

DESIGN OF RESIDENTIAL AND PUBLIC BUILDINGS WITH NEW MODERN BUILDING MATERIALS

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***Abstract:** The design of residential and public buildings has undergone major changes in recent years as new modern building materials have been introduced. This article explores the impact of innovative materials on the design and construction process of buildings. The article is structured using the IMRAD format and discusses the Introduction, Methodology, Results, and Discussion of the topic. The use of new building materials in residential and public buildings has brought significant improvements in building performance and aesthetics. The results show that there is an urgent need to adopt modern building materials in the construction industry to boost building durability, energy efficiency, and sustainability.*

***Keywords:** Modern building materials, residential buildings, public buildings, design, construction process, building performance, energy efficiency, sustainability.*

Introduction:

The design and construction of buildings have evolved over the years, and the challenges confronting the construction industry have increased. In response, new modern building materials have been introduced to address these challenges. These materials are an alternative to traditional materials, which have been used for centuries. Modern building materials have brought significant improvements in building performance and aesthetics, and the use of these materials has become increasingly popular in both residential and public buildings.

Methodology:

The methodology for this article involved conducting a literature review of various sources on the design of residential and public buildings using modern

building materials. The resources include books, journals and articles from academic websites, and other online sources. The reviewed materials provided insights into the benefits and challenges of modern building materials in both residential and public buildings.

Results:

The use of modern building materials in residential and public buildings has brought about numerous benefits. Firstly, these materials enhance the structural integrity and performance of buildings. They also improve the energy efficiency of the buildings, which results in reduced energy consumption and in cost savings. Additionally, modern materials can enhance the aesthetics of the buildings, providing architects with a much wider range of design options. Modern building materials also contribute to the sustainability of the buildings, reducing the carbon footprint, and minimizing the environmental impact of the construction industry.

Discussion:

The use of modern building materials presents some challenges. For instance, these materials may require specialist knowledge and skills in their installation and maintenance. The cost of some modern materials may also be higher than traditional materials, which may affect the affordability of the buildings. Thus, it is necessary to conduct a thorough cost-benefit analysis before selecting the most appropriate materials to be used. Another challenge is the need for architects and builders to collaborate effectively to ensure that the design and construction processes are optimized for the modern materials.

Conclusion:

In conclusion, the use of modern building materials has brought about significant improvements in the design and construction of residential and public buildings. Architects and builders have a wider range of materials and designs to choose from, and the buildings are more durable, efficient, and sustainable. The challenges of modern materials are outweighed by their numerous benefits if they are used appropriately. It is, therefore, important to ensure that the industry adopts

modern materials in a responsible manner that respects the environment, is cost-effective, and meets the needs of the people who live and work in the buildings.

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