



Alexandria University
Faculty of Fine Arts
Post-graduate studies
Décor department
Interior Architecture

**The Role of Interior Design and Technology in
Enhancing Space Performance of Sensory Architecture
for Visually Impaired People**

**(Application On Visually Impaired Special Education
Schools in Egypt**

Thesis submitted to the Décor department
Faculty of Fine Arts – Alexandria University
for the Degree of Doctor of philosophy in Interior Architecture

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Thesis Summary

In the first chapter of the study, the types of visual diseases and the role of cognition and response in defining basic senses, which focus on the design of interior designers and architecture in general, as well as the theory of this field and previous studies, were discussed.

It also identifies multi-sensory design and multi-sensory adaptive architecture that depends on this idea to use different senses in design to create an immersive interior space that creates a superior design experience by integrating the use of different senses, regardless of the vision behind perception in the architectural space or design space. as well as human factors affecting design. Neural architecture, a new design method focused on the human mind's perception of internal space, was also discussed and compared to multisensory architecture. At the end of the chapter, the importance of inclusive design and its qualitative role in serving persons with visual disabilities was presented in the design, and the theory was discussed in the first chapter.

In the second chapter of the study, design standards for educational buildings were published in general and especially for the visually impaired. Types of spatial orientation and location were also displayed in the interior space. The importance of colour variation and its use in design was also discussed, as were the determinants of the interior area of floors, walls and ceilings. As well as the finishing and finishing specifications of the internal space of the blind. This chapter refers to several applied models of global projects implemented on the ground by international designers, and by analyzing these models, the start of applied research work will be in chapter four.

The Third Chapter describes the fundamentals, types and examples of assistive technologies applied to visually impaired persons, how to integrate these technologies with the principles of smart schools and integrated technologies, human-computer interaction, and how to integrate new technologies such as virtual reality and augmented integrated reality to create an innovative and sophisticated educational environment that contributes to the development of the educational process. This chapter concludes by discussing the challenges and prospects for smart schools that meet the needs of blind and visually impaired people.

The fourth chapter of the study was the Implementation of the previous discussed studies in a proposed school design project for the visually impaired, through the proposed design, global standards were taken into account in the design and the principles of multisensory architecture were used in the design. The research project is located near Abis Education Area in Alexandria governorate, and the project was conceived with a land area of 2,500 square meters. The project consists of Two Levels ground and floor floors with the possibility of future multi-role work. During exposure, the type of material used within the educational space was discussed, as was the use of colour variation in space and the importance of spatial orientation for visually impaired people within the site.