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10 Questions

Ten questions concerning inclusive design of the built environment

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ABSTRACT

In recent years, the design community has witnessed the development of several design approaches aimed at taking into account the diversity of human abilities and conditions during design. One of these approaches is inclusive design, used here as an umbrella term to cover also universal design and design for all. This article addresses some of the common questions that arise when inclusive design is considered in relation to the built environment. It discusses how inclusive design is defined and interpreted, what its relevance, implications and challenges are in relation to the built environment, how it relates to other significant design issues, and how it can be fostered in the future. This introduction to the idea of inclusive design is of interest to built environment professionals and researchers seeking a more holistic approach to the built environment. Foregrounding the diversity in human interactions with the built environment supports reflection on the human impact of design decisions. By offering diverse spatial qualities and use opportunities, inclusive design has the potential to help addressing the challenges of our diverse and ageing society in a sustainable way.

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1. Introduction

Several design approaches aspire to take into account the largest range of users possible during design. These approaches include, for example, universal design (UD) [1–3], inclusive design [4–6] and design for all [7]. Despite their different place of origin and some semantic distinctions, all these approaches share a similar purpose. In this article they will therefore be considered interchangeably and henceforth referred to as inclusive design. This term is chosen over the other two because it directly reflects the common ambition of these approaches to *include* as many people as possible.

Inclusively designed environments can offer diverse spatial qualities and opportunities for using spaces in multiple ways, by taking into account people's diverse abilities. Very telling in this respect is the work of architects Carlos Pereira or Chris Downey. Since they lost their sight, they each use their embodied knowledge of being blind to create richer architecture by incorporating shapes and materials for their multisensory potential [8]. In designing a proposal for a sea bathing facility at the Portuguese coast, for instance, Pereira chose the basin's rounded shapes for their haptic qualities and integrated seaweeds in the smaller basins for their olfactory and tactile qualities (see Fig. 1).

Several studies suggest, however, that the adoption of inclusive design in design practice is limited so far, especially in relation to the built environment [9,10]. This limited adoption may relate to misconceptions existing around inclusive design [11]. Studies show that inclusive design is understood by architects and other built environment professionals in multiple ways [10–12]: inclusive design is considered as a set of good intentions, a basic attitude that seems to be associated with accessibility and functionality; it is also considered as utopian [16], since its goal to design for everyone is impossible to reach. As a result, many architects and other built environment professionals may feel uncertain as to what exactly inclusive design entails. This suggests that there are still many challenges to address, relating to the perceptions and the practical applicability of inclusive design.

The following introduction to inclusive design is of interest to built environment professionals and researchers who want to contribute to fostering a more holistic understanding of the built environment, taking into account the diversity of human interactions with it. Inclusive design is not limited to the work of architects, as we will illustrate, but is a concern for all kinds of built environment experts (in, e.g., acoustics, indoor comfort, sustainability, urban design and planning) whose decisions have profound impacts on people. The next section considers ten of the common questions that arise when inclusive design is considered in relation to the built environment. Fig. 2 gives an overview of the themes and questions addressed.

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Fig. 1. Sea bathing facility at the Portuguese coast, designed by Carlos Mourão Pereira. Top: section; bottom: collage; © Carlos Mourão Pereira.

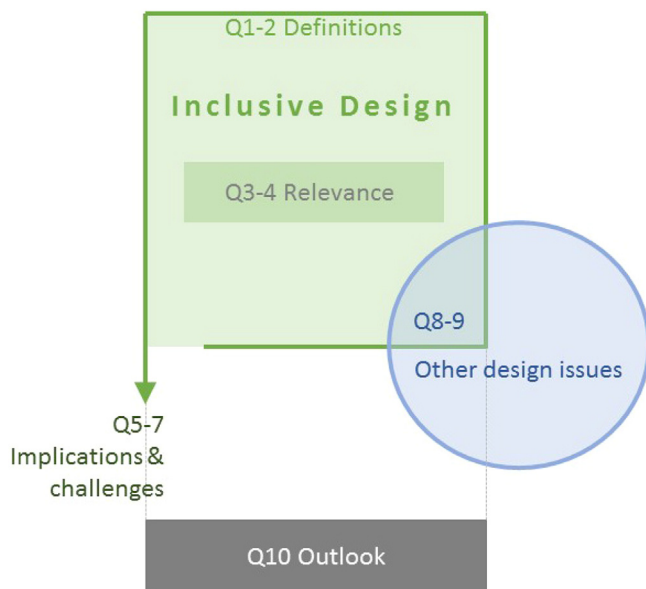


Fig. 2. Overview of the themes and questions.

- In order to shed some light on terminologies, we will start with a **definitions** section, providing built environment professionals and researchers with a compass to navigate different design approaches and their backgrounds. This section provides a state of the art on how inclusive design is understood (Q1) and how it distinguishes from related concepts such as design for special needs, accessible, user-centred and human-centred design (Q2).

- To offer built environment professionals and researchers insight into the 'why' and the 'why now', the **relevance** section explains how the notion of diversity includes all of us (Q3) and how inclusive design is of current interest in the light of participatory trends and changing demographics (Q4).
- Next, the **implications and challenges** section illustrates what inclusive design implies at different scales of the built environment (Q5), and discusses how its potential is currently challenged by built environments professionals' concerns about its added value (Q6) and the difficulties they face in putting inclusive design to practice (Q7).
- The subsequent section discusses how inclusive design relates to **other design issues**. Working with user/experts (Q8), for example, may hold the potential to tackle the perceived challenges. We also highlight the close relation with the sustainable design practices that built environment professionals are putting in place (Q9).
- The **outlook** section finally presents directions in which inclusive design can be fostered in the future (Q10), both in practice and education.

2. Ten questions (and answers) concerning inclusive design of the built environment

2.1. Definitions

Question 1: How is inclusive design defined and understood?

Answer: As mentioned, architects and other built environment professionals interpret the related concepts of inclusive design, universal design and design for all in multiple ways. These different interpretations should perhaps not come as a surprise, given the ways in which these approaches are portrayed in the literature.

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