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Qualitative Description of Spatial Quality in Inclusive Architecture

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Abstract. Universal design (UD) has gained global significance and is in the process of institutionalisation in the Nordic Region. This is despite an urgent necessity for developing the theoretical basis and practical applicability of UD. Reflecting this need for furthering the comprehensive understanding of spatial implication of UD, this paper aims to contribute for articulating a means to assess the quality of UD in architecture. Drawing upon numerous cases from research conducted at the Danish Building Research Institute, the paper focuses on sensory aspects of spatial quality, and discusses as well as reflects an applied method for producing the qualitative description of selected buildings that embody UD through creative solutions. The qualitative description of collected examples appears to be effective in delineating sensory aspects of spatial experience; however the systematic development of assessment criteria is essential in order to support students and designers to make responsible decisions in shaping built environments that are accessible and inclusive but also enjoyable.

Keywords. Universal Design, architectural design, sensory experience, quality assurance

1. Background

Since Mace's introduction, Universal design (UD) has secured an increasingly prominent position. The adoption of the concept in the *United Nations Convention on the Right of the Persons with Disabilities* consolidated its status as an international governing term. To further eliminate obstacles and barriers in the built environment, this internationally acknowledged concept of UD has found its way into accessibility codes in Denmark. In the Nordic Region, UD is in the process of institutionalisations shaped by the rationale of administrative functions, and in part, by the language of construction industries and values of consumerism. This is despite the limitation of and critiques upon the legislative interpretation of UD (represented by codified rules and standards) which does not necessarily responding to the manifold interactions between diverse bodily varieties and material environments. This critical position highlights a need to discuss UD from other angles, through which the theoretical basis and practical applicability of UD must be assessed.

The Danish Building Research Institute (SBi) has been undertaking research on UD and promoting the development of universally designed buildings and services almost a decade. SBi has not only challenged to ensure the level of building's function,

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but also include aspects of experience, senses, stimulations, social responsibility and sustainability. Within the wide scope of UD, one of our focus areas has been on the sensory aspect of spatial experiences. A long-standing predominant focus on physical accessibility and its codification had led to this specific approach that holistically understands the manifold interactions between bodies and the built environment. With an intention for furthering the comprehensive understanding of spatial implication of UD, our challenge has been, accordingly, to develop a means to describe but also assess the spatial quality of UD in architecture.

2. Reflections

Numerous case analyses have been conducted across different projects at Sbi. These projects dwell in the phenomenological thinking in architecture with reference to a number of thoughts. Our concerns on body, senses and space and architecture include the sense of sensory system and experiences, perception and atmosphere, and spatial experience in architecture. Based upon these, a developed method for analysing cases combines quantitative data with qualitative descriptions: qualitative descriptions of architectural spaces that are accessible and inclusive but also for well-being [1] [2]. A framework for the qualitative description focuses on a number of factors that are interrelated: 1) physical quality of architecture: i.e. materiality, dimension, proportion and organization; 2) sensory aspects of architectural experience: i.e. vision, hearing, touch, smell, kinaesthetic; and 3) mediating phenomena: i.e. daylight, acoustics, air, art, movement and social interaction.

Most of the actual analyses of cases employ a mixed methods research approach that includes semi-structured interviews with both architects, other stakeholders and users, which then combined with spatial analyses that are both qualitative and quantitative. Quantitative data includes the measurement of reverberation time, daylight factors, illuminances and so forth. Based on the human sensory system, selected cases are organised accordingly with bodily senses that influence the experience of the environment. This model indicates that a systematic and multifaceted method contributes for the development of new assessment criteria in qualitative description of UD in architecture. Also this might infiltrate UD amongst practitioners as their methods, values and architectural thinking is built upon a foundation of multisensory inclusion and quality [3] [4].

3. Perspectives

A mixed method focusing on the qualitative description of collected examples appears to be effective in delineating sensory aspects of spatial experience. Importantly, however, we must acknowledge that this applied method is still under development, and comes with variations each time applied. But also it covers only a part, not whole, of the spatial quality of UD in architecture. And yet the systematic approach, based upon bodily senses in experiencing architecture, exhibits great potential to support practicing architects. We hope our continuous efforts will lead towards practitioner and students of architecture for making responsible decisions in shaping built environments that are accessible and inclusive but also for well-being.

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