



Pharos University in Alexandria (PUA)

Faculty of Engineering

Department of Architectural Engineering

Enhancing urban landscape to mitigate the climate change impacts

A Research Project

Presented to the Department of Architectural Engineering

Faculty of Engineering, Pharos University in Alexandria

in the partial fulfillment of the requirements

Architectural Diploma Degree

(URBAN DESIGN)

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Abstract:

Urban landscape design plays a crucial role in mitigating and adapting to the impacts of climate change, as it directly influences the resilience of both natural and built environments. Climate change is altering weather patterns, increasing the frequency of extreme events like storms, floods, and droughts, and contributing to rising temperatures and sea levels.

In response, urban landscape architects are increasingly integrating adaptive strategies that enhance environmental sustainability, biodiversity, and human well-being. Key design approaches include the use of native and drought-tolerant plants, sustainable water management techniques such as rainwater harvesting and smart irrigation, and the creation of green infrastructure like green roofs, permeable pavements, and urban forests.

Additionally, designs that prioritize carbon sequestration, soil health, and habitat restoration can help combat the effects of climate change while promoting ecological balance. This explores how urban landscape design can be leveraged to create climate-resilient spaces, reduce carbon footprints, and restore ecosystems, highlighting the importance of adaptive, nature-based solutions in shaping the future of our cities. Ultimately, urban landscape design in the context of climate change must prioritize long-term sustainability, fostering environments that are both adaptable and restorative to ensure the well-being of future generations.