



Keywords: Sustainable Architecture; Building Environments; Urban Spaces; Architectural Sustainability; Interior Design; Urban Planning; Community Livability; Smart Infrastructure; Architectural Services; Sustainable Architecture; Smart Cities; Public Design; Community Technology; Sustainability

Introduction

Architecture is a discipline that shapes the built environment, influencing how we live, work, and interact. As the world evolves, architectural practices must adapt to meet the challenges of a sustainable and technologically advanced future. This article explores the integration of sustainable design principles and smart infrastructure into architectural practice, highlighting the importance of community livability and public design. The research is divided into several sections: [1] Introduction, [2] Sustainable Architecture, [3] Smart Infrastructure, [4] Community Livability, [5] Public Design, and [6] Conclusion. The article discusses the role of architects in creating environments that are not only aesthetically pleasing but also functional, resilient, and inclusive. It emphasizes the need for interdisciplinary collaboration between architects, engineers, and urban planners to address the complex challenges of modern urban development. The article also highlights the importance of public participation in the design process, ensuring that the built environment reflects the needs and aspirations of the community. The research is based on a review of current architectural practices and emerging technologies, as well as case studies of successful sustainable and smart infrastructure projects. The article concludes by emphasizing the need for a holistic approach to architecture, one that considers the social, environmental, and economic impacts of the built environment. The article is intended for architects, urban planners, and anyone interested in the future of the built environment.

Modern architecture is characterized by its emphasis on form and function, and its ability to create spaces that are both beautiful and functional. The integration of sustainable design principles and smart infrastructure into architectural practice is a key challenge for the future. This article explores the importance of sustainable architecture and smart infrastructure in creating a better built environment. The research is divided into several sections: [7] Research Methodology, [8] Results and Discussion, [9] Conclusion, and [10] References. The article discusses the role of architects in creating environments that are not only aesthetically pleasing but also functional, resilient, and inclusive. It emphasizes the need for interdisciplinary collaboration between architects, engineers, and urban planners to address the complex challenges of modern urban development. The article also highlights the importance of public participation in the design process, ensuring that the built environment reflects the needs and aspirations of the community. The research is based on a review of current architectural practices and emerging technologies, as well as case studies of successful sustainable and smart infrastructure projects. The article concludes by emphasizing the need for a holistic approach to architecture, one that considers the social, environmental, and economic impacts of the built environment. The article is intended for architects, urban planners, and anyone interested in the future of the built environment.

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C. *Chlorophyll a* and *Chlorophyll b*

The chlorophyll content of the leaves was determined using a spectrophotometer. The absorbance of the extract was measured at 645 nm and 663 nm. The chlorophyll a and b concentrations were calculated using the following equations:

Chlorophyll a (µg/ml) = 12.7 (A₆₄₅ - A₆₆₃) + 22.9 (2A₆₆₃ - A₆₄₅)

Chlorophyll b (µg/ml) = 22.9 (A₆₄₅ - A₆₆₃) + 47.6 (2A₆₆₃ - A₆₄₅)

C. *Carotenoids*

The carotenoid content of the leaves was determined using a spectrophotometer. The absorbance of the extract was measured at 440 nm. The carotenoid concentration was calculated using the following equation:

Carotenoid (µg/ml) = 43.3 (A₄₄₀ - 0.175A₆₄₅)

The total chlorophyll and carotenoid content of the leaves were expressed as µg/g of fresh weight.

References

Chlorophyll and Carotenoid Content of Leaves. *Journal of Agricultural Science*, 1981, 86, 649-651.