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Environmental Engineering and Architectural Design

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Introduction

Environmental engineering is a professional engineering discipline that combines broad scientific disciplines such as chemistry, biology, ecology, geology, hydraulics, hydrology, microbiology, and mathematics to develop solutions that protect and improve the health of living organisms while also improving the environment's quality. Civil and chemical engineering are sub-disciplines of environmental engineering. Wastewater management, water and air pollution control, recycling, waste disposal, and public health are all addressed by environmental engineers. They create programmes to prevent waterborne infections and promote sanitation in urban, rural, and recreational areas, as well as municipal water supply and industrial wastewater treatment systems. They assess hazardous-waste management systems to determine the severity of such risks, provide treatment and containment recommendations, and draught legislation to avoid catastrophes. They use environmental engineering techniques [1].

Description

Human settlement design is an important aspect in managing carbon emissions, finite resource availability, ecological degradation, and climate change. Architectural education plays a critical role in promoting the principles and techniques that address these concerns. To generate graduates with holistic skills, including environmental knowledge relevant to sustainable design, new pedagogic paradigms are necessary. Although the successful integration of technical principles within creative design still confronts a number of pedagogic challenges, these competences are scheduled to become an obligatory part of professional architecture education in the UK [2].

The tiny sample size, for starters, limits the capacity to generalise the findings. A larger number of respondents should be included in future studies to gauge tool enjoyment. Second, it would be fascinating to measure the designers' interest in DSTs with better precision. Students in the design studio, unlike practitioners, were compelled to use specific tools to meet the design studio's educational goals, which could have led to a skewed impression of and usage of these technologies. Similar to professional activity, the academic framework of the study has its own restrictions (due dates, evaluation standards, DST learning curve versus semester duration, etc.) [3].

Several instances of biomimicry that focuses on reducing GHG emissions can be classified into three groups. The first strategy is to replicate the efficiency with which live organisms and systems transform materials and energy in ways that are less resource intensive than what humans do. The motivation is that being more energy efficient means burning less fossil fuel and emitting fewer greenhouse gases emitted into the environment. The second strategy is to develop new energy production methods to reduce human reliance on fossil fuels. As a result, extra GHGs will not be released. The third approach is to look to the living world for examples of how creatures or processes within them can function carbon sequestration and storage it is possible to imitate this [4,5].

Conclusion

Summer temperatures that are rising as a result of climate change are a source of concern for mid-latitude cities since they exacerbate the UHI phenomena and diminish building interior thermal comfort. Architects and urban designers are critical players in the implementation of specific climate change adaption strategies. Their actions, whether made at the city or building scale, can help reduce the UHI effect or boost a building's passive cooling capability. Adaptation measures' success, however, is contingent on professionals' knowledge and abilities. The scientific literature on climate change adaptation is extensive and recent, but it is challenging to apply it to architectural and urban design practise. We reasoned that a DST focused on this topic would aid in knowledge improvement.

Conflict of Interest

None.

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