

ESTABLISHED LAB UNIT PORTFOLIO

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1. AU ESTABLISHED LAB UNIT PORTFOLIO: CT LAB

This report offers a comprehensive overview of the City Transformation Lab, Alexandria University. The lab was established in 2025 through Pro-green labs.

1.1. Aims, Mission Statement and Scope of Interests

The **City Transformation Lab** is an interdisciplinary platform that supports applied research, innovation, and training in the fields of architecture, urbanism, heritage conservation, and environmental design. As cities in the Global South face unprecedented ecological, spatial, and social challenges, the CT Lab seeks to reimagine urban futures through integrative and context-sensitive approaches.

AIMS: The CT Lab seeks to:

- Promote interdisciplinary research that contributes to the development of resilient and inclusive urban environments.
- Support documentation, conservation, and adaptive reuse of cultural heritage assets in rapidly changing urban contexts.
- Enhance education and capacity building in architecture and urban design through hands-on workshops and practice-based learning.
- Encourage knowledge transfer and innovation by connecting researchers, students, and community stakeholders.
- Serve as a catalyst for sustainable urban development through strategic partnerships and academic exchange.

MISSION: Our mission is to foster a dynamic and growth-oriented environment that motivates esteemed professional researchers and practitioners from diverse architectural and urban backgrounds to benefit from our facilities and academic activities. We are also committed to supporting young and undergraduate architects and researchers, guiding them in clearly and confidently shaping their career paths. By focusing on mapping and urban studies, Cultural Heritage Preservation, and environmental studies and materials, we aim to advance innovative research and promote interdisciplinary collaboration.

VISION: We aspire to the CT Lab to be a leading research hub for urban and architectural innovation and academic excellence. Our goal is to adopt interdisciplinary collaboration, inspire critical thinking, and advance sustainable urban solutions. We aim to preserve cultural heritage, enhance environmental resilience, and create sustainable urban environments. We are committed to engaging with the local community to ensure our research has practical benefits and supports urban development.

1.2. Hard Capacities of the City Transformation Lab

This section outlines the **hard capacities** of the **City Transformation Lab** at Alexandria University. These include physical infrastructure, equipment, and software assets that support the Lab's operations, research activities, and academic engagement.

1.2.1.Venue

The **CT Lab** is located on the first Floor of the Department of Architecture, **Faculty of Fine Arts, Alexandria University**, as a part of educational section of the department beside the department library. The space is designed to encourage innovation, interaction, and flexible use for both individual and group work.

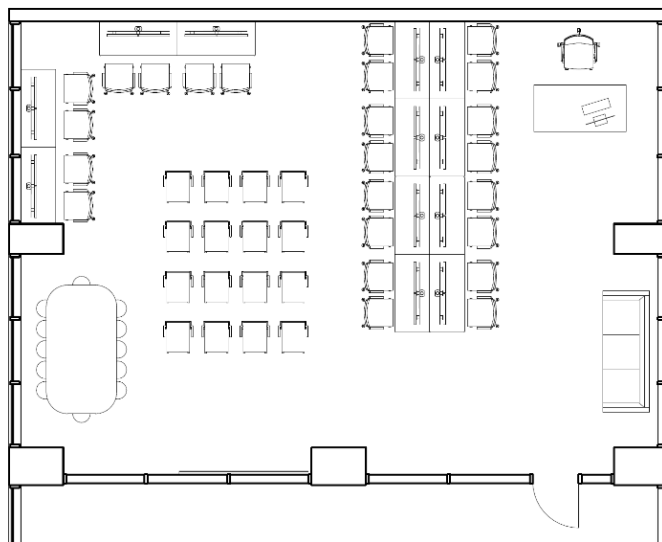


Figure 1: The CT Lab Plan

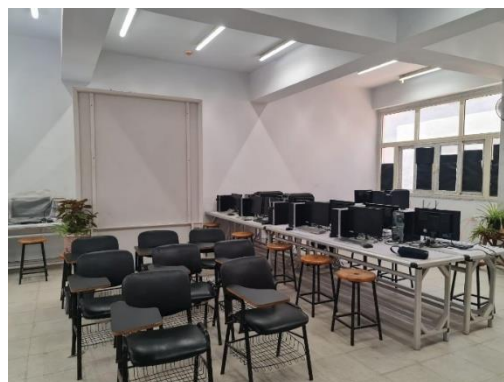
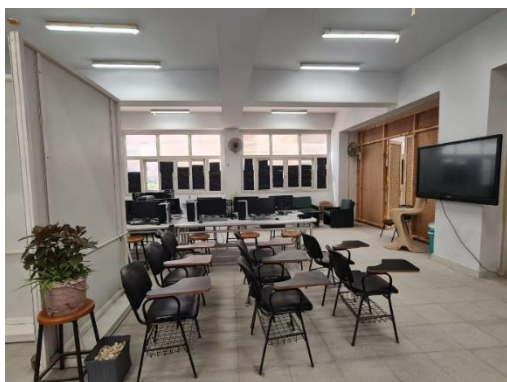
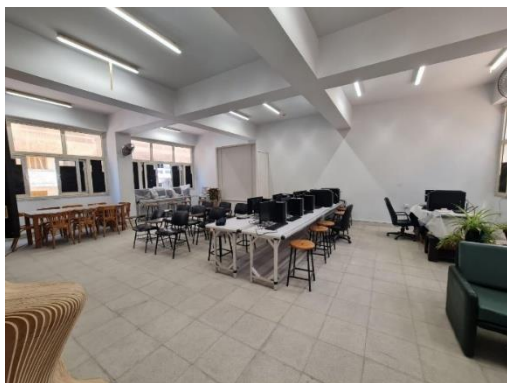


Figure 2 : Photos of CT Lab Venue

1.2.2. List of Equipment and Software

The establishment of the CT Lab marks a pivotal step in advancing interdisciplinary research, sustainable urban innovation, and experimental learning environments. The lab is equipped with a diverse range of tools and technologies that facilitate cutting-edge exploration across architecture, planning, and urban media. The following inventory showcases the specialized resources available within the lab.

Table 1: List of Equipment & Software Applications

NAME	MODEL
COMPUTATIONAL INFRASTRUCTURE	
15x Desktop PC	
3x Work Stations PC	
5x GIS Software	ESRI ArcGIS Pro
Photogrammetry Software	AgiSoft Metashape
PRINTING AND DOCUMENTATION TOOLS	
A3 Printer – Scanner - Copier	Laser Printer, Scanner, and Copier
A3 Printer – Scanner - Copier	Laser Printer, Scanner, and Copier
PRESENTATION AND VISUALIZATION EQUIPMENT	
2x Projector	Projector Full HD
Projector	Projector Full HD
VR Mask	
ENVIRONMENTAL AND MONITORING TOOLS	
Universal IAQ instrument	Testo 440 with CO ₂ + Lux + Vane probes
U-Value Measurement Kit	Testo 635-2 Thermohydrometer set
Thermal Camera	Testo 865s - Thermal imaging camera
3x Data logger	Testo 174 H - Mini data logger for temperature and humidity
2x People Counter	Pearl Wireless People Counter
2x Handheld GPS	
Laser Meter	Bosch
MEDIA AND RECORDING EQUIPMENTS	
Camera	Canon 6D Mark 2
Sound Recorder	H1n
FABRICATION TOOLS	
3D Printer	Prusa MK4 3D

	Equipments already exist
	Purchasing in progress

1.3. Soft Capacities of the CT Lab

This section describes the **soft capacities** of the City Transformation Lab, with a focus on its human resources, organizational structure, and collaborative working culture. These capacities are essential for sustaining the Lab's operations, implementing projects, and engaging with academic, governmental, and community stakeholders.

1.3.1. Administrative Hierarchy of Staff

The CT Lab operates under a well-defined administrative hierarchy designed to ensure effective governance, research excellence, and operational efficiency.

At the **top of the hierarchy** is the **Scientific Committee**, composed of two to three senior academic staff members. This committee sets the strategic direction of the lab, oversees its academic integrity, and ensures alignment with the broader goals of the Faculty of Fine Arts. It plays a central role in research agenda setting, evaluation, and fostering interdisciplinary collaboration.

Directly below the committee is the **Lab Manager**, who supervises the lab's daily operations, maintenance, and compliance with safety and academic standards. The Lab Manager acts as a bridge between strategic oversight and technical execution.

Reporting to the manager is **three Heads of Fields**, each responsible for one of the lab's core domains: Environmental Studies and Materials, Mapping and Urban Studies, and Cultural Heritage Preservation. They guide specialized research, support academic integration, and manage field-specific resources and collaborations.

Each Head of Field is supported by a **Specialist** who assists in daily lab operations, offers technical support, and ensures equipment functionality and safety.

Working alongside the specialists are the **Technical Staff**, who provide hands-on assistance in equipment setup, maintenance, and student training. They also help enforce safety standards and manage lab inventories.

To ensure administrative efficiency, a **Lab Admin Officer** manages user reservations, documentation, and communication, acting as a key liaison between users and lab staff.

Lastly, the **Business Developer** plays a strategic role in expanding the lab's external partnerships, promoting its services, and generating revenue through client acquisition and contract management.

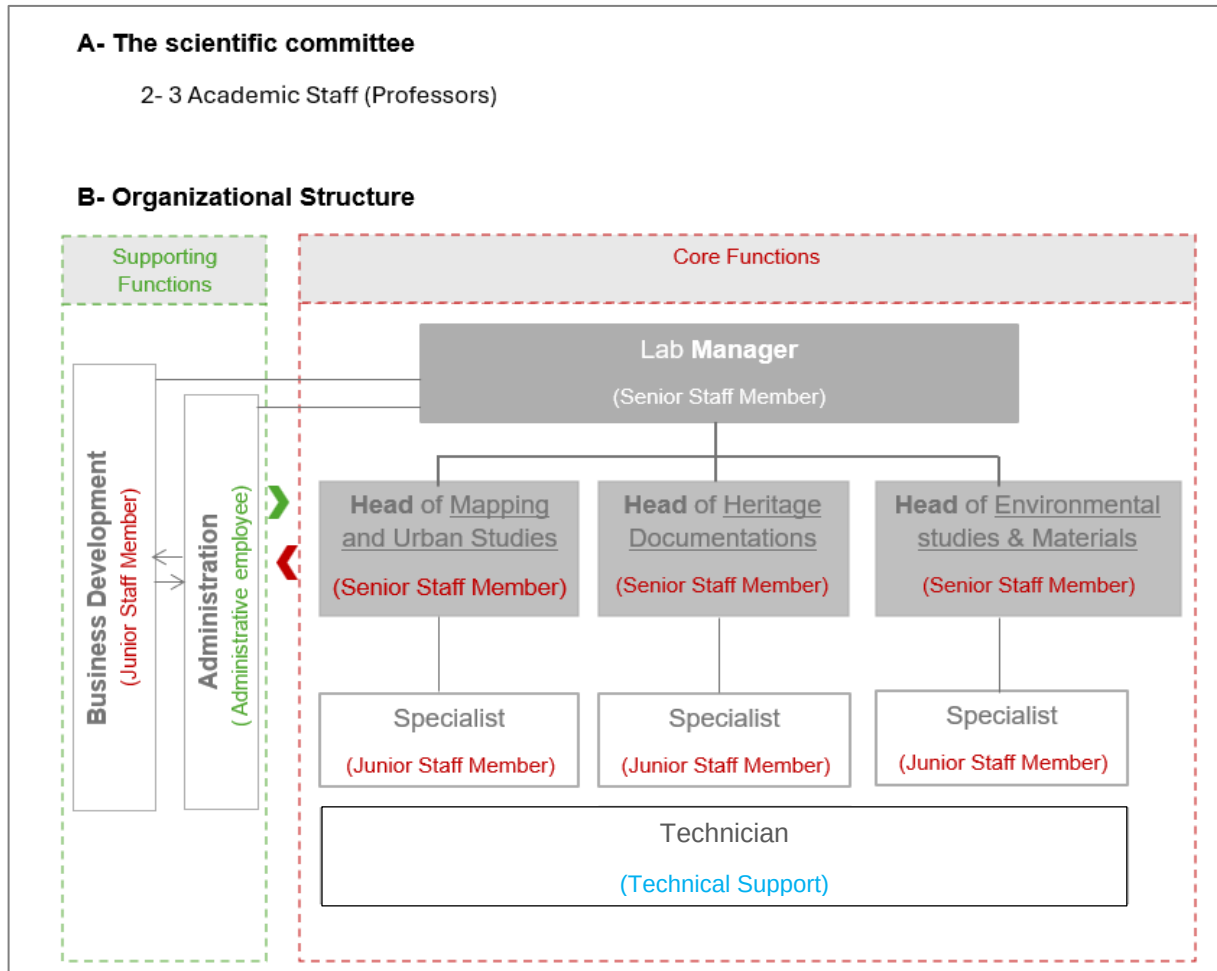


Figure 3: The Organisational Structure of the CT Lab, Alexandria University

1.3.2. Communication Channels and Contacts

The CT Lab, Alexandria University, has established a strong online presence by creating dedicated social media pages. These platforms serve as a vital tool for sharing the lab's activities, research, and projects related to City Transformation and architecture.

LinkedIN: CT Laboratory

<https://www.linkedin.com/in/ct-laboratory-849922364/>

Facebook: CT Lab – City Transformations Lab

<https://www.facebook.com/profile.php?id=61557639250483>

Instagram: citytransformations.lab

<https://www.instagram.com/citytransformations.lab/>

CONTACT PERSONS:

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1.3.3. Partners (Academic and Non-Academic)



Figure 4: Academic and non-academic partners of the City Transformation Lab – Alexandria University

The CT lab at Alexandria University is founded on a collaborative ethos, actively engaging with academic and civic partners to advance inclusive urban innovation. These partnerships serve not only to strengthen the lab's research capacity, but also to foster mutual learning and cross-disciplinary exchange.

Academic Collaborations

CT lab has established strong ties with institutions such as Brandenburg University of Technology Cottbus-Senftenberg, Universität Kassel, Beirut Arab University, University of Jordan, and University of Duhok. Through joint research, pedagogical exchange, and interdisciplinary dialogue, these partnerships contribute to ongoing inquiries into sustainable architecture, urban morphology, and design-led regeneration.

Civic and Professional Engagements

The lab also works closely with non-academic entities, including CLUSTER (Cairo Lab for Urban Studies, Training and Environmental Research), to bridge academic exploration with on-the-ground realities. Such engagements provide valuable insights into local contexts and support the co-development of place-based strategies, allowing the lab to remain responsive to evolving urban challenges and civic aspirations.

1.3.4. Strategies for sustainability

This section describes the urban lab financial and governance strategies, and the framework created to ensure that both financial and governance efforts support long term sustainability.

Financial Sustainability Strategies

The CT Lab ensures financial sustainability through a multi-stream strategy integrated within the Faculty of Fine Arts' financial framework at Alexandria University. While it does not operate with an independent budget, it benefits from several coordinated funding sources. Core operations are partially supported through the faculty's annual budget and the Educational Services Fund, which contributes to resource development and maintenance.

To enhance self-sufficiency, the lab generates internal revenue through paid services, specialized workshops, and training activities. These funds are managed within the faculty's

treasury according to university financial regulations. The lab also partners with external institutions and industries via the faculty's Special-Purpose Unit, allowing it to receive and administer funds for collaborative initiatives.

Moreover, the lab may access funding from faculty-led research projects and externally funded grants aligned with its mission. This diversified financial approach not only secures operational stability but also enables the lab to expand its services and research capabilities while remaining compliant with institutional governance structures.

- Governance Sustainability Strategies

The CT Lab's governance sustainability is rooted in a comprehensive monitoring and evaluation framework that ensures accountability, continuous development, and strategic alignment with the Faculty of Fine Arts. Governance operates at multiple levels, starting with internal monitoring led by the Lab Manager, who oversees daily operations, safety, and technical implementation. Weekly coordination meetings with department heads, technical staff, and the business developer support operational efficiency and goal alignment. The Scientific Committee provides high-level academic and strategic oversight through periodic evaluations of research quality, academic integration, and ethical compliance. Stakeholder feedback is actively gathered from students, faculty, and external collaborators via surveys, focus groups, and consultations to refine services and user experience. Performance is assessed using qualitative and quantitative KPIs, such as research outputs, training hours, collaboration metrics, and revenue generation. An annual performance report, reviewed by faculty leadership, informs future strategic planning. For externally funded projects, the lab complies with international evaluation protocols, ensuring governance remains responsive, transparent, and impact-driven.

1.4. Integration of Teaching and Scientific Research within Lab

The CT Lab at the Faculty of Fine Arts, Alexandria University, serves as a cross-disciplinary platform that integrates teaching, research, and innovation. It is open to all academic departments within the faculty—including architecture, design, conservation, and urban studies—providing instructors with access to advanced equipment and specialized spaces to enhance their teaching methodologies through hands-on learning and experimentation.

Beyond its teaching function, the lab supports faculty-affiliated researchers in conducting applied and practice-based research, particularly in the areas of sustainable design, environmental performance, cultural heritage technologies, and digital mapping. This dual focus creates a synergistic relationship between education and research, ensuring that academic programs remain grounded in real-world applications and evolving scientific inquiry.

The CT Lab actively fosters collaboration with academic institutions, cultural entities, industry stakeholders, and governmental bodies, both locally and internationally. By mapping stakeholder interests and aligning them with the lab's research priorities, the lab facilitates joint research projects, co-developed courses, and experimental initiatives such as living labs—where theory meets practical implementation. This integrated approach positions the CT Lab as a dynamic hub where innovation, education, and public engagement intersect.