

Sustainable Interior Architecture and Design

Subjects: **Architecture And Design**

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Sustainable Interior Architecture and Design (SIAD) is a holistic approach that reduces the negative economic, social, and environmental implications of design decisions, and takes into consideration the physical and psychological well-being of all users regardless of their abilities.

sustainability

interior environment

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Sustainable Interior Architecture

1. Introduction

The built environment contributes significantly to society's needs by improving the quality of life ^[1]. Nevertheless, the substantial increase in construction activities, along with the rapid urbanization occurring throughout the world, have induced concerns among practitioners, academics, governments, and the general public. As a result, the integration of principles of sustainability within the construction industry has been gaining much attention in recent years ^[2]. The idea of sustainability was first put forward by the World Commission on Environment and Development and is defined as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" ^[3]. Similar to other professions in the built environment, sustainability has also been embedded into Interior Architecture and Design (IAD) ^[4].

2. Interior Architecture and Design

IAD is primarily concerned with solving complex issues and handling the ever-changing requirements of the environment in which we live, work, and play ^[5]. The importance and influence of IAD is further amplified, given that people spend almost 95% of their time indoors ^[6]. The comfort variables—usually referred to as Indoor Environmental Quality (IEQ)—involve lighting, humidity, thermal comfort, airborne contaminants, airflow, acoustics, and ventilation, which were found to have a significant effect on occupants' health, satisfaction, and productivity ^[7] ^[8]. Moreover, previous studies have demonstrated that apart from IEQ, design characteristics of the interior environment similarly have a substantial impact on occupants' level of comfort, emotions, behaviors, performance, as well as their general physiological and psychological health and wellbeing ^[9] ^[10] ^[11] ^[12]. For instance, with respect to the impact of color, Cha et al. ^[13] found that participants immersed in a white colored virtual environment performed significantly better when completing a proofreading task, while the red color brought upon a tense and unpleasant emotion. Banaei et al. ^[14] ^[15] investigated the impact of interior forms on occupants' emotions and found

that curved geometries simulate a positive pleasure effect among the participants. Yin et al. [16] found that integration of greenery within the interior environment has restorative effects by reducing stress and anxiety.

3. Terminologies and definition

There are myriad terms used to describe the integration of sustainability with IAD. Among the most used terminologies are: Environmentally Sustainable Interior Design [17]; Sustainable Interior Design [18]; Green Interior Design [19]; and Sustainable Interior Architectural Design [20]. However, the above terminologies do not holistically reflect the nature of sustainability and the domain of IAD. For instance, the term 'Environmentally Sustainable Interior Design' has been adopted by many scholars and is defined as an approach that "focuses on materials' intended application, aesthetic qualities, environmental and health impacts, availability, ease of installment and maintenance, and initial and life cycle costs" [17]. As pointed out by Pilatowicz [21], for a long time, the efforts concerning the integration of sustainability within the IAD field revolved around resource conservation, specification of local materials, recycled contents, and energy-efficient lightings. Nonetheless, sustainability in IAD is a much broader notion that not only contemplates the impact of design decisions on the global environment, but also the physical and psychological impacts on occupants and everyone involved in a project, while endowing nourishing and multisensory experiences that go beyond functional and aesthetic needs [21].

Considering the sheer magnitude of the impact of design decisions as outlined above, it seems that focusing only on environmental aspects does not do justice to the holistic approach of sustainability. Besides, the term 'Sustainable' already entails the triple bottom line, and the addition of 'Environmentally' to the terminology seems unnecessary and rather baffling. Furthermore, within the academic community, when describing practitioners, the terms 'Interior Architect' and 'Interior Designer' are often used interchangeably. This is due to differences in professional designations in varying contexts. For instance, in Australia, the term 'architect' is protected by law and cannot be used to describe any other profession [22]. Therefore, the terminology must be inclusive for all contexts. To this end and with consideration to all the above-mentioned factors, a more holistic terminology 'Sustainable Interior Architecture and Design' (SIAD) is proposed and will be used for the purpose of this article.

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