

| Description of the Lab's Role and Activities

The Environmental Design Lab (EDL), housed within AASTMT, serves as a multidisciplinary platform dedicated to advancing research, innovation, and training in the fields of environmental architecture and urban design. The lab provides a wide array of services including workshops, seminars, and lifelong learning courses for students and professionals. It supports academic and applied research through the leasing of environmental analysis tools, laser cutting, and 3D printing services. Beyond its educational mission, the EDL is actively engaged with governmental bodies and private enterprises, offering research-based consultancy, GIS training, and tailored proposals to address pressing urban and environmental challenges. As it grows, the EDL is set to become a national hub for GIS-based environmental design data and a leader in sustainable design solutions.



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Arab Academy for Science, Technology & Maritime Transport
ENVIRONMENTAL DESIGN LAB (EDL)



| Project Partners



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| Thematic Focus

The EDL is aimed to be a centre for fostering innovative environmental design thinking, to be implemented in Architecture, Urban Planning and Design, and Interior Design. The EDL aims to foster evidence-based design through providing students and researchers with various tools and equipment for data gathering, data synthesis and simulation. The thematic focuses of the EDL, include the following topics:

- Sustainable Architecture
- Sustainable Urban Planning and Design
- Climate-responsive Architecture, Urban Design and Interior Design
- Sustainable Urban Mobility Planning
- Smart and Intelligent Urbanism
- Human-centric approaches to Architecture, Urban Planning and Design

| Mission and Vision

Mission:

To advance knowledge and practice in environmental architecture and urban design by integrating research, innovation, and community-based methodologies into education, while providing high-quality training, tools, and services to students, professionals, and stakeholders.

Vision:

To become a national center of excellence in environmental design, serving academia, the public and private sectors through phased development, interdisciplinary collaboration, and impactful research addressing Egypt's urban and architectural challenges.

| Lab Equipment

General Computer Lab Equipment:

- 17x high-performance Desktop PCs (Intel Core i7) – PGL-funded
- 2x High-spec Laptops – Pre-existing
- Architecture visualization and modeling tools – Pre-existing

Modeling Equipment:

- 3D Printer : ELEGOO Neptune 4 MAX – PGL-funded
- Laser Cutting Machine – PGL-funded
- VR Headsets – PGL-funded
- 3D Cameras – PGL-funded
- 360 photo camera – PGL-funded

Environmental Sensing Equipment:

- Weather Station – PGL-funded
- Sound-recorder – PGL-funded
- Luxometer – PGL-funded



| Lab Photos

