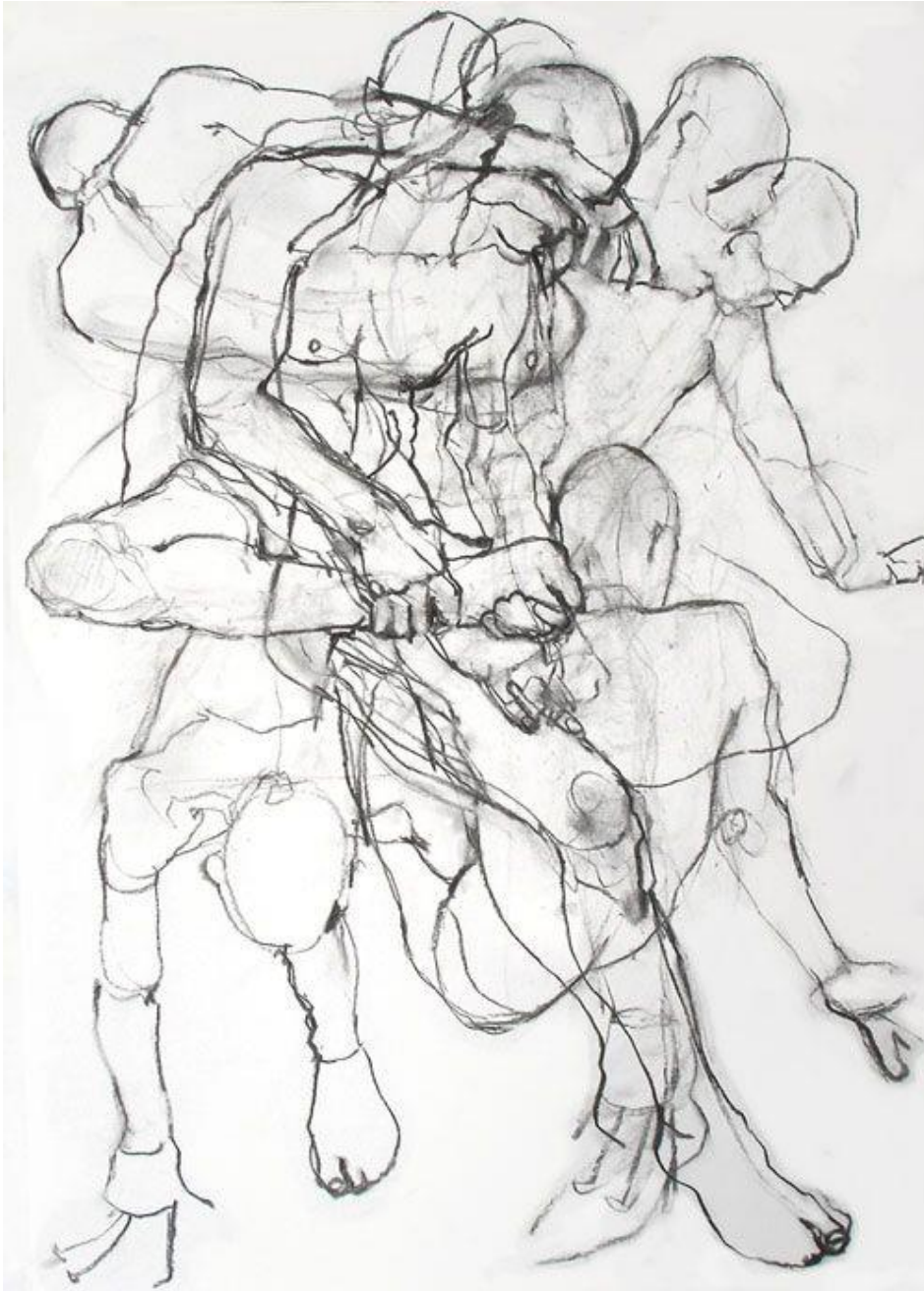


Figure4. Movement of the human body

Knowledge potentials of the user, in the shaping inclusive environments

This overall confusion regarding the role and competences of the user representatives and the user's limited understanding of complex architectural design and building processes indicate obstacles in the collaborative process. At the same time, this indication suggests potential opportunities to explore new platforms for user participation in design practice.

The user's partial understanding of complex architectural design and building processes appears to be a hindrance for the dialogue between users and the building industry, which causes misunderstandings in the collaborative relation-

ships. Interviews with core organisations from the building industry and practicing architects point out lack of knowledge of architectural methods and processes in the user group, as an essential challenge in the relation.

It is a challenge for the architectural field to simplify and exemplify the architectural complexity and meet the user representatives in a mutual position. This can cause an unbalanced dialogue between the architect who possesses the insight and knowledge and the user who is a layperson trying to follow the architect.

As a result, the DPOD user representatives generally appear to find support and direction in legislation and the current Danish Building Regulations. Interviews with the user representatives and observations in the organisation uncover the legislation and the current Danish Building Regulations as important argument tools for the user representatives. It is seen as a means to “speak the same language” as the architect and thereby having a more balanced dialogue.

However, building legislation is not the responsibility of the user representatives to facilitate, but the responsibility of the building contractors and their consultant to examine in order to comply with the Danish Building Regulations

Mirroring this, the user’s partial understanding of complex architectural processes limited knowledge of “life with a disability” in the architectural field, point out reverse difficulties in the relation. Along with a possible resource to balance the dialogue this draws attention to knowledge potentials for the user representatives to meet. This sort of knowledge, “life with a disability” is useful knowledge for the practicing architects in the process of understanding the user and translating requirements into architectural form and function.

This indicates the importance that users facilitate knowledge which builds on the body’s life experiences together with the understanding that body’s physical diversity and difference in ability is a natural part of our lives. Difference is a characteristic of human diversity. [Lid, (2010) Lid, (2012)]

Qualitative interviews with professional stakeholders in the building industry to some degree show a more uniform understanding of human diversity and accessibility. Accessibility is, in many cases, understood as specific design solutions for specific people. In this view, impairment is understood as a deviation from the norm, from what is understood as ordinary or normal.

This view does not correspond with the participatory approach and inspiration of DPOD. As the organisation’s understanding of user participation is built on United Nations Convention on the Rights of Persons with Disabilities, they place an emphasis on the understanding that difference in ability is a natural human condition.

This calls attention to the user representatives and the importance of carefully communicating this motivation to the collaborative dialogue partners.

The research also points out a great potential of the user representatives in mediating the social aspects of accessibility and meeting the architectural values of social responsibilities and holistic strategies. These values are a natural part of the architectural education and architectural practice and they are inspired by most architectural approaches.



Figure 5. Advancing the dialogue

Perspectives: Advancing the dialogue

Understanding of daily life with impairments is essential for designers and architects, in order to recognize, how accessible design and user friendly solutions supports and inspires independence and empowerment. When living with impairment, independence and social interaction is dependent on inclusive design thinking and functional architecture. Poorly functional design solutions and non-inclusive architecture hinder independence and social life for persons with a disability.

In facilitating the social implications of accessibility, there is the potential of addressing the objectives behind building legislation and regulations as an encouraging supplement to the regulations' operational measurements and standards. The DPOD user represents the experience and knowledge of the user needs represented in the Danish Building Regulations. This is valuable knowledge for the practicing architect to possess in the process of translating need-based knowledge into form and function and understanding the expectations of the users.

We argue that it is valid for the architect to know how inclusive environments and good accessible design solutions can embrace independence and empowerment. Knowledge based on physical experiences in architecture and the social motivations behind accessibility and universal design indicate a knowledge

potential that the user representatives could meet. It can also be seen as a contribution to the process of redefining and emphasising the role and responsibilities of the DPOD user representation.

An understanding of, and empathy with, the user group is essential for creating new platforms for inclusion in design practice and for generating inclusive environments in a collaborative relationship. We recognise that architects gain knowledge through education, practice and personal experience. Nevertheless, in specific processes of designing, such as those involving participants who are different from themselves architects cannot rely on past experience.

From this, the notion of advanced dialogue and an optimised flow of knowledge is a forward-thinking strategy towards developing and maintaining the understanding of the user throughout the design process. Even though designers and architects have come a long way towards involving users while designing, it is still considered a challenge to develop understanding and meet the expectations of users when they are not present. Without an ongoing dialogue and knowledge of how a space may be perceived, interpreted and experienced by the user group (in this case persons with a disability) collaborative relationships are of no use/ineffectual.

This draws attention to collaborative processes that involve the user in the development cycle from the starting point and that make room for recurrent scenarios of evaluation and further development.

In order to facilitate innovative collaborations with the architectural field, it is necessary to revise the role of the DPOD user representative as well as a more delimited room for manoeuvre might be valuable. Furthermore a careful differentiation between the knowledge and experience that the two parties bring to the collaborative relationship could lead to future innovative design processes.

Knowledge of the user group, based on physical experiences of perceiving architecture, exhibits great potential of supporting practicing architects in the design process. Conversely, insight in architectural processes and building phase's exhibits great potential for supporting the user in mediating need-based knowledge in the collaborative process.

With the motivations of furthering the comprehensive understanding of accessibility and UD as architectural values, our research is mediating the social aspects and responsibilities of accessibility and in order to bring useful knowledge to advanced architectural dialogues and strategies. Our continuous studies of the collaboration, and pointing out of potential, aim to support architects and user representatives in shaping built environments that are accessible and inclusive.

From this, the notion of involving the user in the development cycle from the starting point, advancing the dialogue and optimising the flow of knowledge is forward-thinking strategy towards maintaining and understanding of the user and developing inclusive built environments that not only eliminate barriers for some, but also enhance experiences for everyone. And even more so, this notion might enhance the understanding of the real field of expertise of the user.

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- <http://www.handicap.dk/politik/>