DEPARTMENT OF ARCHITECTURE AND INTERIOR DESIGN (DAID)

SCHOOL OF ENGINEERING AND ARCHITECTURE (SEA)

DAID FORUM FOR RESEARCH AND DESIGN SOLUTIONS
2025/2026, STUDIO IV, VOLUME 1

DESIGN OF UNIVERSITY CAMPUS STUDENT HUBS

Part 1: Precedent Studies









DEPARTMENT OF ARCHITECTURE AND INTERIOR DESIGN
SCHOOL OF ARCHITECTURE AND ENGINEERING
KENYATTA UNIVERSITY

DAID forum for research and design solutions,

2025/26, Studio IV, Volume I.

Design of University Campus Student Hubs.

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Part 1: Precedent Studies.

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Department of architecture and interior design (DAID) forum for research and design solutions,

Design of University Campus Student Hubs

Foreword

It is with great pride and genuine admiration that I present this documentation of the Fourth Year Architecture Design Studio. This book captures not only the final outcomes of the studio but, more importantly, the journey that led us there; a journey of exploration, persistence, creativity, and intellectual growth. Architectural education is never solely about the final drawing, model, or presentation. It is more about the process of questioning, experimenting, failing, refining, and ultimately discovering one's own architectural voice. Throughout this studio, our students demonstrated remarkable dedication to this process. Week after week, they engaged with ideas, challenged assumptions, and pushed the boundaries of their thinking to transform concepts into meaningful architectural proposals. As a studio master, lecturer, and mentor, it has been a true pleasure to witness the evolution of these projects and, more significantly, the growth of the students as designers. Each design presented in this book reflects not only technical development and spatial understanding but also the personal character, identity, and values of its designer. Architecture at this stage becomes deeply personal. It begins to reveal how each student sees the world and how they aspire to shape it. The studio explored complex questions about space, society, culture, and innovation. Students were encouraged to think critically about the role of architecture in responding to contemporary challenges while remaining sensitive to context and human experience. The outcomes documented here demonstrate their ability to translate ideas into thoughtful architectural solutions. This book therefore stands as a record of commitment, creativity, and resilience. It celebrates the collective effort of a group of emerging architects who approached their work with enthusiasm and determination. I am confident that the skills, insights, and confidence they have gained through this journey will continue to guide them as they move forward in their professional and academic paths. To the students: your passion, curiosity, and perseverance have been truly inspiring. It has been an honour to accompany you on this journey.

Dr. Rehab Elnaggar Hamdi,

Year Master Bachelor of Architectural Studies (BAS) IV, Architecture Design Studio.

Editorial note

Pedagogical Foundations of Architectural Inquiry

Intellectual curiosity and systematic inquiry serve as the fundamental components of creative pedagogy within academic institutions. The development of architectural imagination requires a synthesis of speculative exploration and rigorous, structured cognition, allowing designers to navigate complex possibilities within defined theoretical frameworks. This design potential is contingent upon the practitioner's ability to integrate contextual variables and analyse both regional and international precedents to achieve practical and theoretical depth.

Methodological Frameworks and Collaborative Innovation

The discourse examines the dialectic between creative autonomy and methodological constraint. By adhering to rigorous principles and established methodologies, the objective is to conceptualize habitable environments that are responsive to human activity and specific social requirements. This methodology emphasizes context-sensitive solutions that are deeply rooted in the academic learning environment. Furthermore, innovation is characterized not as an isolated achievement but as a collaborative process that is continuously informed by the socio-spatial dynamics and the specificities of a project's location and stakeholders.

The Design Studio as a Site of Synthesis

The pedagogical trajectory adopted here directs emerging designers through a comprehensive survey of historical analysis, site investigations, design philosophy and design resolution procedures. This curriculum culminates in the design studio, which serves as a primary environment for the refinement of concepts through iterative critique and rigorous analytical processes. Throughout this process, students engage in an evaluation of societal needs, cultural values, and spatial properties to produce design resolutions that balance technical feasibility with representational clarity. The final outputs are manifested through comprehensive annotated technical drawings and models, which serve as a formal record of the integrated creative and analytical process.

In this studio, we therefore explore the educational philosophy behind training future architects, emphasizing a balance between boundless imagination and structured methodology. The design studio served as a transformative space where students merge historical knowledge and site analysis to solve complex spatial problems. This approach prioritizes collaborative innovation and a deep sensitivity to the social and environmental context of every student's design solution. Ultimately, the work that is rendered in here outlines a curriculum that transitions from theoretical inquiry to the creation of tangible, functional sanctuaries. The goal is to produce designers who can synthesize artistic vision with the technical rigor required for real-world construction.

Prof. Arch. Paul Mwangi Maringa (PhD), CBS, FAAK, MKIP.
Studio Master BAS IV, Architecture Design Studio.

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Preface

Student Hub - Kenyatta University main Campus The Student Hub in a university campus is essential as it creates a central, inclusive space that fosters academic, social, and emotional well-being for students. It encourages collaboration, innovation, and community engagement by bringing together: learning support, recreational areas, wellness services, and social spaces under one roof. The hub enhances the campus experience, strengthens the sense of belonging, and supports student success beyond the classroom. It also reflects the university's commitment to holistic education and student-centred design.

1. **Project Overview**:

Design a multifunctional Student Hub within Kenyatta University campus that fosters collaboration, wellness, creativity, and interaction among students. The hub should act as a third place (outside class and dorms) and reflect inclusivity, sustainability, and student identity. The Student Hub should serve as a central, inclusive, and vibrant space for students. It must integrate formal and informal learning spaces, social interaction areas, wellness facilities, recreational zones, and cultural expression spaces. Flexibility, sustainability, and accessibility should be key design drivers.

This design studio focuses on the development of a Student Hub—a multifunctional, inclusive, and vibrant space designed to meet the evolving needs of students within the Kenyatta University campus. The project aims to explore architecture that promotes collaboration, well-being, identity, and sustainability.

2. **Project Aim:**

To design a multifunctional student hub that fosters interaction, academic support, well- being, and campus life engagement.

To create a user-centred, climate-responsive, and functional hub that enhances student life by integrating academic, social, and wellness functions.

The focus can be on flexibility, sustainability, and creating a strong sense of community within the campus.

- Promote interaction and community-building
- Provide spaces for academic support, socialization, and wellness
- Incorporate sustainable design strategies
- Ensure accessibility and flexibility

1. **Learning Objectives:**

- Strengthen spatial design skills through real-life needs.
- Engage with user research and participatory design.
- Respond to site-specific context and constraints.
- Develop sustainable and inclusive design strategies.
- Practice clear conceptual development from idea to form.

1. Functional Requirements:

- Informal lounges & collaborative workspaces
- Private reading and study areas
- Counselling & wellness rooms
- Multipurpose hall and/or events space
- Exhibition/display areas for student work
- Café & social zones
- Outdoor shaded seating
- Student support counters or offices
- Accessibility features (elevators/ramps/toilets) It's a multifunctional, inclusive spaces.

Proposed Spaces and Area Breakdown:

Space	**Approx. Area (sqm)**
Reception & Info Desk	30–40
Multipurpose Lounge	120–150
Co-working / Study Spaces	100–120
Quiet study zone	40–50
Group discussion rooms (2–3)	60
Innovation / Makerspace	80–100
Computer Lab / Digital Hub	60–80
Wellness Room (meditation, etc.)	30–40
Counselling & Support Offices	2 rooms @ 20 each
Café / Refreshment Area	100
Indoor Recreational Area	80–100
Outdoor Seating / Amphitheatre Variable Exhibition / Display Zone	40–60
Washrooms & Support Spaces	60–80
Student services and info centre, storage	30–40
Total Built Area Estimate:	**800–1000 sqm (can expand depending on student vision)**

Design Priorities:

Inclusivity: Accommodate diverse student needs and abilities

Flexibility: Adaptable spaces for different uses/times of day

Sustainability: Passive cooling, daylight use, water efficiency

Community: Enhance student identity, sense of belonging

Context: Reflect the university's character and local culture

Motto

Let this hub be more than a building—

let it become a heartbeat of campus life.

The design process for architectural design studio project: Student hub as a third place

A Hub for Minds in Motion

The aim of the design studio was to design a multifunctional student hub that fostered interaction, community-building, socialization, wellness and wellbeing, academic support, and campus life engagement. The hub was to be user-cantered, climate-responsive, and functional, enhancing student life by integrating academic, social, and wellness functions. Emphasis was to be placed on flexibility, accessibility, sustainability, student identity and creating a strong sense of community within the campus, in sum, incorporating sustainable design strategies. In this way, the hub was act as a third place outside the class and residence. This is in reference to the concept of a ***Third Place*** from Ray Oldenburg (1989)- *The Great Good Place*, referring to spaces outside home (first place) and work/study (second place) where people gather, socialize, collaborate, and relax. As a consequence, the learning objectives included strengthening spatial design skills to deal with real-life needs by responding to site-specific context and constraints and user research and participatory design strategies. This was also to involve clear conceptual development from idea to form towards developing sustainable and inclusive design strategies. Correspondingly, the Design Priorities were **Inclusivity** (to accommodate diverse student needs and abilities); **Flexibility** (to adaptable spaces for different uses/times of day); **Sustainability** (to emphasise passive cooling, daylight use, water efficiency); **Community** (to enhance student identity, sense of belonging) and finally the **Context** (to reflect the university's character and local culture).

Processes, Phases and Deliverables

The prescribed project timelines were as follows:

- Week 1–2: Precedent studies, Site visit, analysis and mapping
- Week 3–4: Concept and Form development
- Week 5–6: Space programming, schematic design
- Week 7–10: Design development, presentation drawings & models

These timelines were more or less adhered to the students, the expected back and forth especially after design crits, pinups or discussions that necessitated relooking at some steps.

As a consequence, the design process for designing the Student Hub as a Third Place followed a systematic sequence of stages that helped transform the initial ideas into developed architectural proposals, following a structured design process that moves from understanding the problem to producing optimum final solutions, that adequately respond to student needs, site conditions, functional requirements and more importantly bring out the desired concepts and meanings. Therefore, the design process roughly and often cyclic with several iterations followed the steps as follows

WEEK 1–2: Precedent studies, site visit, analysis and mapping

Process No.01: Project Introduction, Understanding, Brief and Problem Definition

The purpose and meaning of the Student Hub were clarified, discussed and agreed upon. These activities in this stage included understanding what a Third Place meant for students, understanding the purpose of the Student Hub, identifying the target users (students, staff, visitors), defining project objectives and expectations and establishing the scope of the project. The students also identified and defined the key activities of the hub inclining social interaction, relaxation, food and drink, refreshment, worship, events, exhibition, collaboration, and sometimes studying. Hence the outputs in this stage were: The Project goals and objectives, the Design Brief, the key spatial requirements and the initial project statement, defining the "why," "what," and "who" of a project, outlining goals, target audience, scope, and key deliverables. The aim was to align and bridge to targeted user needs with the proposed design solutions.

Process No. 02: Research Literature Review and Precedent Studies

The students researched on similar projects, theoretical concepts and background information relevant to student hubs with the aim of building theoretical knowledge and design inspiration. The focus included characteristics of successful third places such as accessibility, comfort, flexibility and inclusivity. The case study and precedent analyses focused on analysing existing student hubs and similar buildings to learn from real examples: spatial organisation, functional zoning, circulation patterns, architectural form, material use and the relationship with outdoor spaces. The focus was on student behaviour and campus life, informal learning environments, collaborative learning spaces and social spaces in universities. This involved the study existing student hubs, learning commons, informal campus gathering spaces, community spaces student union buildings, social and collaborative spaces, campus community interaction, community centres, student-centred and informal learning environments, both locally and internationally, as well as in the present and in the past. As such the key activities at this stage included study of books, articles, and journals; review of review existing student hub designs; and discussion with experts, students, and staff. Hence, the key expected out puts at this stage were a demonstration of conceptual understanding of student spaces and key design principles, case study diagrams, strengths and weaknesses of precedents, and lessons learned leading to design principles and key ideas that would inform the project.

Process No. 03: Site Analysis

The students examined and analysed the physical and social conditions of the project site. The key factors analysed included location within campus, accessibility and circulation and pedestrian flow, climate (sun, wind, rain), topography, noise levels, activity zones, existing buildings and landscape, as well as views and surrounding buildings. Some of the analysis tools employed were site maps, sun path diagrams, wind analysis, pedestrian flow mapping, and circulation diagrams. The main output was the opportunities and constraints map that would guide to project to the end.

Process No. 04: User Analysis and Needs Assessment

The students sought to understand who will use the hub and how. This involved the use of surveys and questionnaires, interviews with students, staff and visitors, as well as observation of campus activities. These included needs associated with quiet study spaces, group collaboration zones, social gathering areas, event and activity zones, food and café spaces, individual study areas, indoor and outdoor relaxation spaces. The outputs included user personas and profiles, user needs, activity patterns, activity diagrams, spatial needs list. More importantly the students were encouraged to look at the user as themselves, asking themselves what space would meet their own individual needs in a ‘Third Place’, and then go ahead and design it.

Week 3–4: concept and form development

Process No. 05: Space Programming or Program Development

The students translated the above user needs into architectural spaces and approximate sizes. For example, the need for informal interaction for 50 students at a time calls for a space called as social lounge of 100 square metres, and the need for group works calls for collaborative rooms among others. Hence the out puts include space schedules, area requirements, and functional relationships.

Process No. 06: Concept Development

The students developed design ideas that expressed the Third-Place concept that incorporated their own personal views, outlooks and design philosophies that would comprise the main central design ideas that would guide their projects to the end. The concepts focused on included collaboration, connectivity, flexibility, community interaction, community/campus living room, Interactive learning environment, learning landscape, open and flexible social hub, Indoor–outdoor social space. The tools used, which are the same as the outputs included concept sketches, diagrams, and design statements, including conceptual drawings that incorporated all the previous processes.

Process No. 07: Spatial Organization and Zoning

The students organized the spaces according to activity types and levels. These included quiet zones for individual study, semi-active zones for collaboration and group work, active/social zones for relaxation and interaction such as café and events, as well as private, semi-public and public spaces. The tools and outputs included bubble diagrams, functional zoning diagrams, and circulation drawings among others.

Process No. 08: Form and Massing Development

The students translated the spatial ideas into building form and architectural expression. The key considerations included relationship and integration to the site, landscape and context, building massing, the concept, openness and transparency, indoor–outdoor interaction, building orientation, natural lighting, indoor–outdoor connections, ventilation and air movement among others. The tools and outputs were the massing models, form exploration sketches, conceptual sections and 3D studies and 3D conceptual models.

Week 5–6: space programming, schematic design

Design Development

In this stage the designs and the architecture were refined into more detailed architectural drawings. the focus was on utility, aesthetics, interior layout, structure and structural systems, materials and façade design, landscape integration, environmental sustainability strategies, lighting and ventilation, furniture and interior design. The typical tools, outputs and deliverables included floor plans, sections, elevations, detailed diagrams, 3D visualizations and physical study models.

Week 7–10: design development, presentation drawings & models

Process No. 10: Final Presentation

After several induvial desk crits, group crits, discussions, presentations and pinups, the students produced drawings that communicated the designs with acceptable clarity and detail, that communicated satisfactorily the completed designs clearly and professionally. The tools and outputs included firstly a presentation the outcomes of all the previous process such site analysis, needs assessments, concepts and others in a more distilled refined and concise manner. Hence the deliverables were as follows:

- Site analysis and user research documentation
- Design concept statement and diagram

These were followed by the final outputs typically comprising design narratives explaining the concepts etc, site plan, master plan, floor plans, sections and elevations, 3D renderings or visualizations, physical and digital models, design narrative and design reports. Hence the deliverables were as follows:

- Plans, sections, and elevations, landscape (to scale)
- 3D perspectives and renderings that showcase the interiors / digital or physical model
- Final presentation board and verbal presentation
- Technical Drawings/ Details: Develop technical drawings / construction details.
- Sustainability Plan: Outline sustainable design strategies and technologies incorporated into your project
- Presentation: A comprehensive presentation that communicates the whole journey

Evaluation Criteria for the final design included clarity of design concept, responsiveness to user needs, site and environmental integration, technical resolution and creativity, graphic communication and presentation quality. Among several other principles, the design process and evaluation criteria was generally guided by the Vitruvian Triad of '*Firmitas, Utilitas, Venustas' or* Firmness, Commodity, and Delight; three core principles of architecture defined by Vitruvius dictates that state that a structure must be strong, functional, and beautiful to be truly successful. Firstly, the structural integrity and durability of a building was to be clearly demonstrated through a clear efficient practical and buildable structural system. Secondly, the design was to serve its purpose effectively, be user-friendly, and with efficiency of space. Thirdly, the aesthetic quality, proportion, and visual harmony, was to provide pleasure and emotional impact to the users.

In conclusion, while the design process followed the above ten sequential processes, the process was not liner by any means. There were numerous overlaps and back and forth, with the designs having several iterations towards the improved final solutions. For example, several students we still refining their concepts and forms in the Eighth week (week 8) even as they worked on design development, and final presentation drawings and models. Importantly the student became more aware of the fact that Architectural Design is not a liner process following a straight programme, but a **cyclical** iterative process that eventual moves towards more optimum and desired solutions for the problems at hand.

Part 1:
Precedent Studies

Chapter 1:
Guiding considerations and procedures for the precedent studies

To carry out precedent case studies in architecture, practitioners and students were guided to follow a structured methodology that synthesised historical inquiry with contemporary design requirements, vis:

1. Objectives and scope

Integration of Wisdom: The primary objective is to illuminate new visions by drawing upon the lessons of international, regional and local precedents. These studies provide both practical and deep insights that inform the design process.

Balancing Imagination and Structure: Researchers must navigate the range of possibilities available in creative design, while remaining within measured confines of structured thought. In this they learn to ensure that creative exploration is supported by rigorous analytical frameworks.

2. Primary considerations

Contextual Sensitivity: A precedent study must clearly be founded on a recognisable context. It must account for the richness of the specific learning or physical environment.

Social and Cultural Values: To understand how a building serves its stakeholders and their lifestyles, analysis should review with balanced the blend of need, society and values.

Spatial Character: The character of space constitutes here the critical consideration. It is important to evaluate how spatial properties contribute to the overall design resolution.

Constructability and Representation: The study must evaluate the creative, innovating and imaginative constructability, that balances technical feasibility with the clear resolution of function.

3. Methodology

Historical and Site Analysis: The process begins with studying past antecedents and "wandering through diverse sites in order to understand the physical and temporal bedrock of a design.

Philosophical Grounding: Students should investigate the primary philosophical foundations of a design with an interest to understand the underlying concepts of the precedent.

Deep Analysis and Iterative Critique: The precedent study should involve deep probing analysis and iterative critiques. This in-depth approach enables the students to develop a deeper understanding of how successful designs are constructed.

Collaborative Engagement: Innovation in these studies is nourished by the essential collaboration of students working in ascribed study groups. Inter group studio reviews reveal the varying realities of the context (place and users) of each project. This suggests that precedent studies should not be performed in isolation, or by individuals but rather in and across groups. In this way, they can draw out a diversity of perspectives.

4. Documentation

Technical Synthesis: The findings of a precedent study are typically rendered through a collage of annotated drawings, photographs and models. The illustrations used provide a clear record of the integrated analytical and creative processes behind the designs.

Chapter 2: Reporting template for the precedent studies

1. Background of study

Name of the project.

Name of Architect/firm-insert photo.

Year of design.

Year of construction.

Architectural style and theories, philosophies, project intent and vision.

Area.

Capacity.

Cost

2. Analysis of design brief and functional library (the complete set of functions designed for).

3. Location and site context

Orientation to solar and wind path.

Access and approach.

Neighbourhood character.

Topography and terrain.

Development control guidelines: Plot ratio, plot coverage, building lines, zoning policy- external and internal (maser planning) zoning.

4. Design analysis

Analysis of site adaptation: Site layouts, open spaces, pathways, boulevards courts, edges, vegetation.
Spatial Organisation:
Hierarchy and clustering of spaces: Main spaces, secondary spaces (courtyard, atriums, balconies, terraces, verandahs, loggias, porches, alcoves, hallways) and servant spaces (corridors, service function spaces such as washrooms, cafeterias).
Privacy gradient.
Patterns of horizontal and vertical circulation.
User patterns.
Building services: HVAC, acoustics, fire safety, materials.
Building technology: Assembly and material.
Elevation/façade design: Solid, voids, fenestrations, materials & cladding.
Form and massing - elements and visual properties of form: Shape, scale, size, proportion, arrangement, orientation, visual inertia, solids, voids, surface treatment (colour, texture/surface treatment).
Structural order: Framed structures, tectonics, structural materials, post and lintel
Interior design: Colours,/hues-lighting-ambience, materials, texture furniture, volumes, levels.
Landscaping: Open spaces, pavilions,, pergolas, pathways, boulevards, water features

In summary here, also, answer the question: Does the facility and its spaces serve the intended purpose?

5. Sustainability and innovation: Passive design strategies, renewable energy.

6. User feedback

7. Strength and limitations

8. References

NOTE: In each section to conclude. With lessons learnt. A t the end of the precedent study, it is also necessary to reflect on consolidated or overall, lessons learnt too**.**

Chapter 3: Reflections on the lse Saw Swee Hock Student Centre, London, United Kingdom

The focus of discussion here is on a well analysed international, award-winning precedent of an architectural design project of a Student Centre and in its analysis that emphasises concepts and technical considerations.

B.A.S YEAR IV

Contributing student researchers and designers, 2025/26 academic year, group 1

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Michael Odhiambo
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INTRODUCTION

CASE STUDY ONE: EUROPE REGION

LSE SAW SWEE HOCK STUDENT CENTRE ,LONDON,UNITED KINGDOM

CONTENTS:

BACKGROUND INFORMATION

The LSE Saw Swee Hock Student Centre is a **7 storey** building that belongs to the **London School of Economics and Political Science (LSE)**. It is the university's **student union building**, named after Professor Saw Swee Hock.

Source:The Architect's Journal
Photograph by Alessio La Ruffa Photography

Client:The London School of Economics and Political Science (LSE)

Source:Advanced communities

Architecture Firm: O'Donnell + Tuomey Architects

Architects: Sheila O'Donnell and John Tuomey

Source:Dezeen
Photograph by Morley von Sternberg, 2015

Year of Design:2009

Construction Timeline: May 2011-December 2013

Cost: The total cost of the LSE Saw Swee Hock Student Centre was *£25.3 million*

Source:Archdaily
Photograph by Alex Band, 2014

Area: The building spans roughly **6,100 m²** of floor area across all its levels. and covers a ground area of **1780m²**

Users: The primary users are **LSE students** aged *18–30*, but the building also serves *staff, alumni, guest speakers*, and sometimes the *general public* through events and exhibitions.

Source:London School of Economics
Photograph by Denis Gilbert

Image showing the main users (students) around the building

Capacity:1,000–1,500 people at maximum capacity at any one time.

Area / Venue	Max Capacity
The Main Venue (The Venue)	1,050
The Three Tuns (Bar/Breakout Space)	200
Weston Café & Terrace	150
Weston Studio (Studio/Meeting Room)	70
Third-Floor Meeting Room	30

ARCHITECTURAL STYLES

1. Contemporary / Modernist with Brutalist influence

The building makes strong use of **exposed red brickwork** (instead of the raw concrete typical of traditional Brutalism), giving it a bold but warmer appearance.

The angular, faceted form and irregular massing break away from symmetry and create a **dynamic, sculptural quality.**

It emphasizes **functionality** — circulation routes, student spaces, and performance halls are expressed in the external form.

2.Deconstructivist tendencies

The irregular, non-orthogonal geometry, sharp corners, and fragmented form resemble elements of Deconstructivism

Its play of angles and planes creates a sense of movement and tension.

Source:O'Donnel and Tuomey
Photograph by Denis Gilbert, 2014

3.Sustainable & Contextual Modernism

Despite being radical, it responds to its historic London surroundings by using brick cladding, a material common in the neighborhood.

It integrates natural ventilation, daylighting strategies, and energy efficiency features — part of a contemporary sustainable design approach.

Source:O'Donnel and Tuomey
Photograph by Denis Gilbert, 2014

Image showing extensive use of exposes red brickwork

Source:O'Donnel and Tuomey
Photograph by Denis Gilbert, 2014

Image showing non-orthogonal geometry of the student centre as well as use of brick in surrounding buildings

Source:BREEAM
Photograph by Nigel Stead , 2015

Top view image of the student centre showing neighbourhood's extensive use of red brick

PROJECT INTENT AND VISION

To make a **vibrant, inclusive, sustainable** hub that expresses LSE's global identity and enhances student life.

*Student Hub;*Create a central place for students to meet, socialise, study, and join activities.
*LSE Identity;*Reflect LSE's international, modern, and socially engaged character.
*Enhance Student Life;*Improve wellbeing and campus experience with flexible, multipurpose spaces.
*Urban Integration;*Fit into London's dense urban fabric; use brick for context, bold form for modernity.
*Sustainability;*Achieve BREEAM "Outstanding" with natural light, ventilation, and energy efficiency.

PHILOSOPHY AND CONCEPT

The centre is a "**living lantern of student life**" — a building that *adapts, glows, and flows* with the dynamic, inclusive, and contemporary spirit of the LSE student community.

Key Aspects of the Design Philosophy

Contextual Sensitivity:
The building is conceived as an outcrop of the surrounding urban geometry, an extension of the city rather than a standalone icon.

Source: O'Donnel and Tuomey
Photograph by Denis Gilbert, 2014

Source: LSE website
photograph by Nigel stead

Image showing the student centre at night

Anti-Iconic Stance:
The design eschews grand architectural gestures, focusing instead on a remarkable unfolding of formal, spatial, and functional possibilities to create a democratic social environment.

Emphasis on Light & Air:
Perforated brickwork allows for both natural daylight to infiltrate the interior and for air to filtrate in, contributing to natural ventilation and a positive atmosphere.

Source: The Architecture Review by Kester Rattenbury
Photograph by Alex Bland

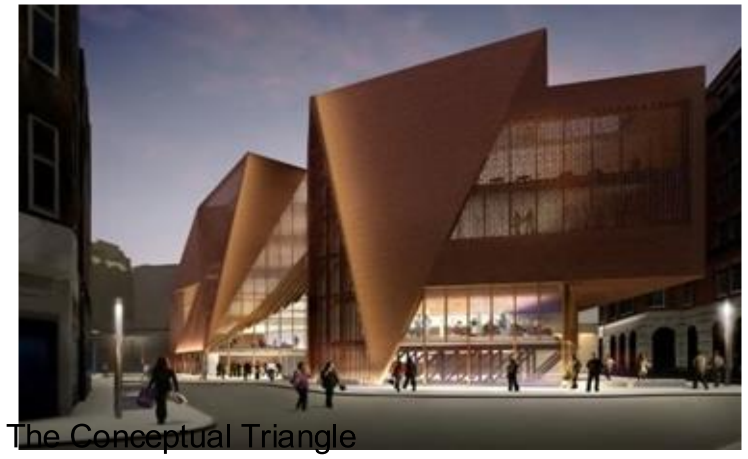
Image showing the perforated brick facades

Brickwork as a Defining Feature:
The building's facade uses brick in an open-work pattern to *filter light* and create a unique aesthetic, making the building appear like a glowing "**lattice lantern**" at night.

Source: The Architecture Review by Kester Rattenbury
Photograph by Alex Bland

Image showing the natural interior lighting

Adaptability of a Warehouse:
The internal spaces are designed to have the robust adaptability of a *lived-in warehouse,* with large spans and solid wooden floors.



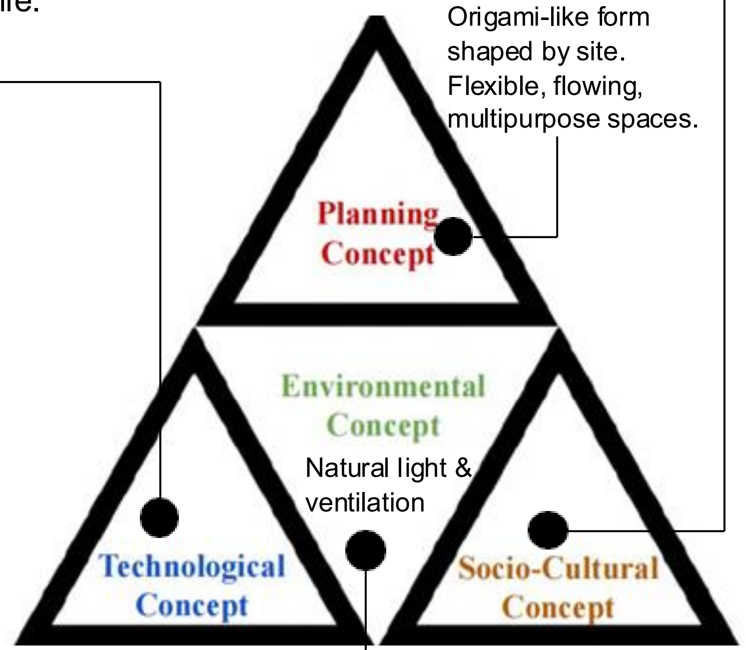
Source: BRE group

Geometric Extrusion:
The building's shape is a direct translation of the site's complex, angled geometries and surrounding streets, a process the architects describe as *"extruded from the geometries"* and acquired an **Origami** like building

Source: Manchester History

Image showing the complex geometries of the centre

Dynamic & Flexible Space:
The design features an unconventional arrangement of irregular floor plates, with space flowing freely in both plan and section, creating a lively, inclusive social environment for student life.



The Conceptual Triangle
Source: The relationship between imageability and form in architecture

ANALYSIS OF DESIGN BRIEF AND FUNCTIONAL LIBRARY

1. ANALYSIS OF THE DESIGN BRIEF

The design brief for the Saw Swee Hock Student Centre was to not merely to create a new building; it was to solve a fundamental problem for LSE

Core Problem to Solve

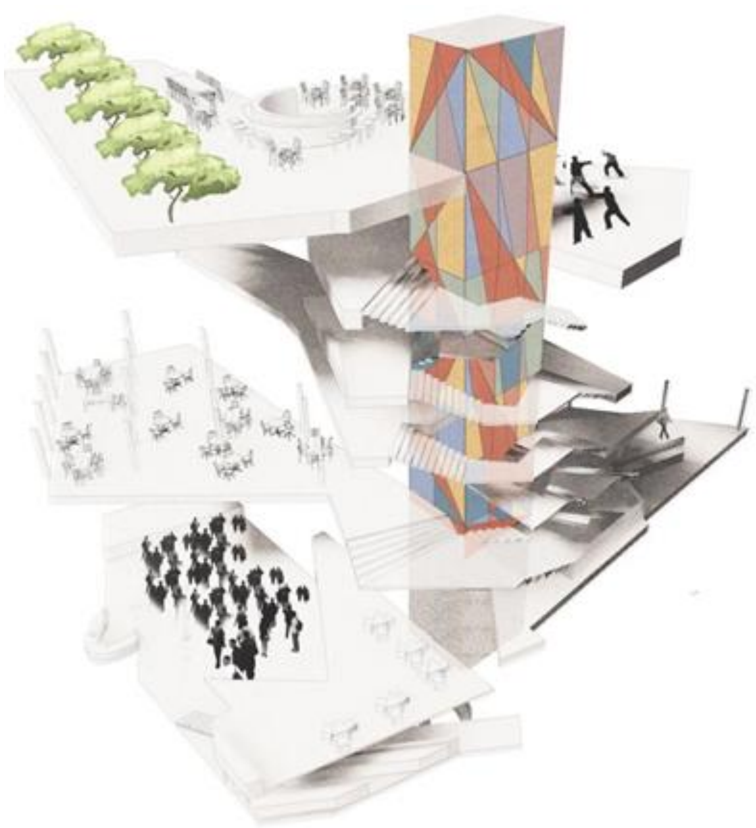
The **Social Deficit**: LSE was famously lacking a central dedicated social and extracurricular heart for its student body.The brief called for a building that would actively foster community.

Site Constraints:
The irregular tight and sloping site was a major driver of the design. The brief demanded a dsign that could turn this into an opportunity,creating a building that could fit seamlessly into its urban context

Source:Arketipo magazine 2020 :Planimetria
Credit:O' Donnell + Tuomey Architects

Functional Demands:
Bring together the disparate functions of the Student`s union
Maximize the use of the small site by thinking vertically creating a vertical village of student life.
Flexibility to accomodate a wide range of activities.

Sustainability Mandate:
LSE required a building that would be a benchmark for environmental design, aiming for the highest possible sustainability certification(which it achieved with BREEAM Outstanding)



Source: Arquitectura Viva 2016: Vertical circulation of the LSE student centre
Credit: Alex Bland

Symbolic & Aesthetic Goals
Identity- create an iconic,forward-looking building that that wpould become a new symbol for LSE and its student community. Materiality- respond to the historic context of london(brickwork) in a contemporary and innovative way.

Source:Dennis Gilbert, 2015: perforated brick facade

1. ANALYSIS OF THE FUNCTIONAL PROGRAMME

The building's functions can be understood as a vertical stack of complementary and contrasting activities, carefully organised to mitigate noise and operational conflicts.

Source: Architectsjournal 2019
Credit: O'Donnell + Tuomey

The building was designed as a "**vertical village**" to consolidate all student union activities into a single, multifunctional hub

Basement (-1): The Heartbeat
Primary function: The venue(night club/ Event Space).Located in the basement to contain noise and vibration.

Ground Floor (0): The Welcome Mat
Reception, Cafe, Public Interface
Has a fluid connection between inside and ouside through transparent glazing

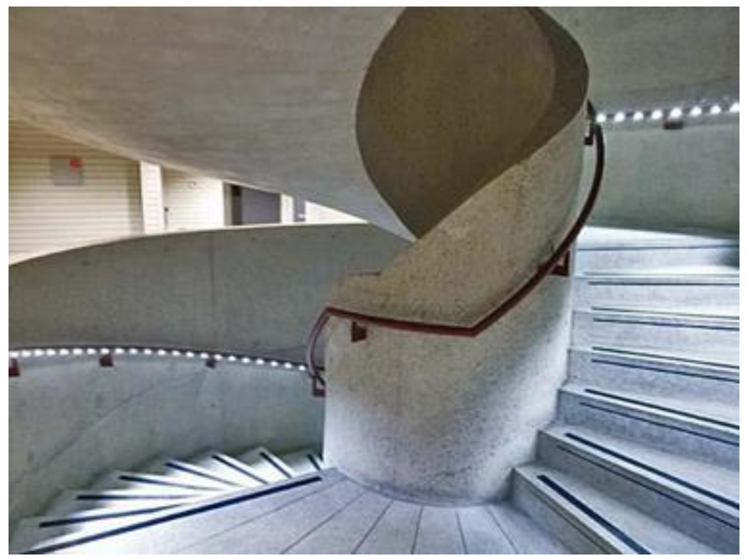
Middle Floors (1-4): The Hubs of Activity
Functions: Students' Union Offices, Media Centre, Society Spaces, Meeting Rooms, Dance Studio, Gym

Upper Floors (5-6): The Quiet Zones
Library and Quiet Study Areas, Faith Centre
Strategically placed furthest from noise of the street and the basement nightclub.

How Design Meets The Brief And Programme

1. Constraint as Catalyst
2. Vertical Zoning
3. The Brick Skin as a Multitool

4. Creating Community
The central atrium is the primary tool for fullfilling the core brief of fostering community



Source: APE blog 2014: LSE Saw Sweevhoch student centre spiral staircase. PHotograph: Dennis Gilbert

LOCATION & ACCESS

LOCATION

The buildings environmental performance was core design driver, integration....

THE UNITED KINGDOM[UK]

THE UNITED KINGDOM[UK]

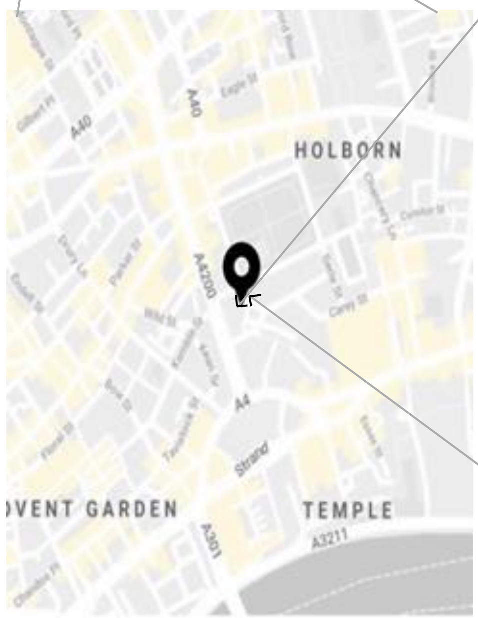
is made up of

ENGLAND
SCOTLAN
D WALES
NORTHERN
IRELAND

Englalnd capital:

LONDON

Holborn is in central London, UK, in the Borough of Ca mden



ORIENTATION : SUNPATH AND WINDPATH

Sun Path: Holborn's 51.5°N latitude gives low winter sun (15°) and high summer sun (60°). The SAW's south-facing, perforated brick façade optimizes daylight, reducing lighting needs, while clerestory windows light the basement.

Wind Path: Westerly winds (4–6 m/s) are diffused by urban surroundings. The recessed entrance and natural ventilation harness airflow

Building Response: Angled façade and roof photovoltaics balance solar gain; ventilation ensures comfort, achieving BREEAM Outstanding.

The Saw Swee Hock Student Centre in Holborn, London, sits in the Strand Conservation Area, near Kingsway, Aldwych, and LSE's campus, surrounded by academic, legal, and cultural hubs.

NEIGBOURHOOD CONTEXT

LSE Campus (adjacent)

The academic hub drives the SAW's role as a 24/7 student center, with spaces like LSESU and study areas catering to 12,000+ students.

Lincoln's Inn Fields (0.3 km)

Legal hub increases pedestrian traffic, influencing the SAW's accessible, step-free entrance.

Royal Courts of Justice (0.4 km)

Busy road adds urban noise, mitigated by the SAW's perforated façade.

Covent Garden (0.5 km)

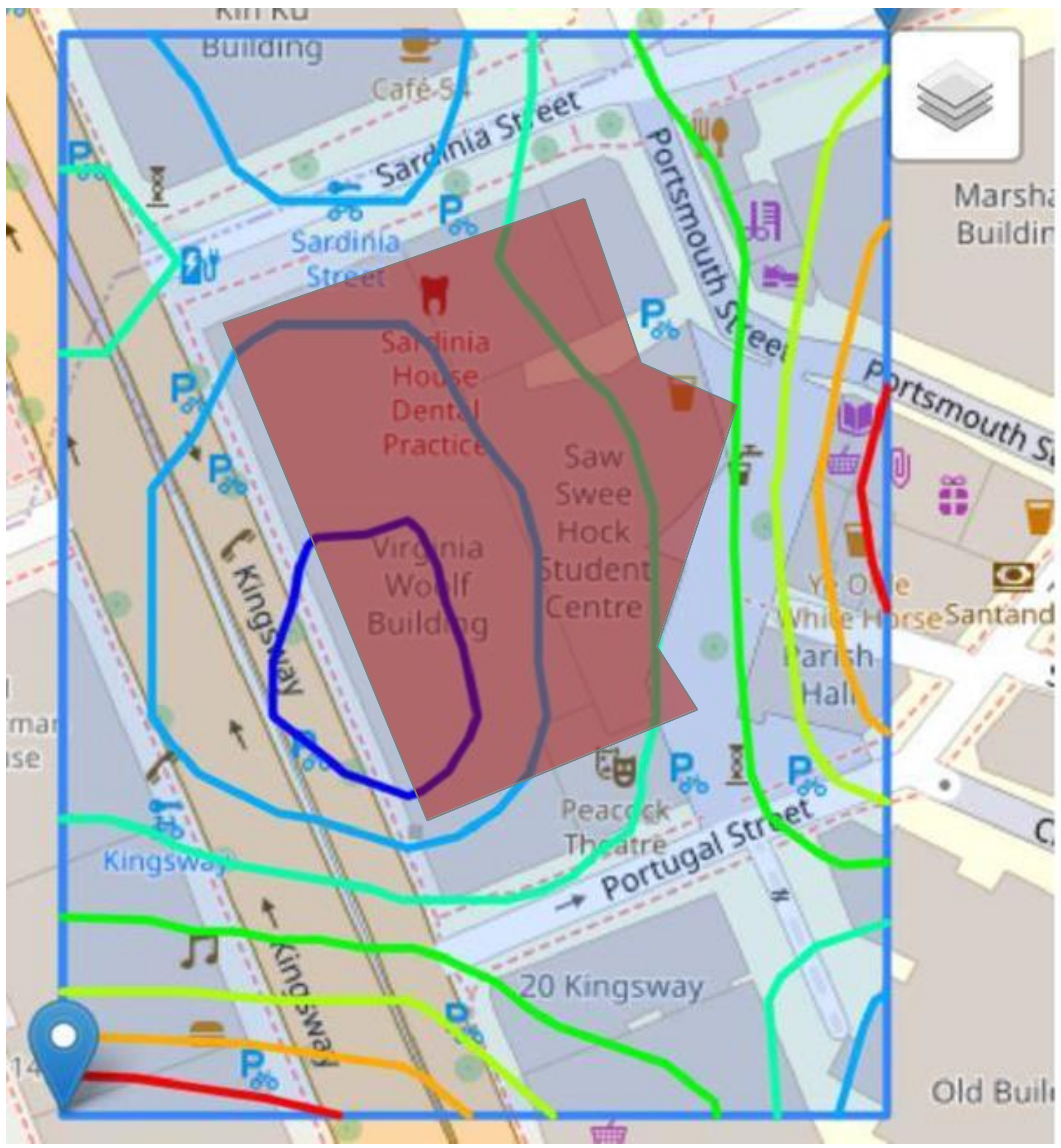
Legal landmark contributes to professional demographic, enhancing the SAW's inclusive design.

Kingsway (0.1 km)

Cultural hotspot boosts footfall, shaping the SAW's vibrant, public-facing ground floor

The World Turned Upside Down: A 13-foot inverted globe by Mark Wallinger, unveiled in 2019 outside the Saw Swee Hock Student Centre on Sheffield Street, Holborn. It flips the world, placing Antarctica at the top, challenging geographic perspectives.

TOPOGRAPHY



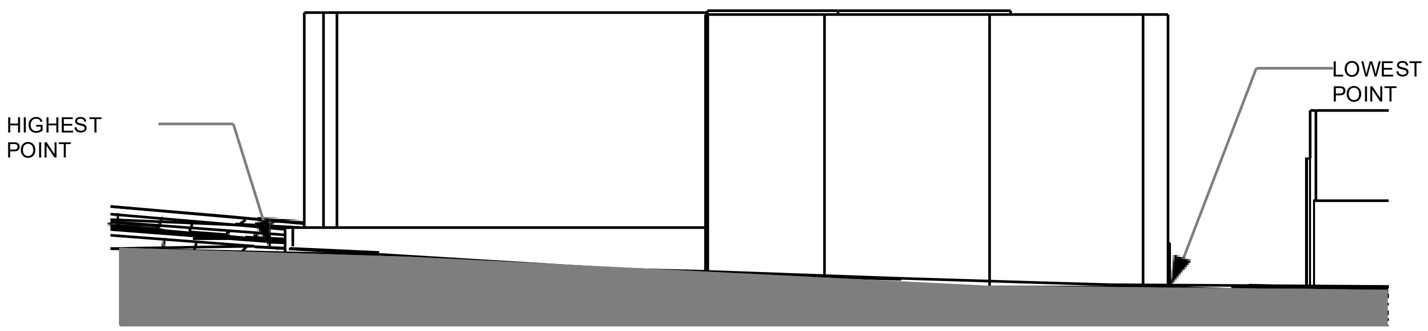
Source: Cadmapper

Lowest Point

On the southwest edge, near the Virginia Woolf Building (towards Kingsway).

Contour: 32 m (dark blue).

Highest Point
Towards the northeastern side, close to Portsmouth Street.
Contour: 37 m (orange-red).
Elevation Difference
High point (37 m) - Low point (32 m) = 5 m variation across the site.



SITE SECTION

TOPOGRAPHY

DRAINAGE AND GROUNDWATER

Drainage Solutions Implemented
Basement Waterproofing (“Tanking”):

Reinforced concrete retaining walls with waterproof membranes.

Rainwater Management (SUDS):

Green roof retains rainfall, reducing peak runoff.

Collected roof water routed to rainwater harvesting tanks for reuse (toilets/irrigation).

Excess water directed into the city’s combined sewer system at a controlled discharge rate, per Camden Council regulations.

Source: Architectsjournal 2019
Credit: O'Donnell + Tuomey

Design Response to Terrain & Subsoil

Flat topography → no stepped massing required, but allowed full basement excavation.

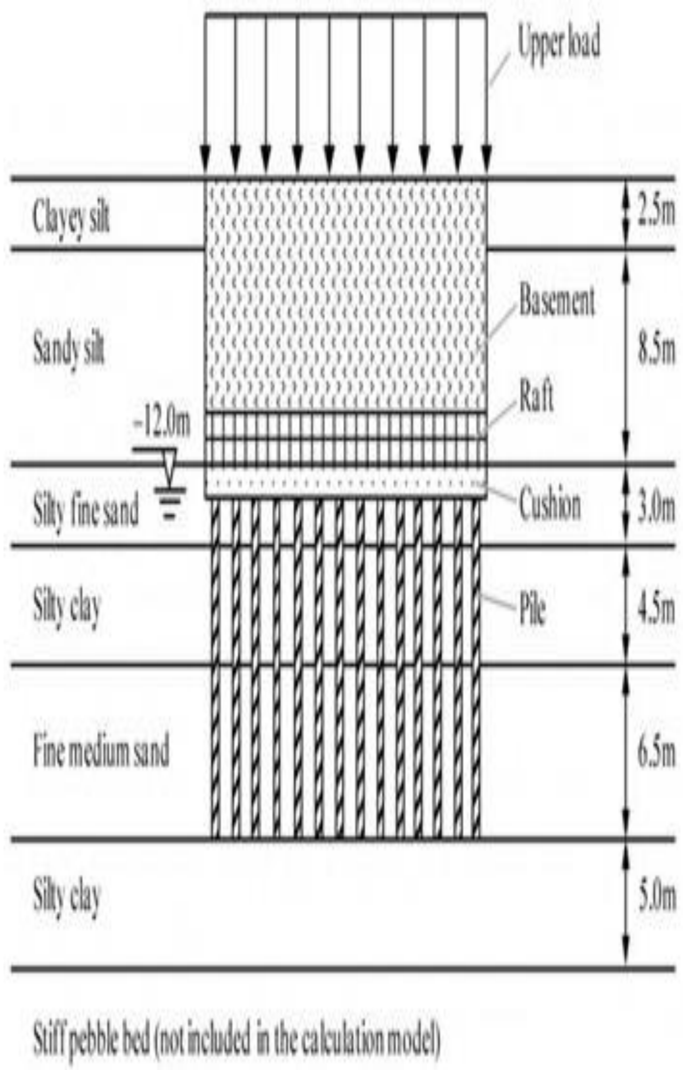
SOIL & SUBSURFACE

Area has London Clay, known for shrink–swell behavior.

Load-bearing capacity: ~150–200 kN/m² (moderate strength).

This soil condition influenced the choice of deep pile foundations to handle vertical loads and basement excavation.

Stability was critical because adjacent buildings are close and historic, so careful shoring + underpinning were needed during excavation.



https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.mdpi.com%2F2076-3417%2F8%2F11%2F2040&psig=AOvVaw1hOnhRSoOufGvlm8e-Zibd&ust=1757560139245000&source=images&cd=vfe&opi=89978449&ved=0CBUQjRxqFwoTCLDqlfGbzY8DFQAAAAAdAAAAABAE

DEVELOPMENT CONTROL GUIDELINES

PLOT RATIO

Definition: Ratio of total floor area to plot area.

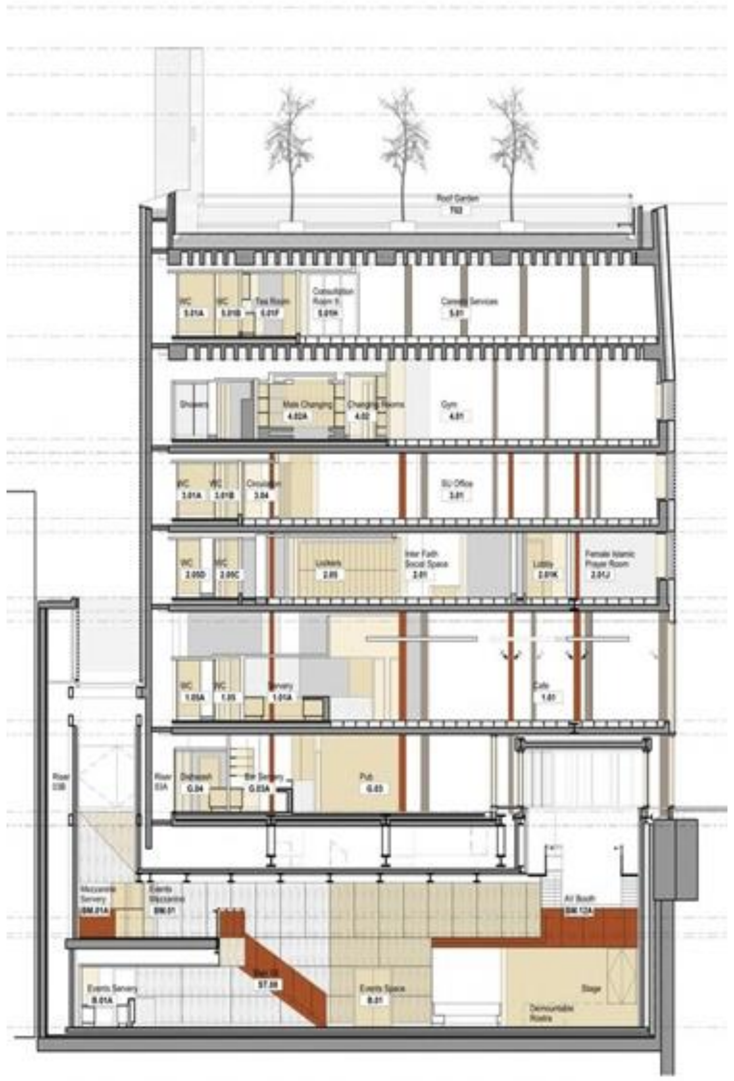
Application:

Central London encourages efficient land use, but tight sites must respect daylight rights and neighbouring buildings.

Saw Swee Hock achieves a high plot ratio (~6:1) by stacking six floors plus a double basement on a compact site.

Guideline Lesson:

In dense campuses, maximize vertical stacking but balance with rights-of-light and height caps.



Source: Architectsjournal 2019
Credit: O'Donnell + Tuomey

PLOT COVERAGE

Definition: Percentage of land area covered by the building footprint.

Application:

The building nearly covers 100% of the plot due to scarce land and urban density.

Outdoor gathering spaces are provided through roof terraces and internal atria rather than ground-level courtyards.

Guideline Lesson:

In tight urban contexts, expect high coverage; compensate by integrating vertical/open social spaces.

(https://www.archdaily.com/555540/lse-saw-hock-student-centre-o-donnell-tuomey-architects?utm_source=)

(https://www.archdaily.com/555540/lse-saw-hock-student-centre-o-donnell-tuomey-architects?utm_source=)

HEIGHT AND MASSING

Final building: 6 storeys above ground + double basement.

The height is deliberately lower than nearby towers but slightly taller than immediate neighbours → striking a balance between landmark presence and contextual respect.

Reason for limit: Protect daylight to narrow surrounding streets and preserve skyline continuity of Holborn/Clare Market area.

(https://www.archdaily.com/555540/lse-saw-hock-student-centre-o-donnell-tuomey-architects?utm_source=)

(https://www.archdaily.com/555540/lse-saw-hock-student-centre-o-donnell-tuomey-architects?utm_source=)

DEVELOPMENT CONTROL GUIDELINES

BUILDING LINES

Definition: The official line to which a building must conform (street edge, setback rules).

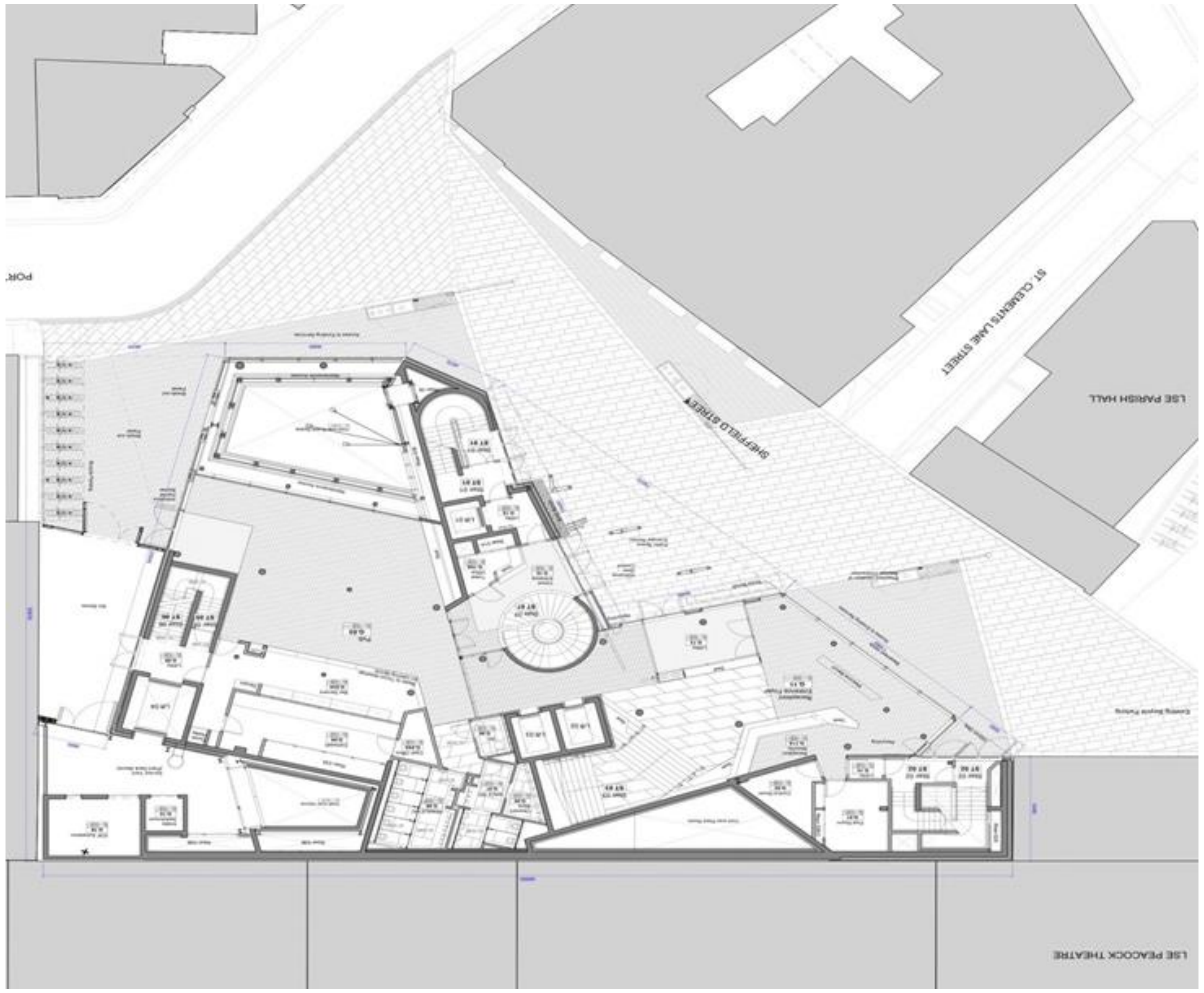
Application:

The building aligns closely with historic street lines (Sheffield, Portsmouth, Portugal Streets).

Faceted envelope responds to building line constraints + rights-of-light → producing chamfered corners and setbacks at higher levels.

Development control emphasized pedestrian permeability → hence the welcoming ground floor with open circulation and a highly visible entrance.

Source: Ros Diamond. photographer: Dennis Gilbert, 2015



(https://www.archdaily.com/555540/lse-saw-hock-student-centre-o-donnell-tuomey-architects?utm_source=)

ZONING

The Saw Swee Hock Student Centre was placed at the edge of the LSE campus on Sheffield Street to serve as both a gateway and a hinge between city and campus. The site was an underused plot strategically located at the intersection of main pedestrian routes, ensuring maximum accessibility.

As part of LSE's master plan, its placement symbolises the visibility of student life, strengthens connectivity to academic buildings, and regenerates the urban grain of Holborn with an active, socially oriented ground floor."

https://info.lse.ac.uk/staff/divisions/estates-division/Assets/Documents/SAW/Final-Web-version-of-Occupants-Guide.pdf

DEVELOPMENT CONTROL GUIDELINES

INTERNAL ZONING

Academic Zone

Located primarily along Houghton Street, Lincoln's Inn Fields, and Clare Market.

Includes lecture halls, seminar rooms, and faculty offices.

Zoning logic: keep teaching functions clustered, away from noisy social/student life functions.

Residential Zone

Student housing is clustered around the periphery of campus (e.g., LSE halls of residence further north and west).

Connected to the student hub via pedestrian routes.

Zoning logic: keep residences quiet but accessible, with the hub acting as a service point for daily student needs.

Administrative Zone

The Old Building and adjacent blocks house management, administration, and support services.

Zoning logic: central but slightly separate from student social spaces → maintains formal institutional presence.

Social & Student Life Zone (Hub)

The Saw Swee Hock Student Centre anchors this zone.

Placed at the interface between campus core and public streets, functioning as a social hinge.

Activities: café, union offices, event spaces, recreation rooms.

Zoning logic: position social facilities at a threshold site, ensuring easy access for both students and public.

Public Realm & Open Space Zone

Narrow medieval lanes (Portugal Street, Sheffield Street) + nearby Lincoln's Inn Fields park.

The student centre opens out to these with ground-level café + event spaces, extending LSE into the city.

Zoning logic: external space serves as urban breathing room for dense campus.

EXTERNAL ZONING

Central Activities Zone (CAZ)

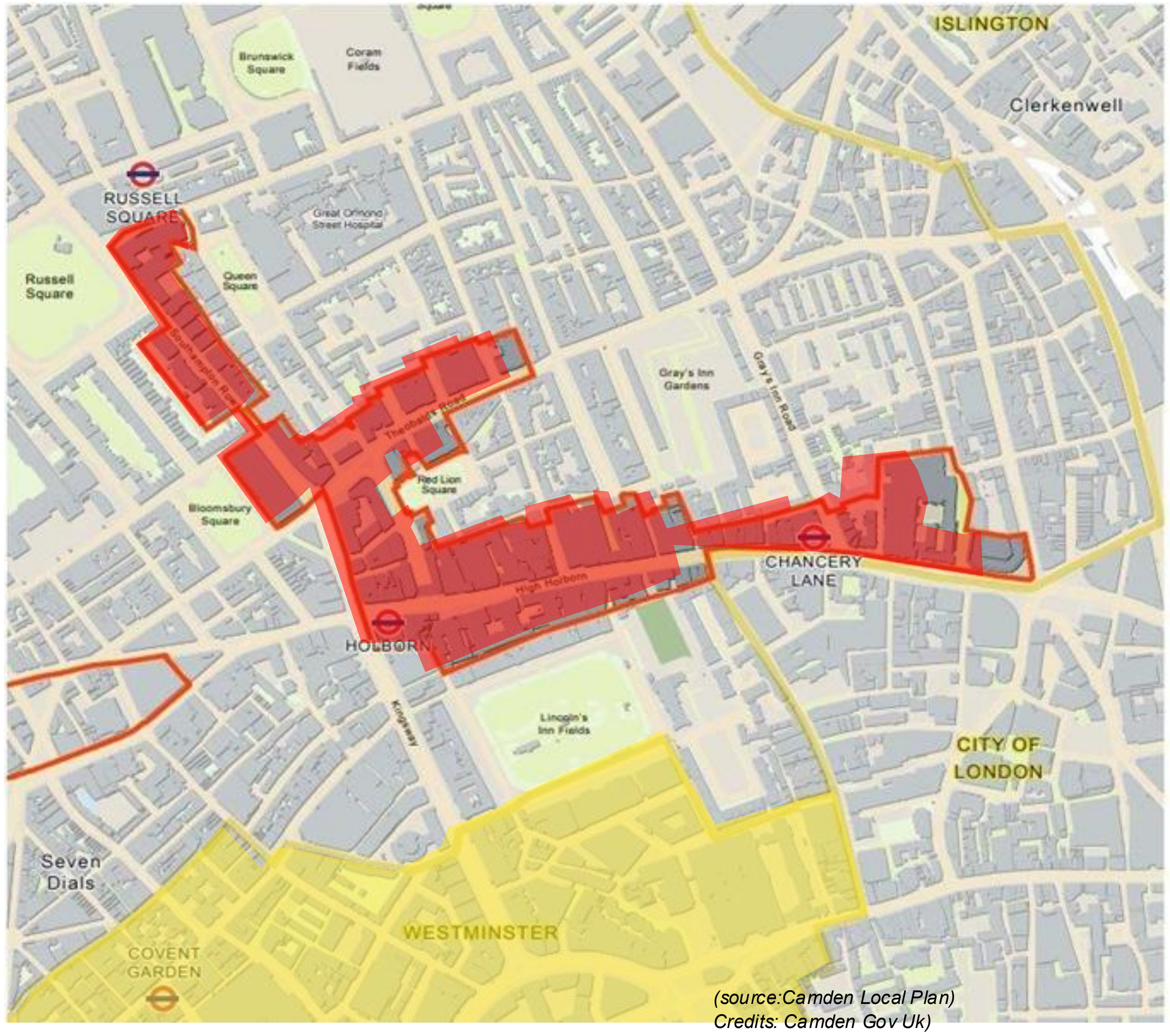
The site is within the CAZ, London's designated area for business, education, culture, and government.

Implication: Supports mixed-use development (education + student services are fully compatible).

Conservation Areas

. Opportunity / Growth Areas

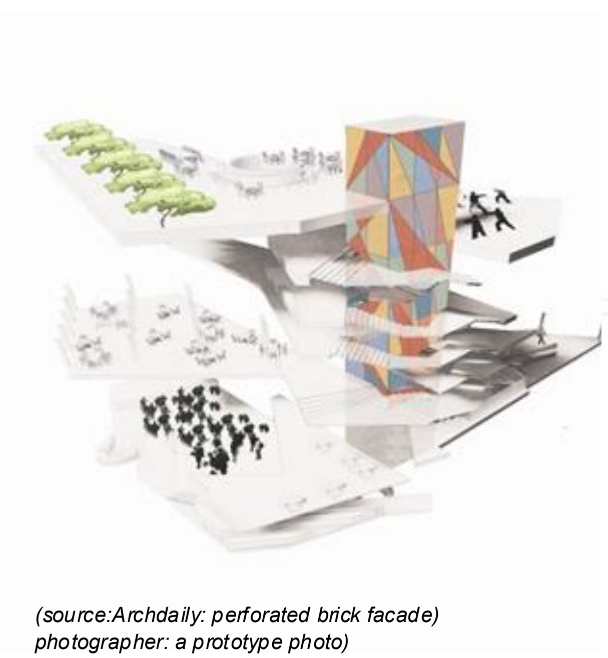
Source:Arketipo magazine 2020 :Planimetria
Credit:O' Donnell + Tuomey Architects

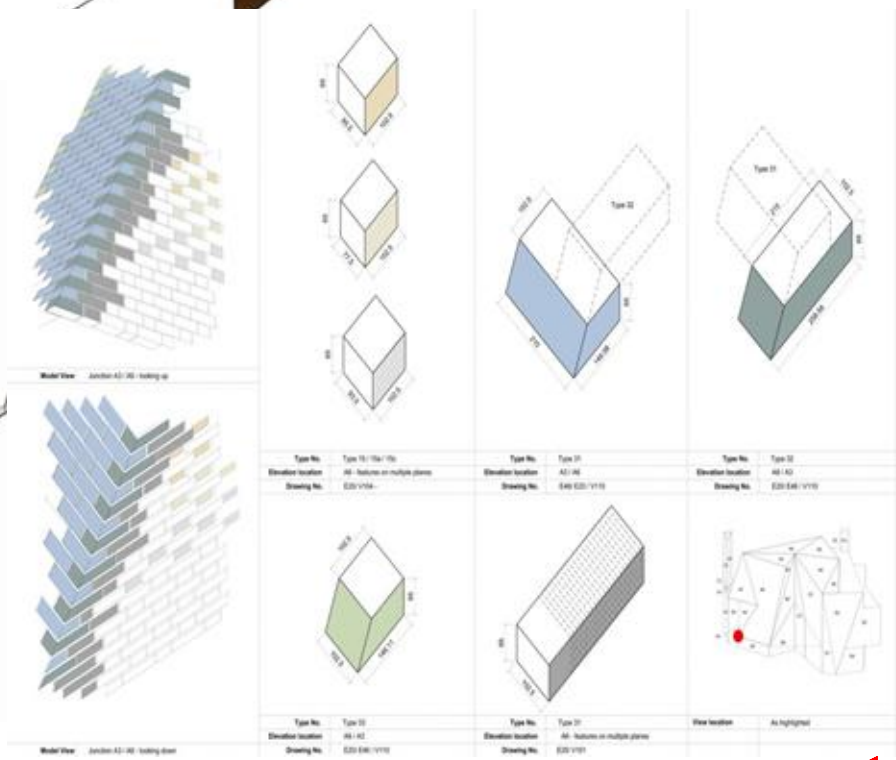


(source:Camden Local Plan)
Credits: Camden Gov Uk)

SITE ADAPTATION ANALYSIS

(source:Archdaily: perforated brick facade)
photographer: a prototype photo)



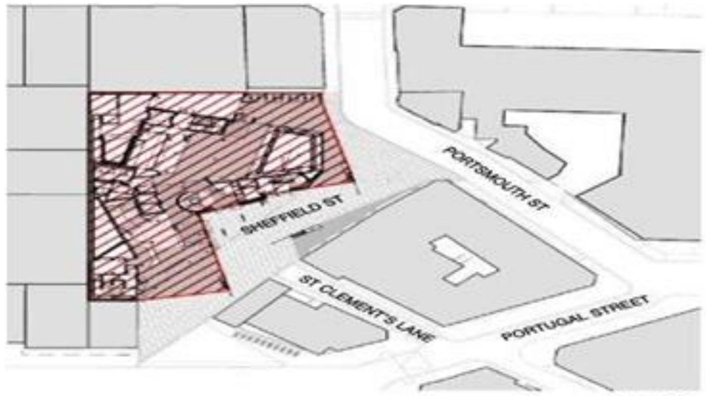


(source:Archdaily: perforated brick facade)
photographer: a prototype photo)

Site Layouts

The site is irregularly shaped, bordered by Portugal Street, Sheffield Street, and Portsmouth Street.

Building footprint almost completely fills the plot → high coverage due to scarcity of land.



Site plan

https://info.lse.ac.uk/staff/divisions/estates-division/Assets/Documents/SAW/Final-Web-version-of-Occupants-Guide.pdf

Open Spaces

Roof terraces (providing outdoor student social/study zones).

Atrium-like interiors that act as vertical courtyards.

Source: The Gurdian,Article by Rowan Moore 2014:Review of the new LSE student centre
Photograph: Nigel Stead

Pathways & Circulation

Building sits at a pedestrian crossroads, linking:
LSE campus (Clare Market, Houghton St).
City fabric (Kingsway, Lincoln's Inn Fields).
Ground floor designed as a public thoroughfare: transparent, porous entrances that encourage flow through the site.

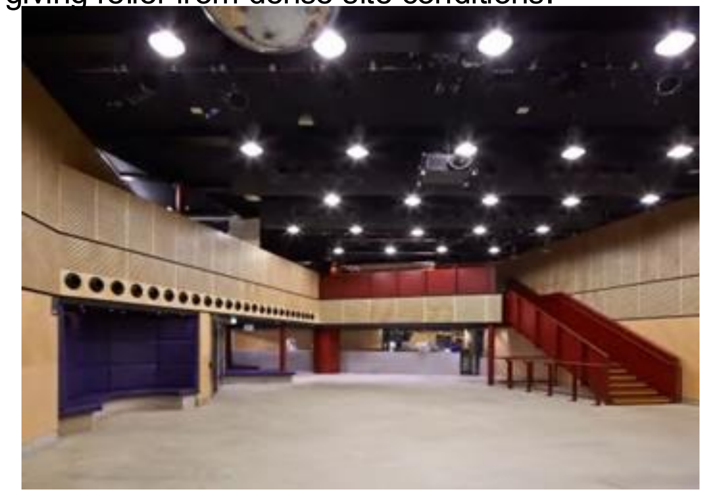
Internal circulation = spiraling staircase.

Source:APE blog 2014:LSE saw swee hock student centre spiral staircase
Photograph:Dennis Gilbert

Boulevards & Courts

Saw Swee Hock aligns to edges rather than creating setbacks.

Internal multi-storey halls act as surrogate courts, giving relief from dense site conditions.



Vegetation

Minimal vegetation at ground level (no space).

Vegetation is introduced via:

Green roof planting (sustainability + biodiversity).

Occasional terrace planting at upper levels.

(source:Archdaily: perforated brick facade)
photographer: a prototype photo)

DESIGN ANALYSIS

1.BUILDING TECHNOLOGY

(source:Archdaily: perforated brick facade) photographer: a prototype photo)

The building is resolved as a single structural frame (reinforced concrete + steel) that carries the loads and service cores, and a non- loadbearing, single-leaf perforated brick screen that is set off the structure in front of a sealed inner glazed wall. The brick skin is therefore a ventilated/rain-screen appearance and daylight/solar control layer rather than the primary weather-seal or thermal barrier.

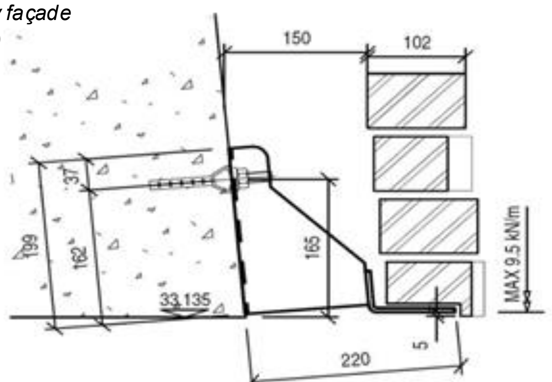
(source:Archdaily: perforated brick facade) photographer: a prototype photo)

How the brick skin is supported?

(The attractive masonry façade Source:Ancon Projects)

·Stainless-steel support and windpost system.

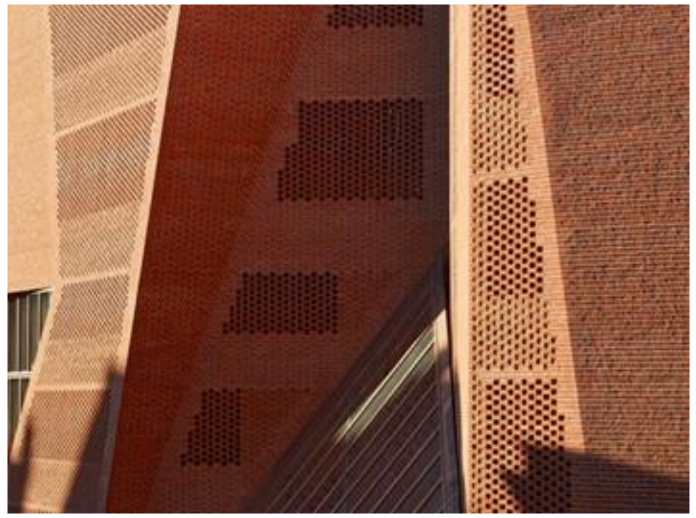
The brick screen is tied back to the main frame via a bespoke stainless steel masonry support system fixed to cast-in channels in the concrete structure.



(Section view of inclined MDC masonry support system Source:Ancon Projects)

1)corrosion resistance in an urban environment,
2) the ability to pre-position supports for complex geometry
3) to hide structure within perforations so the brick pattern is visually continuous

The brick screen.



(source:Dennis Gilbert, 2015: perforated brick facade)

·Single-leaf perforated masonry.
·The clay units were handmade "Saxon/Tudor" mix bricks

The inner sealed wall.

Behind the brick screen sits a sealed glazed wall Jatoba hardwood framed windows/curtain wall in places) that forms the building's primary airtight and insulated envelope

the real thermal / weather envelope

(a sealed glazed wall Source: Ros Diamond. photographer: Dennis Gilbert, 2015)

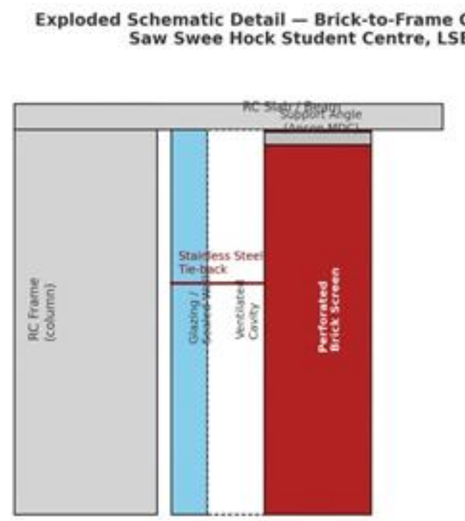
Helical concrete stair.

The prominent helical stair is cast in-situ and was specified with a significant GGBS (slag) content reducing embodied CO_2

(Helical concrete stair. Source: Ros Diamond. photographer: Dennis Gilbert, 2015)

Construction sequence.

1.Pour primary RC superstructure and cast-in channels as specified for brick fixings.
2Install steel windposts/support channels where brick geometry requires vertical restraint.
3.Erect inner glazed curtain wall / window framing and seal it as the thermal/weather envelope.
4.Fix masonry support brackets (MDC angles) to channels/windposts and set out supports to the 3D model.
5.Masonry installation by specialist bricklayers (with using pre-manufactured special units and strict setting-out with frequent QA/mockups.
6.Seal interface details, flashings, and finishings; install internal acoustic clouds and secondary fit- out.



2.ELEVATION/FACADE DESIGN

(https://www.archdaily.com/555540/lse-saw-hock-student-centre-o-donnell-tuomey-architects?utm_source=)

1. Material Expression

The use of deep red/orange handmade brick is both contextual and expressive. It references London's long tradition of brickwork but pushes it into a contemporary sculptural form through faceting and perforation.

The angled brick planes carve out irregular surfaces, making the building read less like a box and more like a monolithic urban sculpture.

Source: Ros Diamond. photographer: Dennis Gilbert, 2015)

Where the geometry "cuts," the façade opens up into large glazed facets — strategic transparency contrasting the otherwise heavy masonry. These glazed cuts signal activity, circulation, and public spaces inside.

(https://www.archdaily.com/555540/lse-saw-hock-student-centre-o-donnell-tuomey-architects?utm_source=)

When interior lights glow through the perforated screen, the façade reads as a "glowing lattice lantern," reinforcing the building's civic and social role on campus

(https://www.archdaily.com/555540/lse-saw-hock-student-centre-o-donnell-tuomey-architects?utm_source=)

2. Solids & Voids

Perforated zones: The brick is laid in Flemish bond with deliberate perforations, producing varying levels of transparency. This creates a play of dappled daylight inside and shadow patterns outside.

(accommodation office, and the fourth-floor gym above. Source: Ros Diamond. photographer: Dennis Gilbert, 2015)

Fenestration system: Timber/aluminium windows are placed behind the perforated brick screen, hidden from the street yet visible through openings. This layering blurs the line between solid wall and window.

(https://www.archdaily.com/555540/lse-saw-hock-student-centre-o-donnell-tuomey-architects?utm_source=)

Dynamic elevation: Because of this solids-voids interplay, the building has no "flat façade." Instead, it appears as a three-dimensional skin, constantly shifting depending on angle, light, and distance.

https://www.metalocus.es/en/news/lses-saw-swee-hock-student-centre-odonnell-tuomey?utm_source

3. Ground Interface

Public forecourt: At street level, a canopied entrance forecourt works as a transitional urban plaza, effectively pulling the public realm into the building. This softens the threshold between campus and interior.

Transparency at corners: Ground-floor corners are cut open and made transparent, revealing interior uses (like café and gathering spaces) to the street, encouraging engagement.

Civic gesture: The ground interface thus contrasts with the upper solidity: while the upper building is a massive brick form, the base is permeable and inviting, signaling the student centre's open, social character.

alamy.com/stock-photo-exterior-view-of-entrance-london-school-of-economics-saw-swee-hock-85051327.html? utm_source

DESIGN ANALYSIS

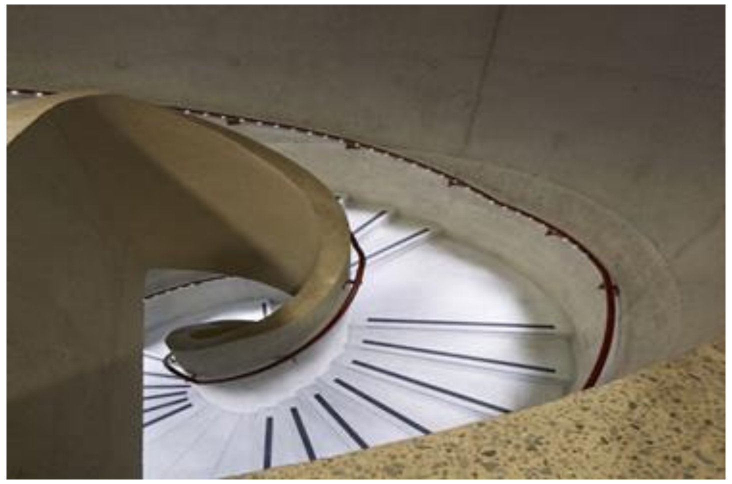
3. INTERIOR DESIGN

Palette & Textures
Exposed in-situ concrete, handmade brick reveals, Jatoba hardwood joinery, enamel panels.

(https://www.archdaily.com/555540/lse-saw-hock-student-centre-o-donnell-tuomey-architects?utm_source=)

Lighting & Ambience
Daylight through perforated brick; lantern effect at night.

Volumes & Levels
Central helical stair as spatial spindle; diagonal landings;daylighted basements.



https://info.lse.ac.uk/staff/divisions/equity- diversity-and-inclusion/EDI-at-LSE/Hall-Carpenter-Room?utm_source=

Furniture & Fit-Out
Built-in benches, durable café furniture, acoustic treatment in event spaces

https://blogs.lse.ac.uk/lsehistory/2024/10/23/opening-the-saw-swee-hock-student-centre/?utm_source=

4.LANDSCAPING

Hardscape forecourt with canopy; roof terraces/green roof for amenity & biodiversity.

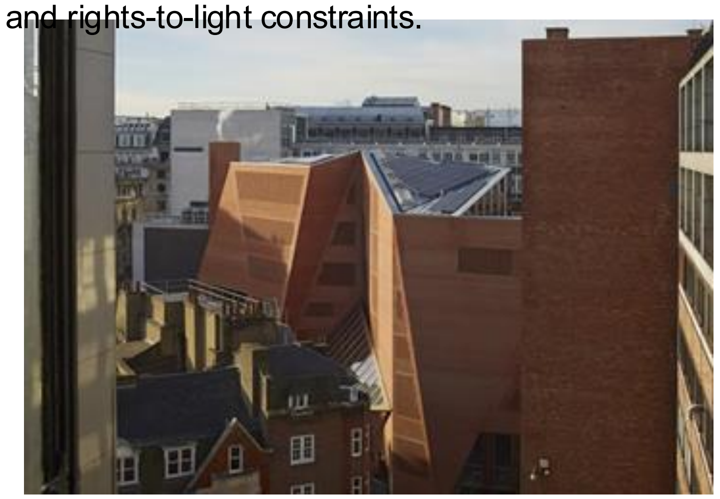
https://info.lse.ac.uk/staff/divisions/equity- diversity-and-inclusion/EDI-at-LSE/Hall-Carpenter-Room?utm_source=

4.FORM AND MASSING EXPLORATION

Shape & Form
The building emerges as a faceted, origami- like mass, resisting flatness through sculptural brick geometry.

https://blogs.lse.ac.uk/lsehistory/2024/10/23/opening-the-saw-swee-hock-student-centre/?utm_source=

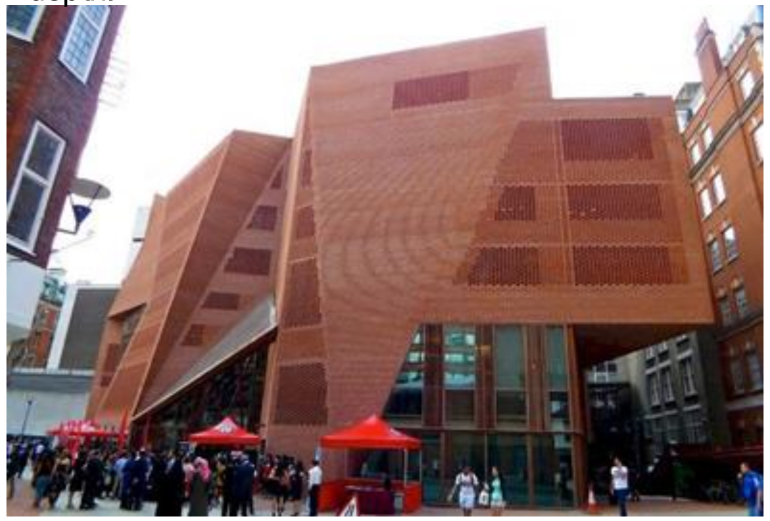
Arrangement & Orientation
Sloping planes and cut-outs align with sightlines and street axes—responsive to the urban grain and rights-to-light constraints.



Scale & Visual Inertia
The mass feels grounded yet dynamic—solid brick volumes balanced by kinetic form. Establishes civic presence within a human-scale context

https://blogs.lse.ac.uk/lsehistory/2024/10/23/opening-the-saw-swee-hock-student-centre/?utm_source=

Surface Treatment & Texture
The handmade brick's rich hue and material depth reinforce warmth and tactile quality; perforated patterns articulate light, shadow, and depth.



(https://www.archdaily.com/555540/lse-saw-hock-student-centre-o-donnell-tuomey-architects?utm_source=)

SPATIAL ORGANISATION

HIERACHY AND CLUSTERING OF SPACES.

The main spaces in the Student's Centre include:

Music Center
Serves multiple purposes i.e hosting music events, concerts, lectures, onferences, award ceremonies and film screenings.

https://www.chapmanbdsp.com/media/1263/lse-ssh_4.jpg?anchor=center&mode=crop&width=300&height=200

https://manchesterhistory.net/architecture/2010/sawsweehockR.jpg

Union offices
They are where student representatives and officers work to represent the students welfare and needs.

Learning cafe
It is a space provided to support academic needs of the students.They are equipped with study areas, resources like computers, printers and books.

https://i.guim.co.uk/img/media/36943486c8c6d509194adc942ed428fc3ea6911fd0_0_3508_2105/master/3508.jpg?width=220&dpr=1&s=none&crop=5%3A4

https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcTB5KhHjENBfxnl&QsLyVeURY7z074SYMDObsL2WJVI1VsO&s

Dance studio
This is where students explore their passion for dancing i.e salsa, batchata, ballet, contemporary, hiphop etc.

Prayer centre
An all inclusive space where students from different religious backgrounds have ' space for religious activities.

https://blogsmedia.lse.ac.uk/blogs.dir/85/files/2024/05/_Opening_OUO.jpg

https://fdn.rhighrdn.com/a d-3436-495d-b748-5bda62d 911d/a1e80c8-df24-4ab8-81d-3809bbad79d6/AWSA0886-min.jpg

Gym
This is resource for the students to engage in physical activity to promote healthy physical well-being.

Careers Service They off er career development and job seeking services to the students and alumnis.

https://www.lse.ac.uk/lse/Assets/Images/LIB-images/student-services-centre.jpg

https://64.media.tumblr.com/c33502e261930a2693c4fd78dbdeec8/tumblr_inline_pjqy9ccyC1qihl_500.jpg

Bar
It is also called Three Tuns and it is a popolar spot where students get to socialize and relax.

The secondary spaces that support the main spaces include:
Corridors, Hallways, Lobbies, Reception, Counselling rooms and Storage rooms in the gym.

https://arquitecturaviva.com/assets/uploads/obras/40508/av_medium_av_175735.webp?h=40b64b47

https://rdf5.OOSdlool.ac.uk/wp-content/uploads/2013/12/Members_Local_Building_Visit_LSE_Saw_Swee_Hock_Students_Centre_ODonnell_+_Tuomey_VB_2013_12_03_0025.jpg

The servants spaces that provide utility and support the main and secondary spaces include:
mechanical rooms, electrical rooms, janitor's closet and service corridors.

PRIVACY GRADIENT

Prayer rooms

Student Union offices

Administration offices

Counselling rooms

Dance studios

Gym

Media and Music rooms

Learning Cafe

Cafe

Bar

Events Venue

Reception

Main Entrance

MOST PRIVATE

They are away from heavy circulation and they are acoustically separated from social spaces.

MOST PUBLIC

Experience heavy flow circulation.

USER PATTERNS

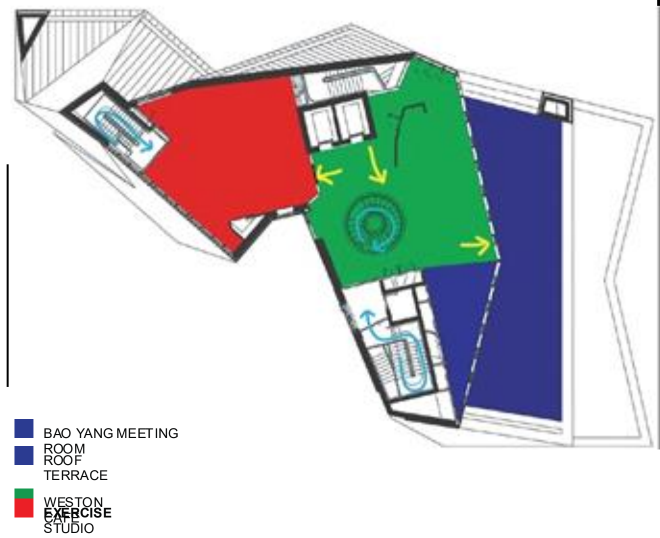
The students use the cafe area more in the afternoon, while study spaces are busier in the mornings.

The staircase becomes a social space, not just a circulation route.You could map how people move between floors and where they tend to pause, sit, or gather.

https://memberevents.aaschool.ac.uk/wp-content/uploads/2013/12/Members_Local_Building_VISIT_LSE_Saw_Swee_Hock_Students_Centre_ODonnell_+_Tuomey_VB_2013_12_03_0025.jpg

6TH FLOOR LAYOUT

6th FLOOR



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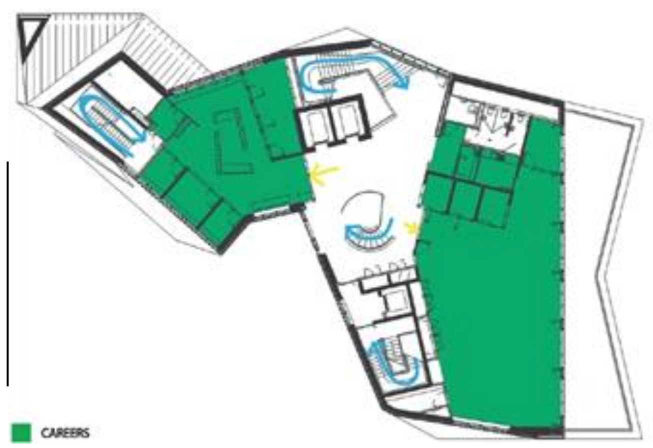
5TH FLOOR LAYOUT

5th FLOOR



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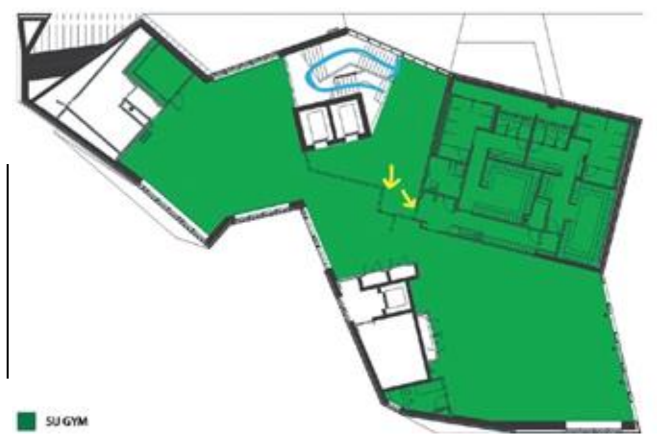
4TH FLOOR LAYOUT

4th FLOOR



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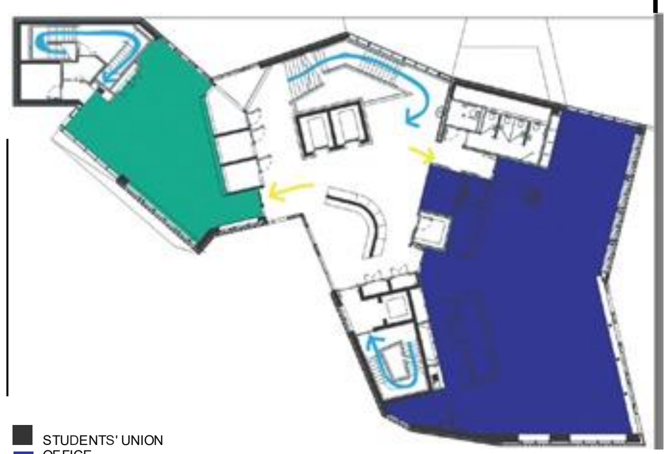
3RD FLOOR LAYOUT

3,d FLOOR

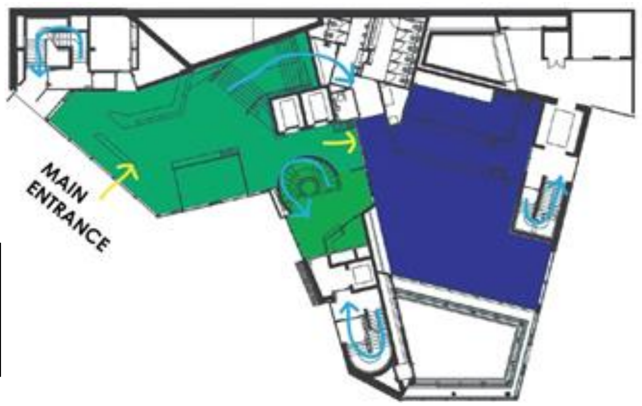


STUDENTS' UNION OFFICE
ACCOMMODATION OFFICE

https://info.lse.ac.uk/staff/divisions/estates-division/Assets/Documents/SAW/Final-Web-version-of-Occupants-Guide.pdf

GROUND FLOOR LAYOUT

GROUND FLOOR

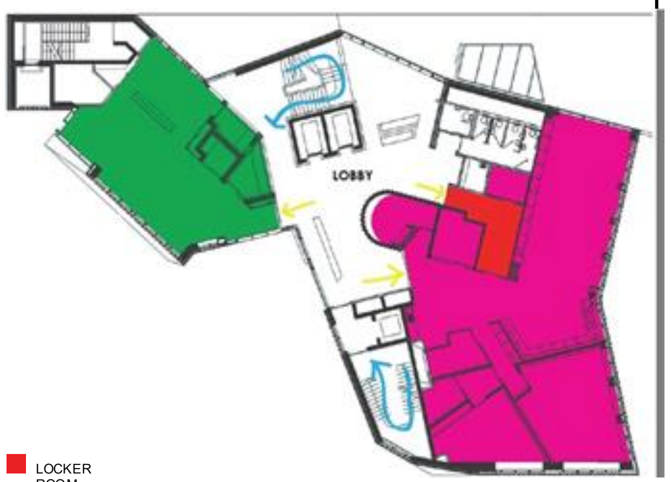


ENTRANCE/RECEPTION
THE THREE TUNS
THE VENUE

https://info.lse.ac.uk/staff/divisions/estates-division/Assets/Documents/SAW/Final-Web-version-of-Occupants-Guide.pdf

2ND FLOOR LAYOUT

2nd FLOOR

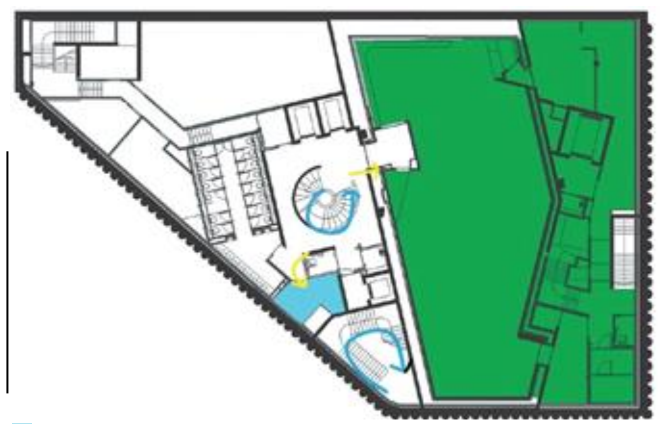


LOCKER ROOM
FAITHCENTRE
MEDIA CENTRE

https://info.lse.ac.uk/staff/divisions/estates-division/Assets/Documents/SAW/Final-Web-version-of-Occupants-Guide.pdf

BASEMENT MEZZANINE LAYOUT

BASEMENT MEZZANINE FLOOR

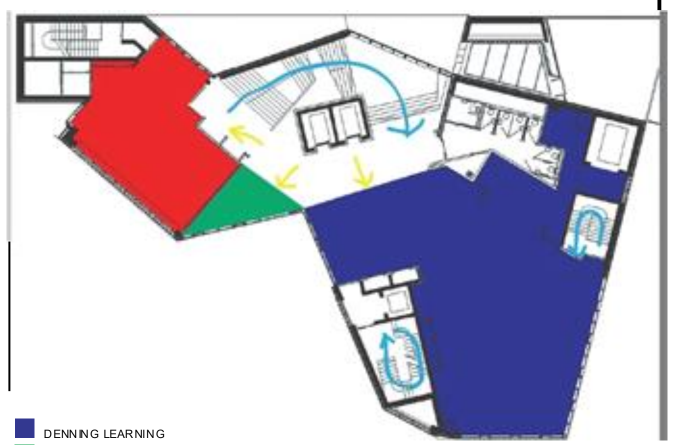


THE VENUE
TEAPOINT

https://info.lse.ac.uk/staff/divisions/estates-division/Assets/Documents/SAW/Final-Web-version-of-Occupants-Guide.pdf

1ST FLOOR LAYOUT

1stFLOOR



DENNING LEARNING CAFE
STUDENTS' UNION OFFICE
ACTIVITIES RESOURCE CENTRE CARO

https://info.lse.ac.uk/staff/divisions/estates-division/Assets/Documents/SAW/Final-Web-version-of-Occupants-Guide.pdf

BASEMENT FLOOR LAYOUT

BASEMENT FLOOR

RESTROOM
THEVENUE

https://info.lse.ac.uk/staff/divisions/estates-division/Assets/Documents/SAW/Final-Web-version-of-Occupants-Guide.pdf

CIRCULATION

HORIZONTAL CIRCULATION

Movement flows around central voids, staircases, and gathering spaces meaning that you are always visually connected to other levels and activities. Users can see where they are going, which helps with wayfinding and orientation.

1. Multi-Directional and Open

There are no long, monotonous corridors. Instead, horizontal circulation happens through open, irregularly shaped floor plates.

https://arquitecturaviva.com/assets/uploads/obras/40503/av_medium_av_17573.webp?h=bd4b47

2. Circulation as Social Space

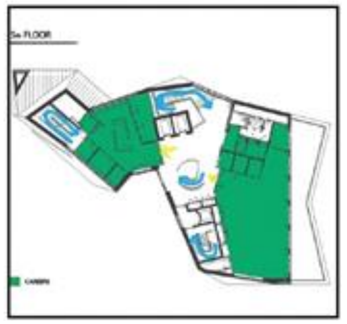
The horizontal routes are generously wide, often doubling as informal seating areas or places to pause. Students and staff tend to stop, talk, and interact along these paths, turning them into social connectors rather than just transition zones.

https://membereventsaaschool.ac.uk/wp-content/uploads/2013/12/Members_Local_Building_Visit_LSE_Saw_Swee_Hock_Students_Centre_ODonnell_+_Tuomey_VB_2013_12_03_0025.jpg

3. Horizontal-Vertical Integration

Horizontal circulation is always visually tied to the central stair. As you move along a floor, you can see up or down to other levels making the building feel open and encouraging vertical exploration.

5TH FLOOR LAYOUT



https://info.lse.ac.uk/staff/divisions/estates-division/Assets/Documents/SAW/Final-Web-version-of-Occupants-Guide.pdf

VERTICAL CIRCULATION

1.Lifts

The Student Centre features two passenger lifts located at the core of the building. One serves from the basement up to the 6th floor. The other operates from the basement up to the 5th floor.

Additionally, there is a goods/service lift serving from basement to first floor.The lifts fit 13 people and are readily accessible to the public, strategically placed right past reception.

2.STAI RCASE

The staircase is both a functional connector and a social stage, with landings doubling as mini social hubs. Each landing features built-in seating or benches, offering informal meeting spots and break-out zones where students can rest, chat, or hold small gatherings.

There are three distinct types of staircases:

I]Main Concrete Spiral Staircase

Positioned near the building's entrance. It clambers vertically around the central lift core.

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https://netmagmedia.s3.amazonaws.com/uploads/2014/02/LSE-Saw-Swee-Hock-Student-Centre-DGIL-0122-000c-Dennis-Gilbert.jpg

II]Two Conventional Spiral Staircases

Located at the extremes,one leading down to the basement, and another up to the top levels where the floor plate diminishes.

III]Angular Stairwells at the Building's Corners

These are or angular staircases placed at three corners of the building. They complement the spirals by providing direct, functional vertical access and reinforcement to circulating flow.

BUILDING SERVICES

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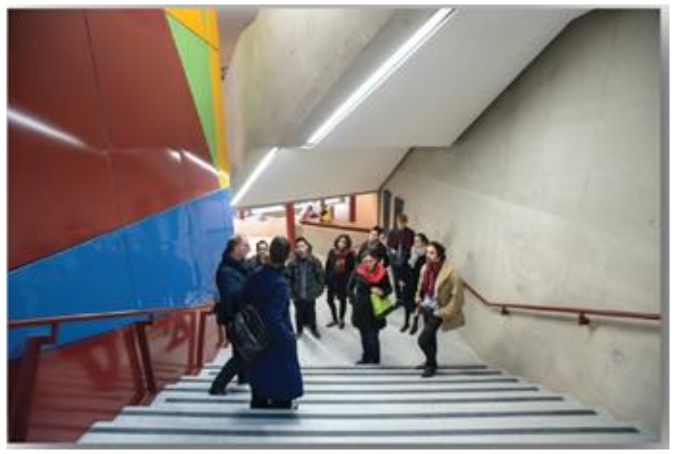

https://memberevents.aaschool.ac.uk/wp-content/uploads/2013/12/Members_Local_Building_Visit_LSE_Saw_Swee_Hock_Students_Centre_ODonnell_+_Tuomey_VB_2013_12_03_0025.jpg

HVAC SYSTEMS

Natural Ventilation & Passive Design
The building relies primarily on natural ventilation (including night-time cooling) via its perforated brick facades and exposed thermal mass to regulate indoor temperature. Only high demand areas like the basement event venue and IT server rooms use mechanical systems.

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https://s3-eu-west-1.odonnell-tuomey/projects/_w1800/A130_LSE_01.jpg

Low-Carbon Heating & Power
Heating and hot water are supplied through integrated gas-fired combined heat and power (CHP) **units, and the system is designed for future connection to a campus district heating network. Photovoltaic** panels on the roof generate renewable electricity.

https://info.lse.ac.uk/staff/divisions/estates-division/Assets/Images/Building-and-Construction/SAW-from-441-9922.jpg

Efficient Heating Distribution
The building uses a mix of trench heaters, underfloor heating, and radiator systems, all powered by low temperature hot water sourced from CHP units and boilers, with an air handling system that recovers heat between supply and extract airflows.

Environmental Controls
Energy-saving features include daylight and motion sensors for lighting control and a reclaimed water system for toilets, irrigation, and plant room maintenance.

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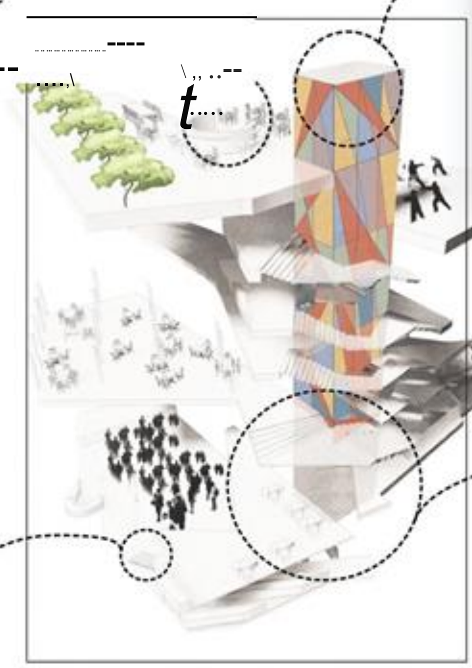
https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcRoyBswQSd...6lIYS23sDuHwPFE09cn mepg3_ABE6bq0H-...qotbK8nfgbYbEII-YIpHm2g&usqp=CAU

Spiral staircase

Lift Shaft



https://s3-eu-west-1.amazonaws.com/odonnell-tuomey-static/projects/_w1800/A130_LSE_07.jpg

Basement staircase

Angular staircase

https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcRoyBswQSd... u3yTVZMeduyD8ASkixG8Q&s

ACOUSTICS

KEY ASPECTS

Acoustic Clouds
They are suspended from the concrete ceilings in social zones to reduce echo and reverberation.

https://64.media.tumblr.com/043a603cba6a8e85cf1fa6428a44a80/tumblr_mzildqu105 1rasljo1_500.jpg

Material selection.
They have used materials like solid wood for the floors and flexible clear glass and timber partitions to maintain sound separation for a pleasant acoustic environment.
There is use of carpet flooring in the study areas to absorb ambient sound.

Glass and timber partitions

Solid wood floors

https://arquitecturaviva.com/assets/uploads/obras/4D503/av_medium_av_175735.webp?h=40bc4b47

Floating floors Systems
They have been used in the Events space to reduce noise tranmission during loud events.

FIRE SAFETY AND EMERGENCY SYSTEMS

Voice Alarm System & Zoning
The building is equipped with a two-stage voice alarm systems. Zones are divided into Zone 1 (basement,pub) and Zone 2 (upper floors). These zones can be independently set to Alert or Evacuate.

Controlled Access During Alarm
Access-controlled doors unlock automatically when the fire alarm activates. If they fail, occupants can break the green "break glass" panel to cut power to the magnetic lock.

Emergency Evacuation Protocols
Occupants are instructed to evacuate immediately (and not use lifts) when evacuation is triggered.

SECURITY SYSTEMS

Electronic Access Control
Secure areas are accessed via Saito fobs or LSE swipe cards. These systems regulate entry across various zones of the building.

Visitor Protocol
All visitors must be registered in advance; reception issues a visitor pass that includes emergency and safety information, visible throughout their visit.

SUSTAINABILITY AND INNOVATIONS

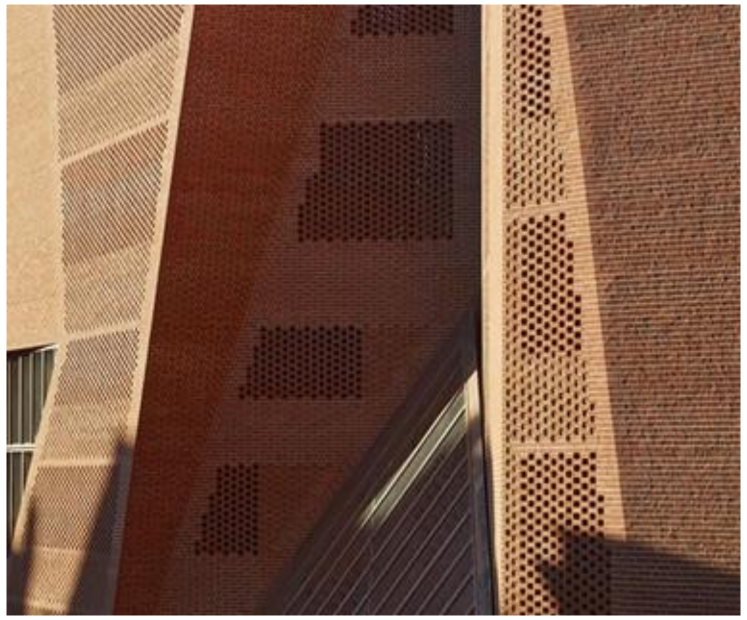
1.ENVIRONMENTAL SUSTAINABILITY

The buildings environmental performance was core design driver, integrating passive and active strategies to minimize its ecological footprint

PASSIVE DESIGN

ENERGY EFFICIENCY

The building maximizes natural ventilation through a perforated brick facade which allows air circulation while providing solar shading to reduce heat gain



Source: Dennis Gilbert, 2015; Perforated brick facade

PASSIVE DESIGN

Exposed thermal mass in most spaces helps regulate indoor temperatures

Source: O'Donnel + Tuomey;Exposed thermal mass

RENEWABLE ENERGY

A 254sqm photovoltaic system on the multifaceted roof reduces CO2 emissions by 32.3%. A gas-fired combined heat and power(CHP) unit meets most of the buildings hot water and space heating demands, with potential for future connection to a campus- wide district heating network

Source: Nigel Stead 2015 ;Photovoltaic system on the multifaceted roof

MATERIAL SELECTION

The facade uses locally sourced red bricks Coleford, Gloucestershire, reducing transport emissions. The design incorporates 46 standard and 127 specially shaped bricks, none of which were cut, minimizing wastes

Source: Dennis Gilbert, 2015 ; Material used

WATER MANAGEMENT

A rainwater and greywater harvesting system reduces water consumption, contributing to the buildings 100% BREEAM score in the water category

BREEAM OUTSTANDING

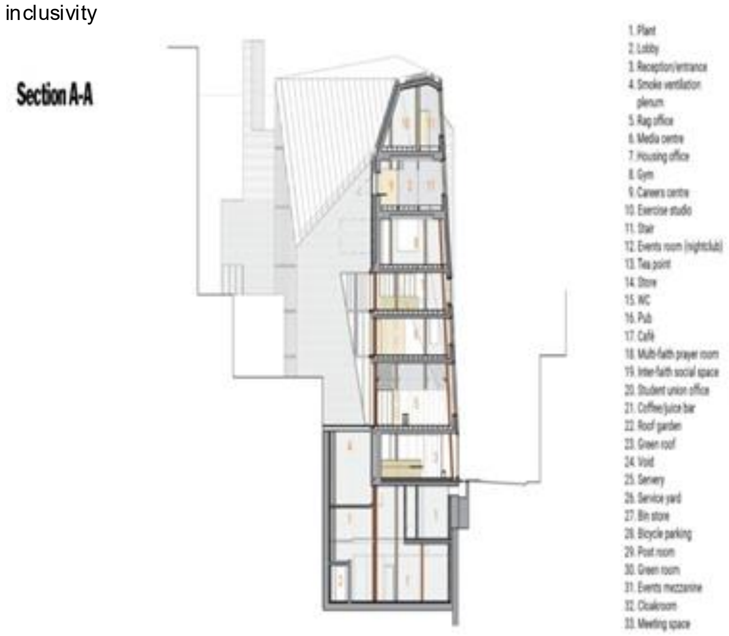
The building exceeded its initial BREEAM Excelent target achieving outstanding through close collaboration between the design team, client and supply chain. It scored 100% in Management, Transport and Water categories

2. SOCIAL SUSTAINABILITY

The centre is designed to enhance student experience and foster community interaction aligning with its role as a vibrant hub

USER EXPERIENCE

.The multifunctional design consolidates student facilities under one roof, including a 1000-person venue,gym,dance studio,learning cafe,media centre,faith centre and student union offices. These spaces promote well-being,collaboration and inclusivity



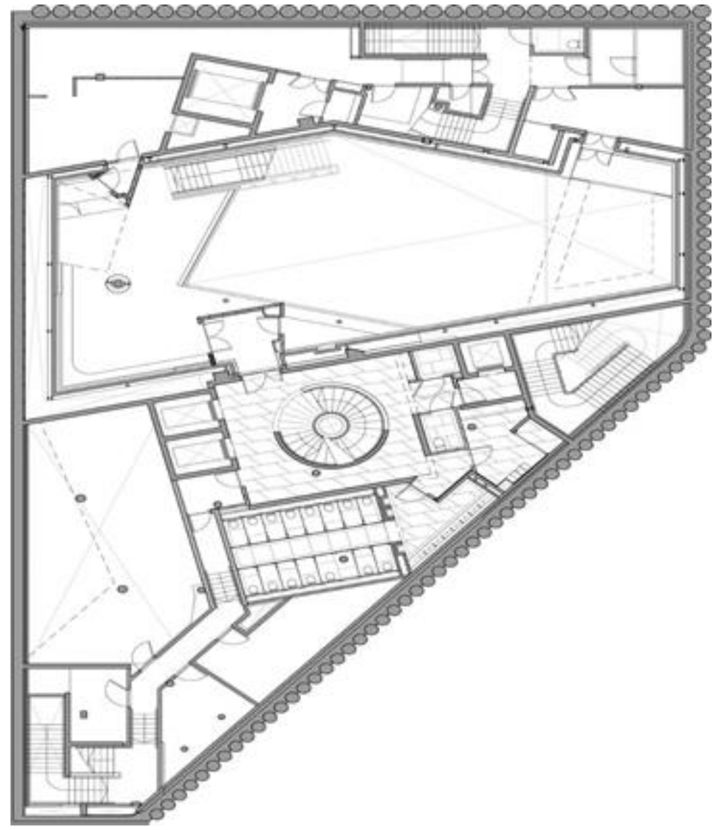
Source: Dennis Gilbert, 2014; Section showing multifunctional spaces

.The open, flowing inerior with spiral staircases creates "meeting places at every level" encouraging social interaction

Source: Dennis Gilbert, 2015; Spiral staircase

ADAPTABILITY

.The irregular floor plates are tailored to specific functions allowing flexibility for future reprogramming. The 24/7 accessibility ensures the building meets varied student schedules



Source: Dennis Gilbert, 2015; Irregular floor plates

3.ECONOMIC SUSTAINABILITY

The project balances high-quality design with long-term economic viability, despite it's $28 million construction cost

COST EFFICIENCY

Energy-saving features like the CHP unit,pv pannels and natural ventilation reduce operational costs

LOCAL ECONOMY

Locally sourced bricks and collaboration with skilled British bricklayers and contractors supported local economy and preserved traditional craftsmanship

4.INNOVATIVE TECHNOLOGIES AND STRATEGIES

Perforated Brick Facade

Combines aesthetic innovation with environmental performance, providing shading,ventilation and daylight while respecting the site's complex geometry

CHP and PV Integration

Foward-thinking inclusion of a CHP Unit and PV panels anticipates future campus-wide sustainability initiatives

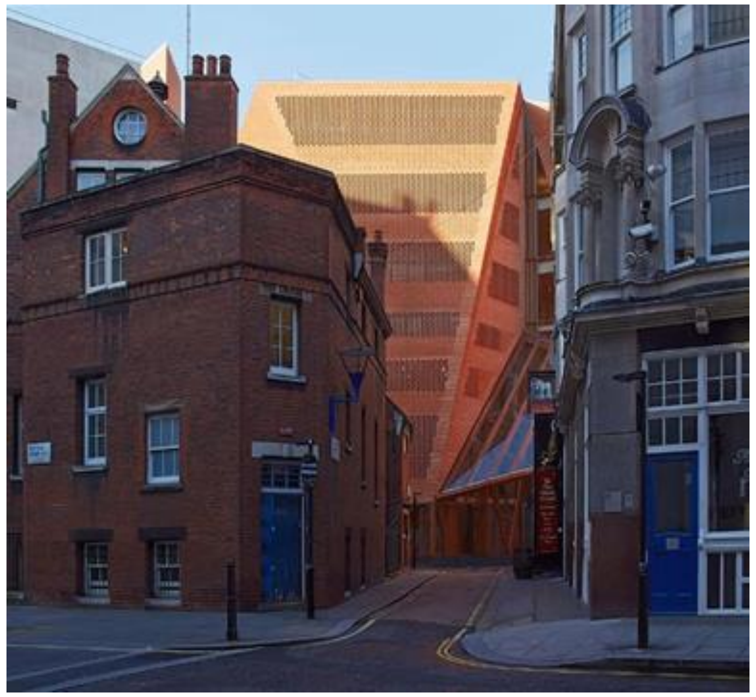
USER FEEDBACK

POSITIVE FEEDBACK

1. Strong Identity & Landmark Value

A sculptural and faceted facade: Unlike the conservative, sensible buildings that characterize much of the LSE campus

Perforated brickwork: The facade is constructed from 175,000 handmade bricks in a perforated, open-weave pattern.



Source : AJ buildings library, View pictures limited
Photograph by Dennis Gilbert

2. Variety & Inclusivity of Spaces

Provides a wide range of facilities: café, pub, rooftop terrace, gym, prayer rooms, faith centre, offices, media centre, and multi- purpose halls

Inclusivity praised — inclusion of prayer rooms, gender-neutral facilities, and multipurpose spaces that cater to diverse student needs

3. Social Circulation

The open circulation and dramatic staircases foster spontaneous meetings and informal student encounters. Critics called it “spiralling” and “dynamic,” encouraging community

Source: The Gurdian,Article by Rowan Moore 2014:Review of the new LSE student centre
Photograph: Nigel Stead

4. Atmosphere & Materiality

Use of exposed brick and daylighting strategies created a warm, inviting interior, appreciated by both students and staff

Source: Metalocus Jose Juan Barba

NEGATIVE FEEDBACK

1. Overcrowding

Popularity meant overuse of spaces, especially the café, lounges, and study corners. Informal seating often filled up at peak times

Source: Arquitectura ViVa 2016: Vertical circulation of the LSE students centre
Credit: Alex Bland

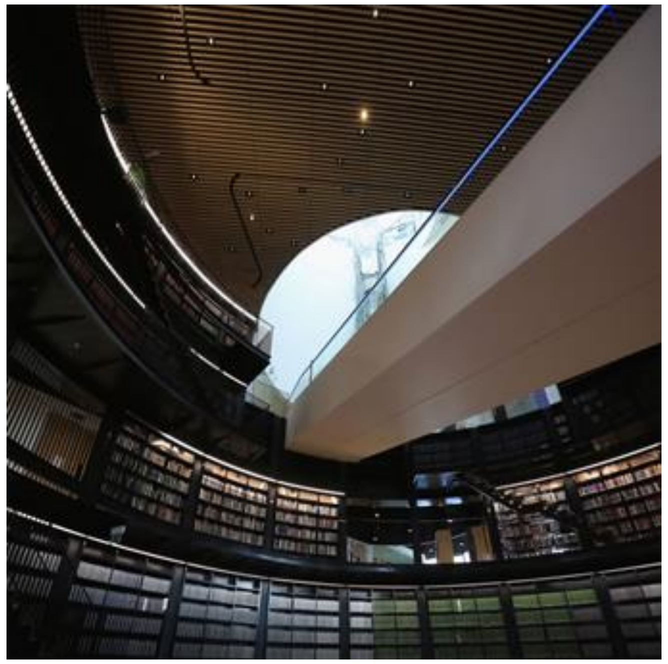
2. Architectural dissonance

The modern architectural style,despite being praised has been described by some students as detached from the more traditional buildings on the LSE campus

USER FEEDBACK

3. Noise Levels

The openness of spaces led to noise spillover, especially between event zones and quieter study areas. This occasionally disrupted academic activities



SOURCE: The Independent,LSE's Saw Swee Hock Student Centre makes art of even the humblest of buildings 13th oct 2014 Jay Merrick

Noise spillover due to perforations

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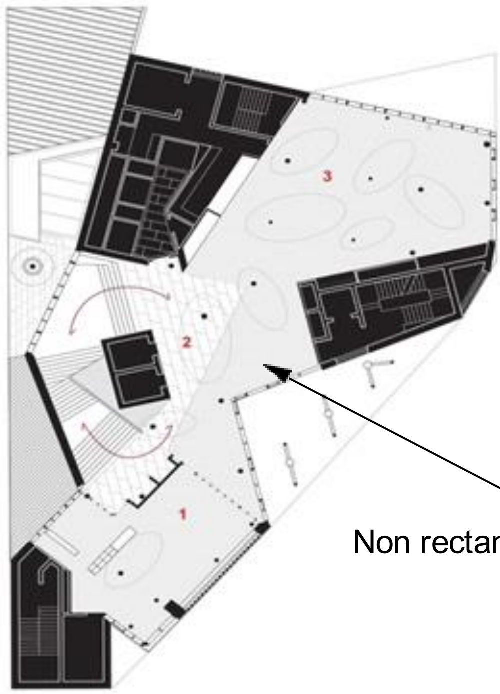
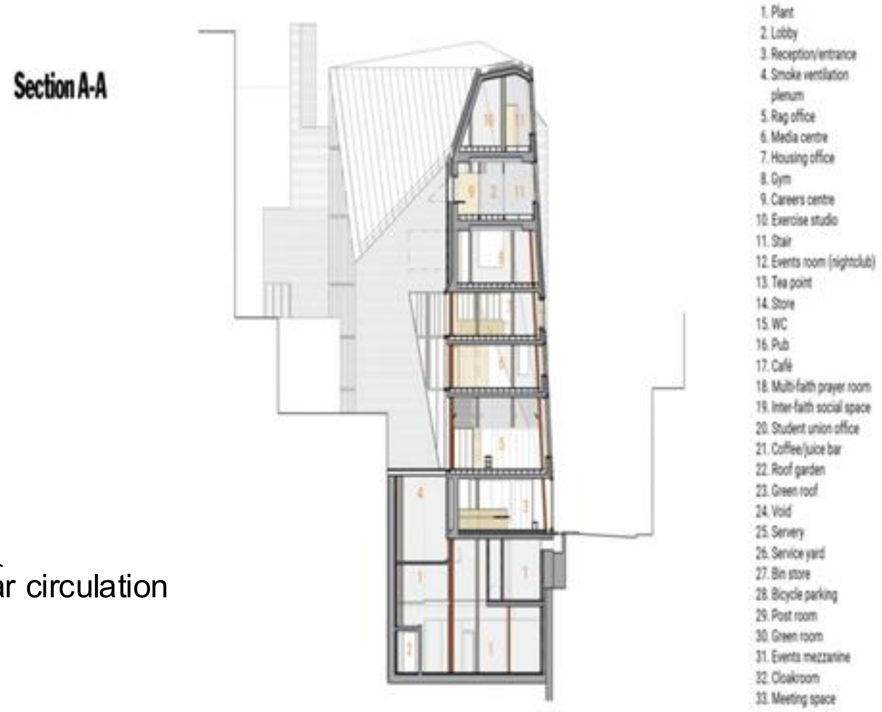
4. Wayfinding & Orientation

The irregular, angular layout caused some confusion in navigation. While admired architecturally, students sometimes felt lost inside the building



Non rectangular circulation

SOURCE:ARCHDAILY



SOURCE: The architect's journal, The Stirling-shortlisted Saw Swee Hock students' union is proving popular and well used, but has it met its ambitious sustainability targets? Hattie Hartman investigates.
Photograph: Ben Blossom

5. Maintenance Concerns

Despite durable materials, heavy use meant furniture and finishes aged quickly, with reports of wear and tear within just a few years

SOURCE: LSE History blog,Opening the Saw Swee Hock Students Centre,October 23rd 2024
Photograph by Nigel Stead

SOURCE: Architect's journal How is O'Donnell + Tuomey's LSE building faring five years on?
14 February 2019 • By Hattie Hartman

MIXED FEEDBACK

1. Bold Exterior Design

Praised by architecture critics for originality and craftsmanship: "none of the 175,000 bricks were cut to fit," showing precision and integrity

But divided opinion among students — some saw it as alien or "odd-looking," while others embraced it as iconic

https://i.guim.co.uk/img/static/sys-images/Observer/Columnist/Columnists/2014/2/14/1392414091680/saw-swee-hock-exterior-001.jpg?width=445&dpr=1&s=none&crop=none

2. Flexibility of Event Spaces

Multipurpose halls and meeting rooms were valued for adaptability, but student societies sometimes complained about booking difficulties and insufficient size for very large events

STRENGTHS AND LIMITATIONS

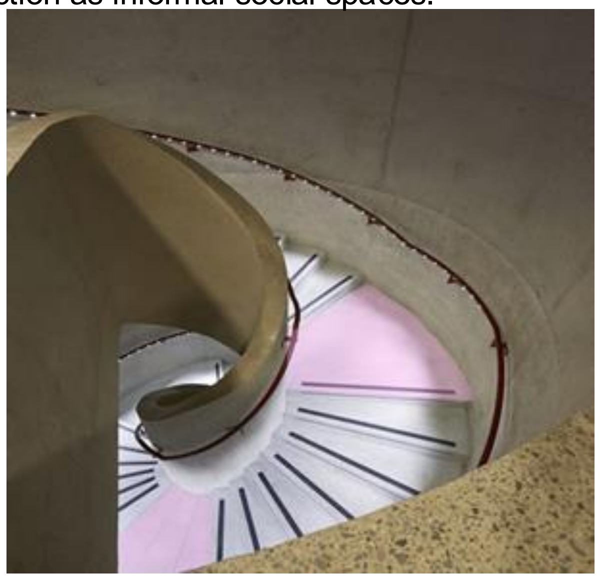
Strengths

Design and architecture

Aesthetic and iconic design: The building's angular, brick-lattice facade makes it a memorable landmark on campus. It allows natural light to filter in during the day and gives the building a lantern-like glow at night. **Clever use of a tight site**: The faceted facade, for example, was a creative solution to navigating "rights to light" restrictions concerning neighboring buildings.

Source: Architect's Journal article by Jay Merrick 2014: LSE student centre exterior from sheffield lane

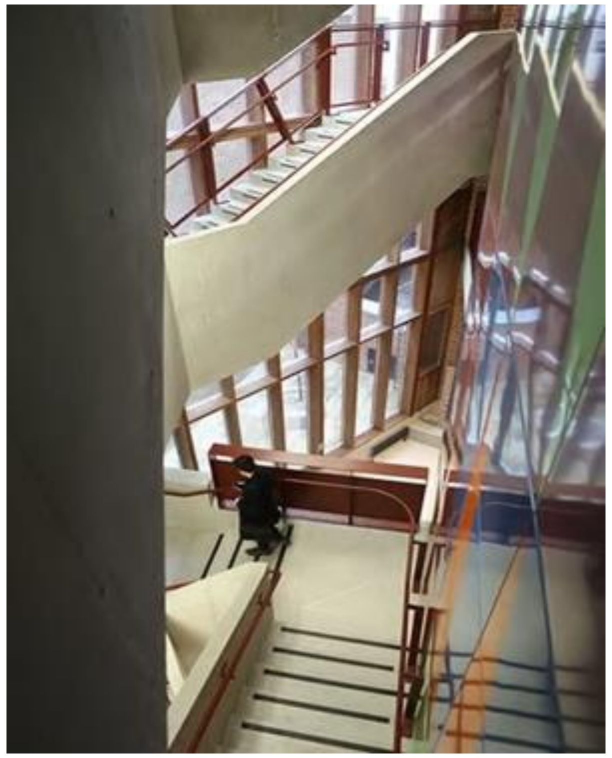
Open and social atmosphere: The internal layout was designed to encourage student interaction. For examle: open, spiraling staircase with landings that function as informal social spaces.



Source:APE blog 2014:LSE saw swee hock student centre spiral staircase Photograph:Dennis Gilbert

Natural lighting and ventilation: The design effectively captures daylight through the perforated brickwork and large windows, creating different moods in various spaces. The facade also allows for natural ventilation in most areas.The building achieved a BREEAM "Outstanding" rating

Source: The Guardian, Article by Rowan Moore 2014:Daylighting in the computer hub of LSE student centre Photograph:Dennis Gilbert



Source: The Guardian, Article by Rowan Moore 2014:Daylighting in the staircase of LSE student centre Photograph:Dennis Gilbert

Versatile spaces: The building successfully brings together a wide range of facilities under one roof, including union offices, a pub, a café, a gym, a media center, and multi-faith spaces.

Limitations

Architectural dissonance: Some students feel that the highly modern design clashes with the character of the more traditional buildings on the LSE campus, leading to a sense of detachment.

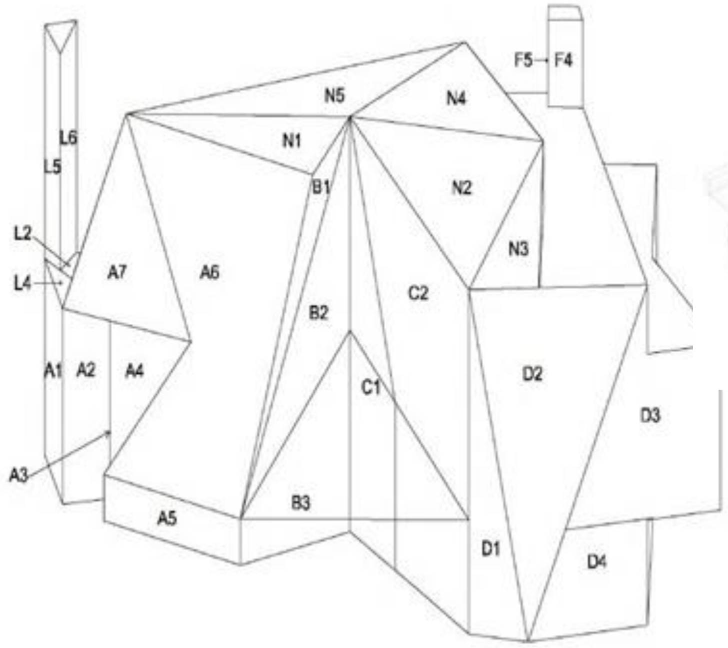
Source: LSE official website 2024:LSE Main Entrance Photograph: Leyla Hasanova

Scalability

Works as a unique, iconic one-off building.
The same design approach may not scale easily for larger student populations or multiple campuses.

Structural Complexity

Irregular geometry and angled façade require advanced engineering solutions.
Non-orthogonal floor and roof plates make structural grids and load transfer more complex → higher engineering + construction costs.



Source:Arquitectura Viva 2016: A roof form analysis diagram of the LSE Saw Swee Hock Student Centre. Credit: Alex Bland

Material & Construction Challenges

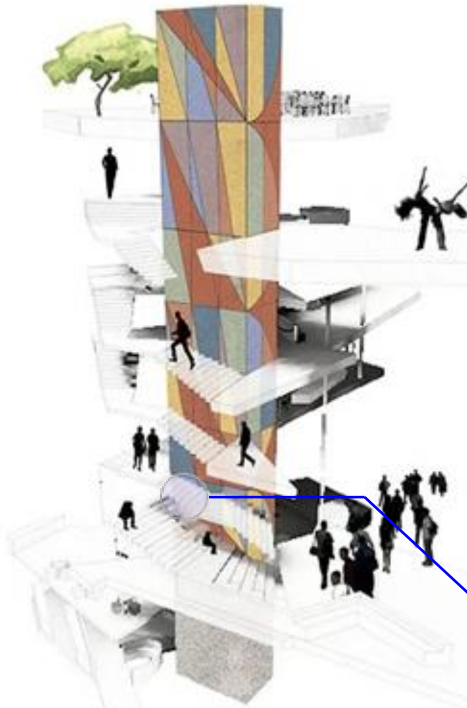
Customized brick façade with projecting and angled surfaces demands precision work.
Long construction period + specialist contractors required.
Higher maintenance needs for façade integrity compared to standard finishes.

Site Constraints

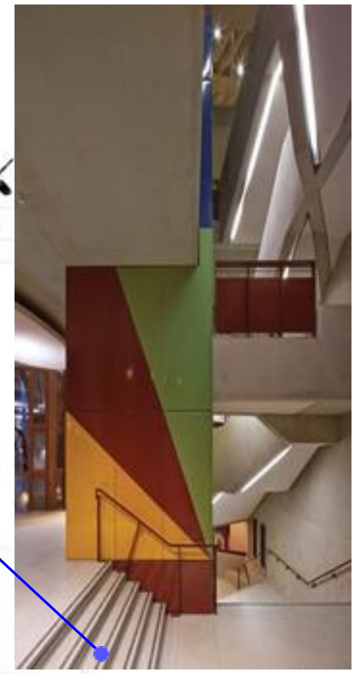
Very tight infill site (urban London) → restricts horizontal expansion.
Relies on vertical stacking of functions, which may reduce spatial flexibility compared to a spread-out campus design.

Energy & Environmental Performance

Limits Reliance on passive strategies in a dense urban setting means limited daylight penetration in some areas.
creating dependency on artificial lighting/ ventilation in deeper plan zones.



Source: Arquitectura Viva 2016:Vertical circulation of the LSE student centre Credit: Alex Bland



Source:Concrete magazine 2014: Use of artificial lighting in the LSE staircase Photograph: Dennis Gilbert

Cost Implications

High capital expenditure due to the tailor-made design, advanced structural systems, and finishes.
Not efficient for replication

rchDaily. (2014). LSE Saw Swee Hock Student Centre / O'Donnell + Tuomey Architects. ArchDaily. https://www.archdaily.com/555540/lse-saw-hock-student-centre-o-donnell-tuomey-architects

Architect's Journal. (2019, February 14). How is O'Donnell + Tuomey's LSE building faring five years on? https://www.architectsjournal.co.uk

Architect's Journal. (n.d.). The Stirling-shortlisted Saw Swee Hock Students' Union is proving popular and well used, but has it met its ambitious sustainability targets?

Ancon Projects. (n.d.). Masonry support systems for complex brick façades. APE

Blog. (2014). LSE Saw Swee Hock Student Centre spiral staircase.

Arketipo Magazine. (2020). Planimetria: LSE Saw Swee Hock Student Centre. Arquitectura

Viva. (2016). Vertical circulation of the LSE Saw Swee Hock Student Centre. BREEAM. (2015).

Case study: Saw Swee Hock Student Centre.

Concrete Magazine. (2014). Use of artificial lighting in the LSE staircase. Dezeen.

(2015). LSE Saw Swee Hock Student Centre by O'Donnell + Tuomey.

Gilbert, D. (Photographer). (2014–2015). Photographs of the LSE Saw Swee Hock Student Centre.

Guardian, The. (Moore, R.). (2014, February 16). LSE's Saw Swee Hock Student Centre review. The Guardian. https://www.theguardian.com

Independent, The. (Merrick, J.). (2014, October 13). LSE's Saw Swee Hock Student Centre makes art of even the humblest of buildings. The Independent.

LSE. (2024). Opening the Saw Swee Hock Student Centre. LSE History Blog. https://blogs.lse.ac.uk/lsehistory/2024/10/23/opening-the-saw-swee-hock-student-centre

LSE. (2024). LSE Estates Division – Saw Swee Hock Student Centre occupants' guide. [https://info.lse.ac.uk/staff/divisions/estates-division/Assets/Documents/SAW/Final-Web-version-of- Occupants-Guide.pdf](https://info.lse.ac.uk/staff/divisions/estates-division/Assets/Documents/SAW/ Final-Web-version-of-Occupants-Guide.pdf)

Manchester History. (n.d.). The relationship between imageability and form in architecture. Metalocus.

(Barba, J. J.). (2014). LSE Saw Swee Hock Student Centre / O'Donnell + Tuomey.

O'Donnell, S., & Tuomey, J. (2014). Architectural philosophy behind the Saw Swee Hock Student Centre.

Rattenbury, K. (2014). The Architecture Review – Saw Swee Hock Student Centre.

Rowan, M. (2014). Review of the new LSE Student Centre. The Guardian.

Stead, N. (Photographer). (2015). Photovoltaic system on the roof of the LSE Saw Swee Hock Student Centre.

von Sternberg, M. (Photographer). (2015). LSE Saw Swee Hock Student Centre photographs.

Chapter 4:
Reflections on the
MIT - Stratton Student Centre

The focus of discussion here is on a well analysed international, award-winning precedent of an architectural design project of a Student Centre, and in its analysis that emphasises concepts and technical considerations.

B.A.S YEAR IV
Contributing student researchers and designers, 2025/26 academic year, group 2

Aisha Khalid
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USA CASE STUDY - GROUP 2
MIT (STRATTON STUDENT CENTRE)

Figure 1: MIT Student Centre. Source: Uploaded to Google maps by Fabio Silver, 2024.

Location: Cambridge Massachusetts, USA.
Area: 4366 sqm.
Year of completion: 1968.
Architectural style: Brutalism.

Initial purpose was to create a central hub for student life; dining, gathering, recreation and organizational spaces under one roof.

ARCHITECT

Figure 2: Eduardo Catalano. Source: https://news.mit.edu/2010/ catalano-obit, 2010.

Executed in 1960 by **Eduardo Catalano**.
The project was completed in 1968.
Renovated by **Bruner/cott and Associates** in 1988.
In 2023, **Gensler** revitalized the building as a student center hub.
They Improved infrastructure, accessibility, new well being lab spaces and welcoming lounges.

a. Name of the Project

Julius Adams Stratton Student Center (commonly referred to as Stratton Student Center or W20) .

b. Architect / Firm

Original Architect: Eduardo Catalano (MIT professor), commissioned around 1961; completed and dedicated mid-1960s .
Renovation Architect: Gensler (Boston-based firm), responsible for the extensive renewal completed in 2023 .

Construction Oversight:
Original construction by Wexler Construction Company in 1963 .

Renovation managed by Elaine Construction Company, with design support from Vanderweil Engineers, Acentech, ARUP, LeMessurier, and others .

c. Year of Design

Catalano's design initiated in early 1960s; project approved in 1963 .

d. Year of Construction

Original construction began by 1963 and the building was officially opened in 1968, with dedication in 1965 .

e. Architectural Style, Theories, Philosophies, Project Intent & Vision

Style: Monumental Brutalist architecture, featuring heavy reinforced concrete, bold geometry, and expressive structural presence .

Architectural Concepts:

Designed as a dynamic, informal gateway to West Campus from Massachusetts Avenue, integrating with campus flow .

Interior emphasized a vertical core with split and intersecting staircases to evoke openness, movement, visual connectivity; balconies and terrace stairs introduced diagonal breaks in the horizontal façade .

Renovation Philosophy (2023):

Renew emphasis on wellbeing, communal interaction, healthy eateries, and performance arts, guided by student input .

Introduced Wellbeing Lab on third floor, reconfigured staircases, added natural light, refreshed lounges, and dance/movement studios to support diverse student use .
Goal: transform W20 into a bright, welcoming, activity-rich hub; achieved a Fitwel 1-Star rating in 2024 .

Figure 1: MIT Student Centre. Source: Uploaded to Google maps by Fabio Silver, 2024.

f. Area

Renovated building scope covers approximately 47,000 gross square feet (gsf) .

Specific floor areas:

2nd Floor Lobdell Dining Hall: ~5,746 sq ft .

3rd Floor combined lounges and rooms: varies (e.g., Mezzanine Lounge 1,802 sq ft; Twenty Chimneys 1,880 sq ft) .

4th Floor Room 401: 789 sq ft .

f. Area

Renovated building scope covers approximately 47,000 gross squareg.
Capacity

Capacity depends on room and setup:

Sala de Puerto Rico: Party ~500, Lecture ~400, Banquet ~400, Reception ~500 .

3rd Floor Mezzanine & Twenty Chimneys: Party/Reception ~200, Lecture ~150, Banquet ~120 .

4th Floor Room 401: Party ~50
Lecture ~50
Conference ~30
Rooms 407 & 491: Party/Reception ~150, Lecture ~130, Banquet ~80 .

Before closure for renovation, W20 hosted nearly 7,000 events annually with 200,000 participants .
feet (gsf) .

Specific floor areas:

2nd Floor Lobdell Dining Hall: ~5,746 sq ft .

3rd Floor combined lounges and rooms: varies (e.g., Mezzanine Lounge 1,802 sq ft; Twenty Chimneys 1,880 sq ft) .

4th Floor Room 401: 789 sq ft .

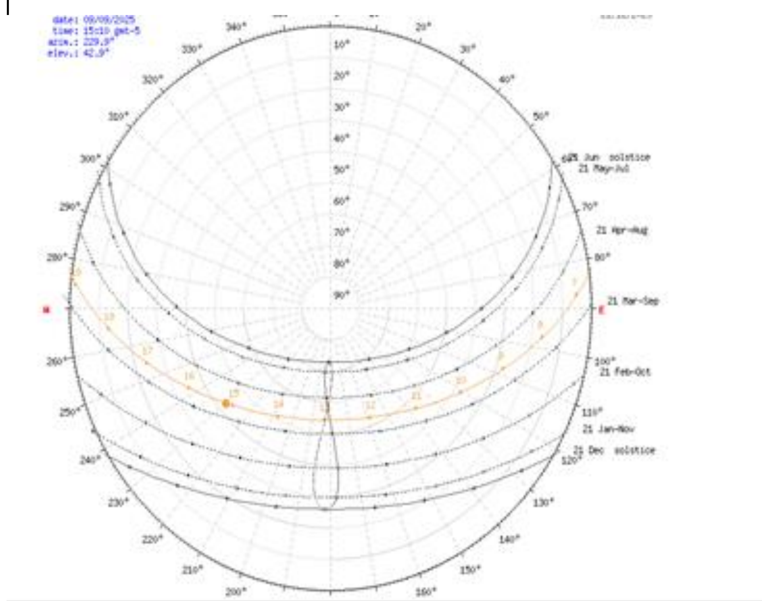
CLIMATE

Massachusetts is a state in the United States of America, has a humid continental climate, with four distinct seasons

SOLAR PATH

MIT latitude ≈ 42°N. The sun rises in the east–southeast and sets west–southwest

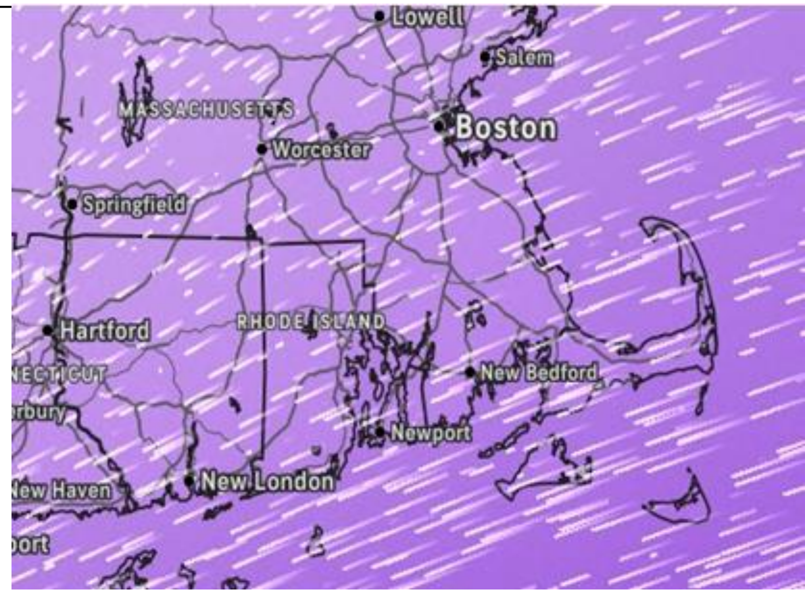
at summer solstice solar noon altitude ≈ ~71° and winter noon altitude ≈ ~24°



WIND PATH

prevailing winds from the west more; NW in winter, more SW in summer.

local sea-breezes can come from the east/coastal direction on warm days.



TEMPERATURE

Winter (Dec–Feb): Cold, snowy, and windy. Average highs 0–4 °C (32–39 °F); lows often below freezing (down to –6 °C / 21 °F).

Spring (Mar–May): Variable — chilly March, mild May. Highs 7–20 °C (45–68 °F).

Summer (Jun–Aug): Warm and humid. Highs 25–29 °C (77–84 °F), but heatwaves can push above 32 °C (90 °F).

Autumn (Sep–Nov): Mild to cool. Highs 20 °C (68 °F) in September, dropping to 8 °C (46 °F) by November.

PRECIPITATION

Annual rainfall: ~44 inches (1,120 mm), fairly even throughout the year.

Snowfall: ~48 inches (120 cm) per year, mostly Dec–Mar.

TERRAIN

The MIT campus is on flat, reclaimed land along the Charles River.
The river moderates temperatures slightly: winters are a bit milder, summers a bit cooler than inland Massachusetts.
Being near water also means higher humidity and more frequent fog/mist in transitional seasons.

ORIENTATION

Major glazing : south to daylight penetrates narrow floor

Operable windows

south-facing section of roof; allocate non-shaded area MIT solar panel

Entrance : prevailing sheltered/recessed from westerlies; incorporate

Flood mitigation: elevate critical infrastructure; design grade and landscaping for stormwater capture.

ACCESS AND TRANSPORTATION

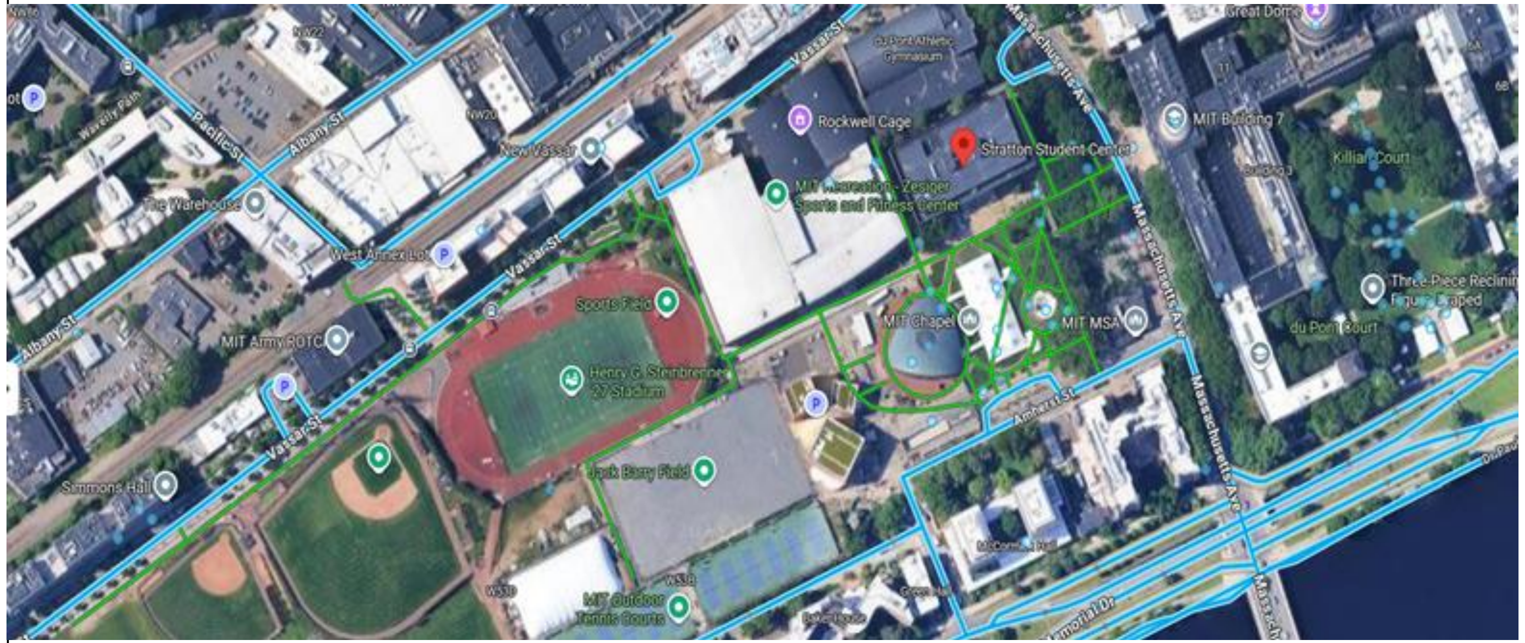


Figure 2: MIT Student Centre Street View with Street routes, surrounding buildings and fields. Source: Uploaded to Google maps

Pedestrian Access:

The main entrance is along 84 Massachusetts Avenue, across from MIT's main entry at 77 Mass Ave.

Paths extend toward Kresge Oval and into campus via Amherst Alley and Vassar Street.

Bicycles:

Vassar Street features a protected raised cycle track at sidewalk grade, making biking safer.

Bike racks are located around W20, especially near the Amherst Alley entrance.

Figure 2: MIT Stratton Student Centre . Source: Uploaded to Google maps

Figure 2: MIT Stratton Student Centre . Source: Uploaded to Google maps

Cars:

No car drop-offs directly in front; cars typically stop along Massachusetts Ave or side lots.

Parking is limited and located in designated MIT lots (permits required).

Public Transportation:

Bus stops are at Massachusetts Ave, steps away from the Student Center.

Kendall/MIT station: About a 10-minute walk east along Main Street.

MIT shuttles also circulate around Vassar Street and dorms.

CIRCULATION AND MOVEMENT

Within the Building:

1. Multiple staircases and elevators connect its four main levels.

1. Circulation includes corridors leading to lounges, dining venues, and activity rooms.

Figure 2: MIT Stratton Student Centre. Source https://sah- archipedia.org/buildings/MA-01-MT16#

Orientation on Campus:

1.Positioned prominently on Mass Ave, facing the city and the Charles River.

2.Sightlines: the south facade overlooks Memorial Drive and the river, while the north connects directly to Kresge Oval.

3.Functions as a physical and symbolic connector between academic spaces, residences, and recreation areas.

Figure 2: MIT Stratton Student Centre. Source Uploaded to Google maps

Design and Location Support for Inclusivity and Wellness:

Its central placement makes it accessible to students, staff, and the broader community.

Houses dining venues, student group offices, multicultural spaces, and lounges—supporting diverse forms of student interaction.

Open-access design (many non-restricted areas) encourages inclusivity.

Challenges:

The building's 1960s modernist architecture is often critiqued as heavy and uninviting from the outside.This is beacause of lack of natural light, stark materials, and a generally unwelcoming atmosphere that felt "heavy and cold".

Some interior areas feel segmented (e.g., upper levels less frequently used), limiting interaction across groups.

Circulation can be confusing for newcomers.

Figure 2: MIT Stratton Student Centre. Source Uploaded to Google maps

NEIGHBOURHOOD

Figure 2: MIT Student Centre aerial View with surrounding buildings and fields. Source: Uploaded to Google maps

Surrounding Buildings and Open Spaces

Major Nearby Buildings and Landmarks:

1. Kresge Auditorium: A 1,200-seat performance hall and cultural hub for concerts, lectures, and theater.

2. MIT Chapel: A small, non-denominational chapel designed by Eero Saarinen; supports reflection and spiritual wellness.

3. Kresge Oval: A central lawn/open space that hosts large student events, fairs, and informal gatherings.

4. Zesiger Sports and Fitness Center (W35): Features Olympic-size pools, fitness facilities, squash courts, and wellness spaces.

5. Johnson Athletic Center: Contains an ice rink, indoor track, and tennis courts.

6. Briggs Field: Large outdoor recreation field for intramurals and club sports.

7. Steinbrenner Stadium & Roberts Field: Varsity sports venue for soccer, lacrosse, and track events.

8. Amherst Alley: A student-focused corridor of residence halls and fraternities, connecting dorm life to the Student Center.

8. Charles River (south of Memorial Drive): Provides scenic views and recreational opportunities like running along the river paths.

Pros and Cons in Relation to Wellness, Inclusivity, Accessibility, Community:

Pros:
1.Dense clustering of cultural, recreational, and spiritual spaces encourages holistic student wellness.

2.Green open spaces (Kresge Oval, riverfront) support inclusivity by being free and accessible.

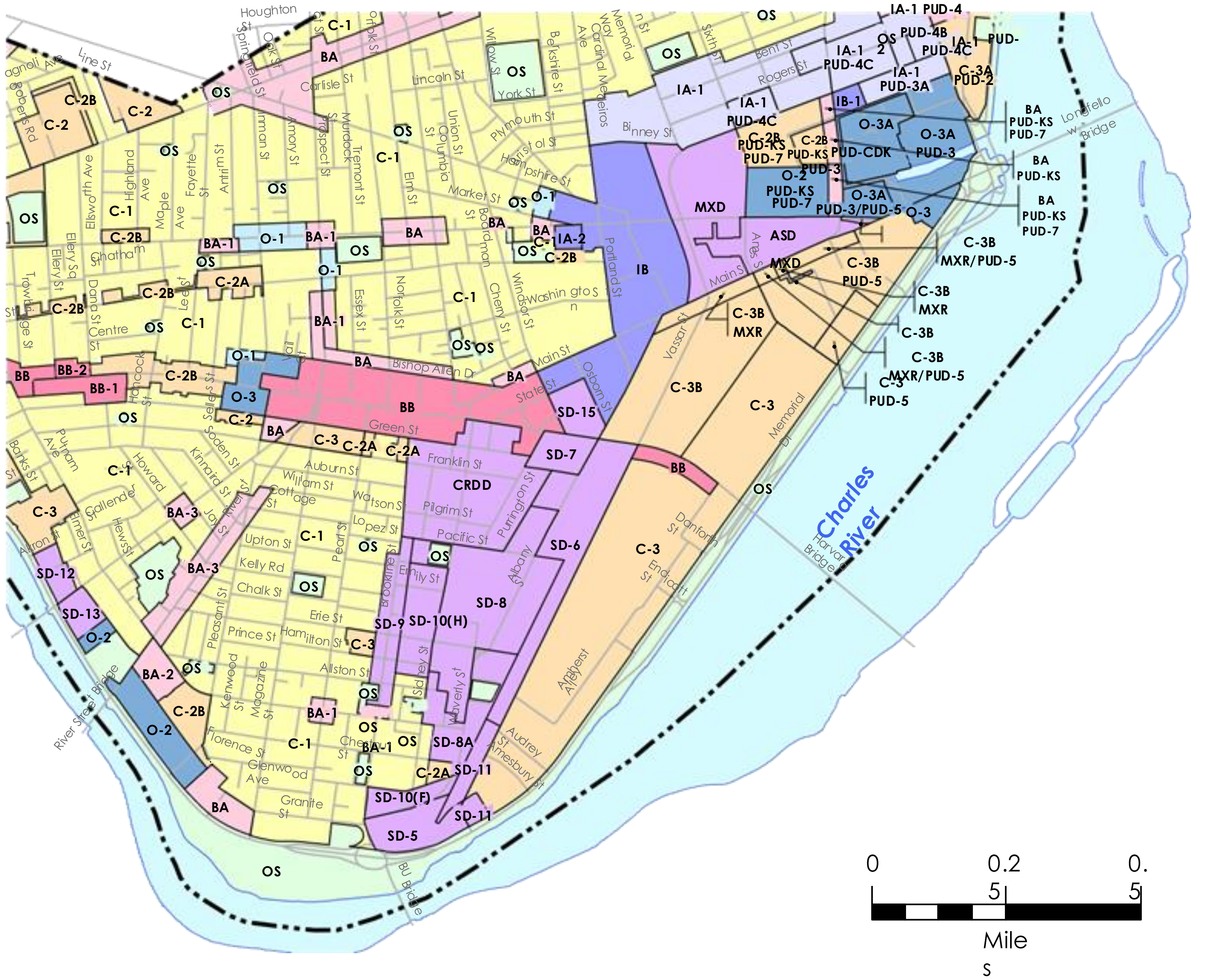
3.Strong connections to student housing via Amherst Alley build community.

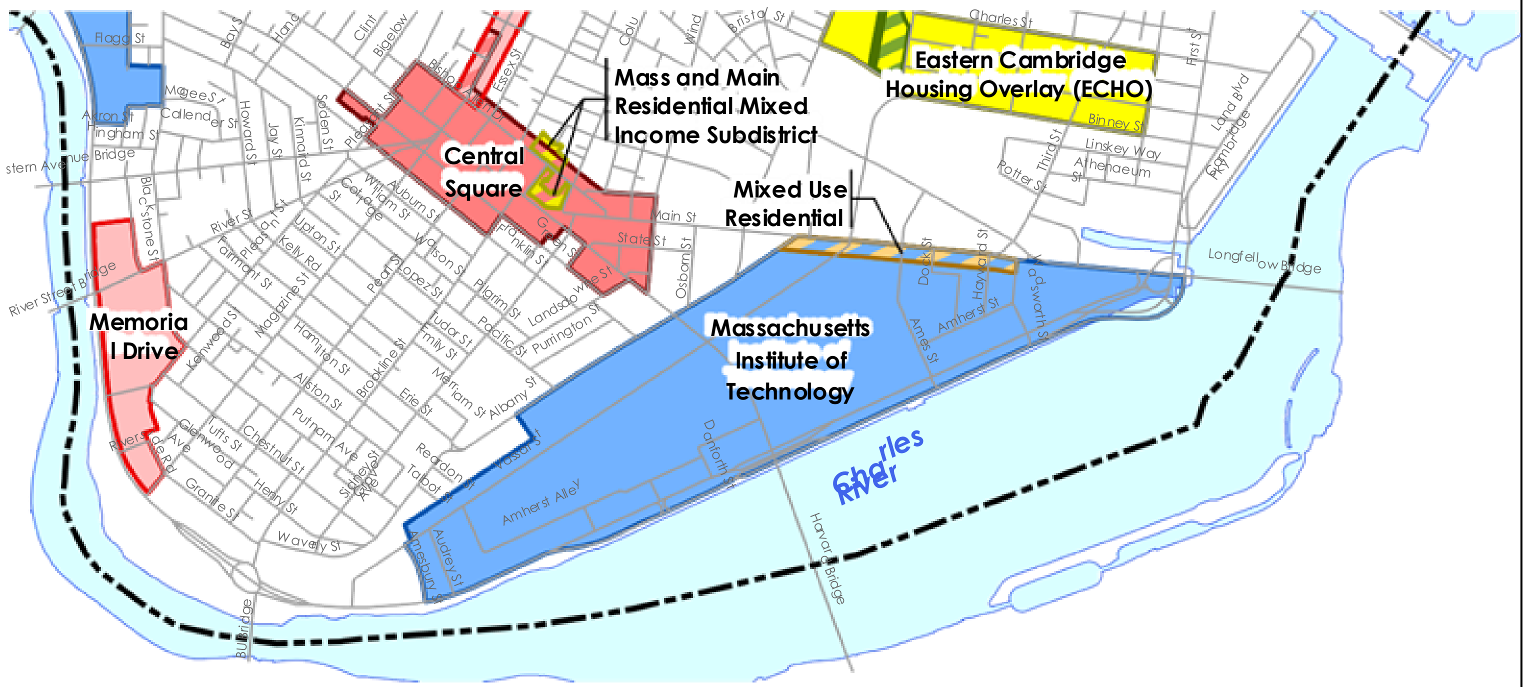
Cons:
1.Event and recreation spaces can become siloed (arts vs. athletics vs. spiritual), reducing cross-community mixing.

2.Accessibility can be challenging in some older buildings (e.g., Chapel's original entry was not fully accessible).

3.Large sports facilities may prioritize athletes over casual users.

ZONING





ANALYSIS OF DESIGN BRIEF AND FUNCTIONAL LIBRARY

THE DESIGN BRIEF

MAJOR REASONS FOR THE CONSTRUCTION OF THE STUDENTS CENTER

The primary reason for the construction of the Stratton University Student Center was to create a centralized, dedicated hub for student life and community engagement outside of the academic classroom

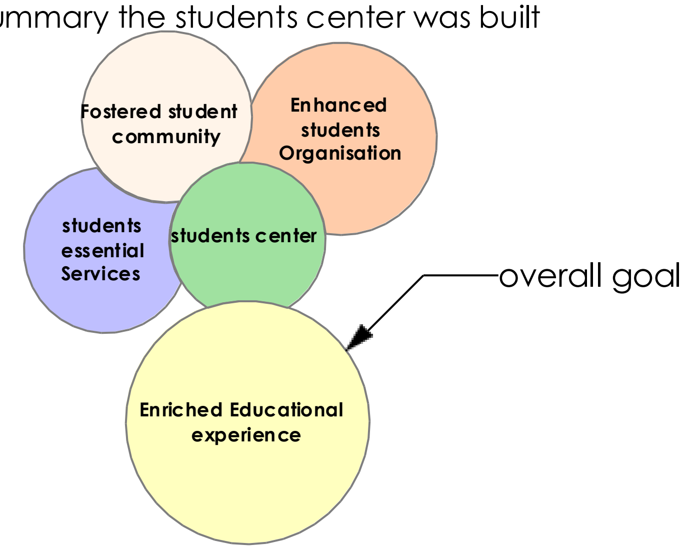
Before its existence, student activities were scattered across campus in basements of academic buildings, cramped dormitory lounges, and off-campus locations. This lack of a cohesive space led to several identified problems:

Fragmented Student Community: With no central gathering place, it was difficult to build a strong, unified campus culture

Inadequate Facilities for Growing Enrollment: A post-World War II enrollment boom, further accelerated by the GI Bill, meant the university's existing infrastructure was overwhelmed

The Need for a "Living Room" for Campus: University leadership and student advocates envisioned a space that would serve as the heart of campus-a place for students to eat, socialize, study collaboratively, host events, and access essential student services all under one roof.

In Summary the students center was built to;



Design Requirements for the Stratton University Student Center

The design of the Stratton University Student Center must fulfill its primary function as a comprehensive hub for student life, community building, and support services. The requirements are broken down into functional, experiential and aesthetic.

1. Functional & Programmatic Requirements

Social & Lounge Spaces: seating Areas

Food Service & Dining:
Main dining hall.
A food court

A ballroom .
Multipurpose hall
A campus bookstore
Recreation:

Student Organization & Leadership Space:
Commercial & Service Spaces:

2. Experiential & User-Based Requirements

The design must prioritize the human experience within the building.

Accessibility & Universal Design:. This includes elevators ,ramps
Inclusivity & Belonging: The design must feel welcoming to all students.
Digital signage for wayfinding and event promotion.
Ample natural light through large windows and skylights.
Clear signage for stairs to promote physical activity alongside elevators.

3. Aesthetic & Architectural Requirements

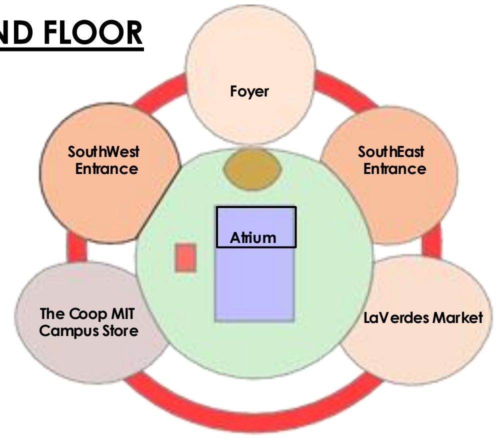
The design must balance tradition with modernity.

Iconic & Welcoming Facade: The exterior should be architecturally significant, creating a recognizable landmark on campus. The main entrance must be obvious, inviting, and feature a grand lobby.
"Campus Feel": Transparency & Connection:
Durability & Maintenance:

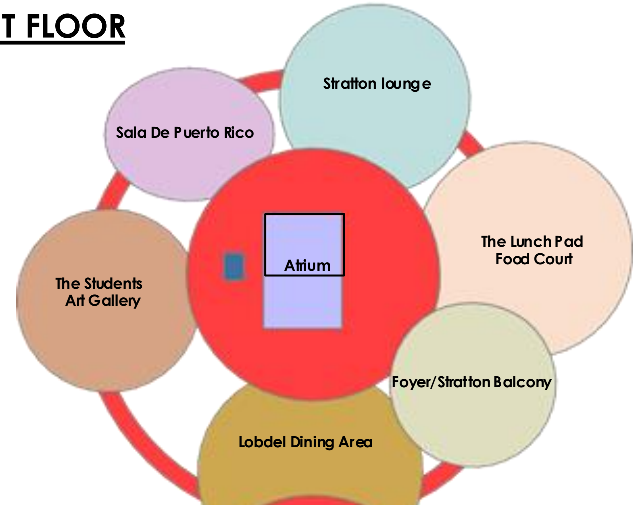
THE FUNCTIONAL LIBRARY

The Stratton university students center has an approximate area of 17500 Meters Squared

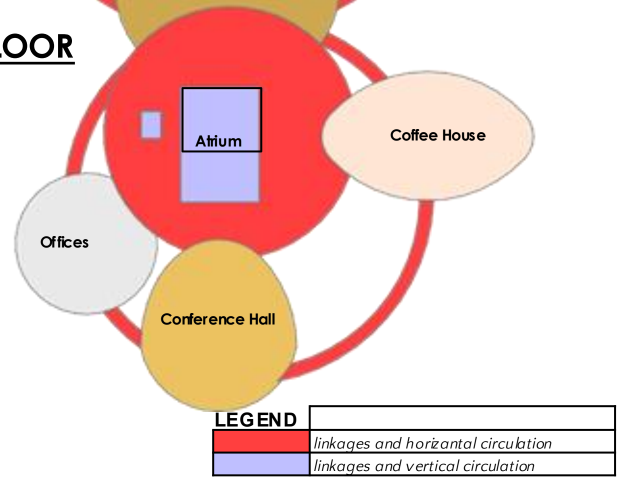
GROUND FLOOR



FIRST FLOOR



SECOND FLOOR




https://commons.wikimedia.org/wiki/File:MIT_Stratton_Student_Center.jpg


https://sah-archipedia.org/buildings/MA-01-MT16

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https://2015.mitcio.com/content/stratton-center-sala-de-puerto-rico


https://www.google.com/url?sa=i&url=https%3A%2F%2Fbetterworld.mit.edu%2Fstratton-student-center%2F&psig=AOvVaw1p2mQK3qrPySnhnWyEHkA0&ust=1757498086267000&source=images&cd=vfe&opi=89978449&ved=0CBgQjhxqFwoTCNC 3zea0y48DFQAAAAAdAAAAABAE


https://www.google.com/url?sa=i&url=https%3A%2F%2Flistart.mit.edu%2Fexhibitions%2Fstudent-lending-art-program-exhibition-lottery&psig=AOvVaw3JqhzLH8eNv1aCB8e1P_jP&ust=1757499549120000&source=images&cd=vfe&opi=89978449&ved=0CBgQjhxqFwoTCIDs9qO6y48DFQAAAAAdAAAAABAV


https://www.flickr.com/photos/mit-campus-activities/5057521226

MAIN DESIGN ASPECTS.

figure straton student center. source:

1. BRUTALISM
The design incorporates the use of materials in their raw form, exposed concrete, bricks and glass.

figure straton student center. source:

2. FACADE AND RYTHM
The facade was designed in a rhytmatic way.
rythm achieved through repaetition.

figure straton student center. source:

3. EXPRESSION OF STRUCTURE.
Structure is not hidden—it's expressed directly in the design (Brutalist principle).
Columns and floor lines are visibly articulated on the exterior.
Balconies/terraces align with slab levels.

4.CONCEPTUAL CONTEXT

Designed as a counterbalance to Saarinen's Kresge Auditorium (cultural) and Chapel (spiritual).

Embodies functionality + rationalism, vs. Saarinen's sculptural symbolism.
Acts as the social and activity hub of MIT — a "living machine" for student life.

FORM AND MASSING.

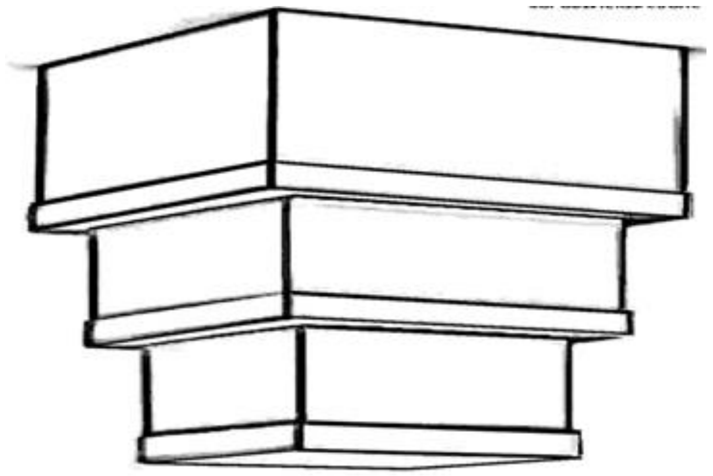


figure straton student center. source:

Use of simple rectangular blocks joined and stacked together to come up with the form of the student center.

figure straton student center. source:

The design then incorporates some terraces to break the blocks
Introduction of balconies also, to break the block like nature.

figure straton student center. source:

STRUCTURAL ORDER.

STRUCTURAL SYSTEM.

The design itself is a reinforced concrete frame.
It is supported by a modular grid system that not only supports the building but also gives it its proportions.

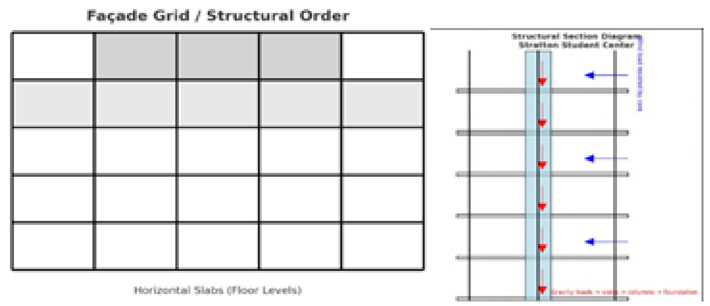


figure straton student center. source: betterworld.mit.edu

Integration of the support sytem with functions.
Structural grid allows flexibility for varied functions: bookstore, dining, lounges, offices.

figure straton student center. source: betterworld.mit.edu

CONCEPT.

1. A Social & Cultural Hub

The building was conceived as the heart of student life at MIT.
It wasn't just circulation and services — the idea was to create a living room for the campus, a place to eat, meet, study, and gather.

2. Contrast with Kresge & Chapel

Placed directly opposite Eero Saarinen's Kresge Auditorium (dome) and MIT Chapel (cylinder).
Conceptually, it was meant to balance those iconic sculptural forms with a more functional, rectilinear "box."
While Saarinen's work symbolized spirituality and culture, Stratton embodied everyday student life and activity.

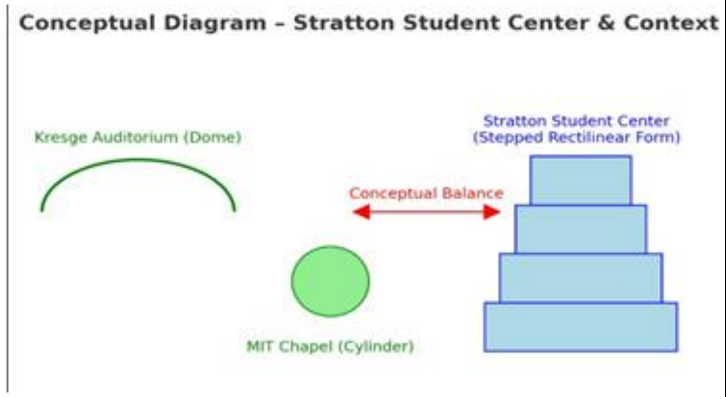


figure straton student center. source:CAD drawn. Ndira

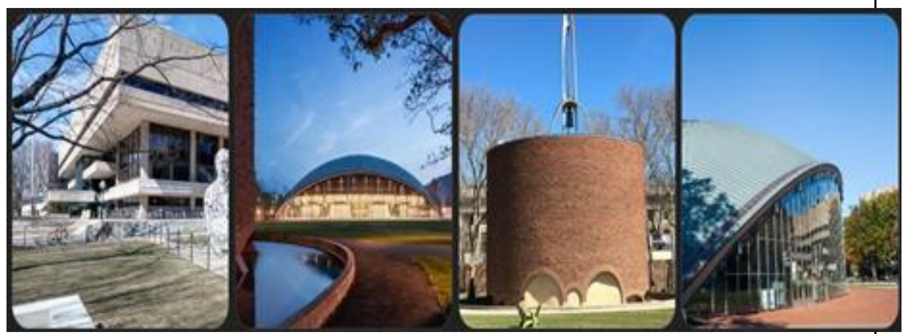
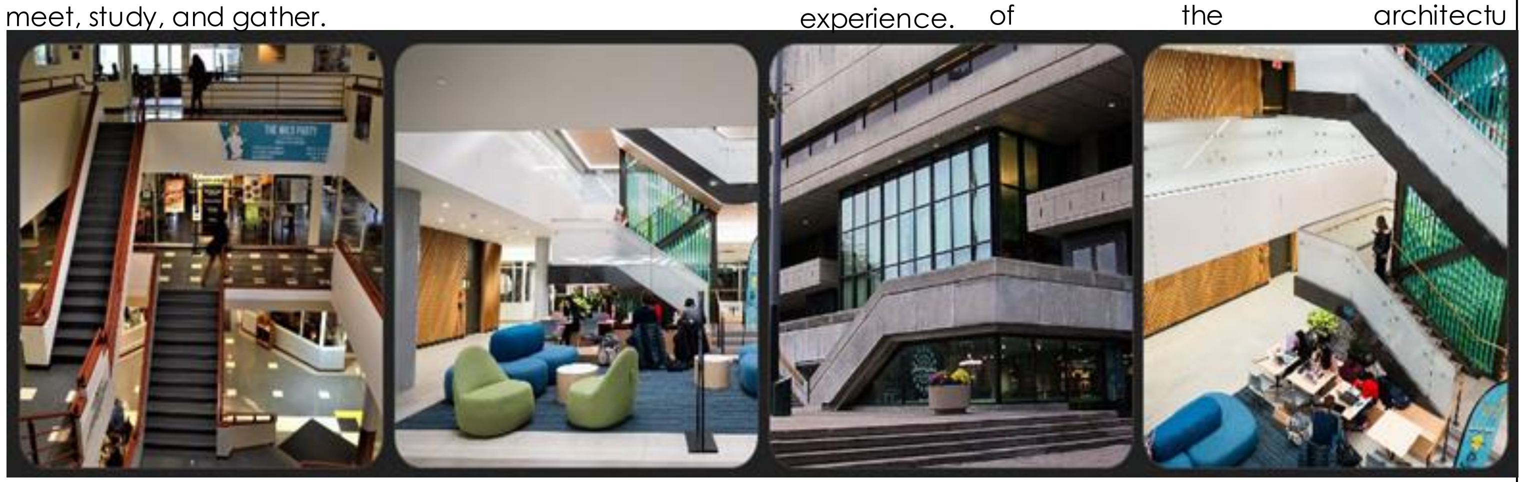


figure straton student center. source:betterworld.mit.edu

3.Transparency & Movement

The concept integrates vertical circulation (big op staircases, cores) as visible and celebrated — not hidden.
Atrium spaces allow light and openness, reinforcing stud interaction.
Circulation itself becomes part of the architectu experience.



LANDSCAPING

The landscaping aimed to balance hard plazas (for gatherings and circulation) with green areas (for relaxation, shade, and visual relie).

OPEN SPACES

1. **Hard Open Space (Plaza)**:
Wide paved forecourt facing Massachusetts Avenue. Designed for events, rallies, and circulation.

Critique: Too exposed, windswept, and monumental often underused.

figure Straton student center. Source https://sah-archipedia.org/buildings/ MA-01-MT16.

2. **Soft Open Space (Lawns + Trees):**
provided relief, human scale, and shade. More successful as casual sitting/resting areas.

figure Straton student center. Source https://sah-archipedia.org/buildings/ MA-01-MT16.

3. **Circulation Open Space (Pathways)**:

Formal, straight walkways guided movement between Mass Ave, Kresge, and athletic facilities.

Reality: Students carved desire paths across lawns → showing a gap between planned and actual circulation.

figure Straton student center. Source https://betterworld.mit.edu/stratton- student-center/

Aesthetic contribution

Prior to the renovation, the open concrete spaces felt stark and austere, reflecting the Brutalist style of the architecture. The introduction of greenery, including trees, shrubs, and planted areas, softens these hard surfaces and creates a more inviting environment

Functionality and Usability

Shade & Comfort: Trees and shrubs provide shaded areas along walkways for walking, resting, and socializing.

figure Straton student center. Source https://betterworld.mit.edu/ stratton-student-center/

Gathering Spaces: Lawns and open green areas serve as spots for relaxation, study, or informal events.

Guided Circulation: Pathways and plant arrangements direct pedestrian movement efficiently.

Versatility: Landscaping supports multiple activities—walking, sitting, gathering—making the plaza user-friendly.

Integration: Greenery enhances both usability and visual appeal, balancing built and natural elements.

LESSONS LEARNT

1.Human Scale Over Monumentality
2.Planned Circulation vs. Real Use
3.Balance Between Hardscape and Softscape
4.Flexibility & Adaptability
5.Integration With Context

SUSTAINABILITY AND INNOVATION PASSIVE DESIGN STRATEGIES

1) Daylighting strategies

Figure Atrium. Source: https://capitalprojects.mit.edu/projects/w20

Introduction of a three-story atrium allows natural lighting of the building.

Use of open staircases and glass railings around the atrium to allow light travel.

Figure. Natural lighting of lounge spaces.Source: https://betterworld.mit.edu/stratton-student-center/

Use of a double height volume bounded by glass to allow natural lighting.

2) Thermal design strategies

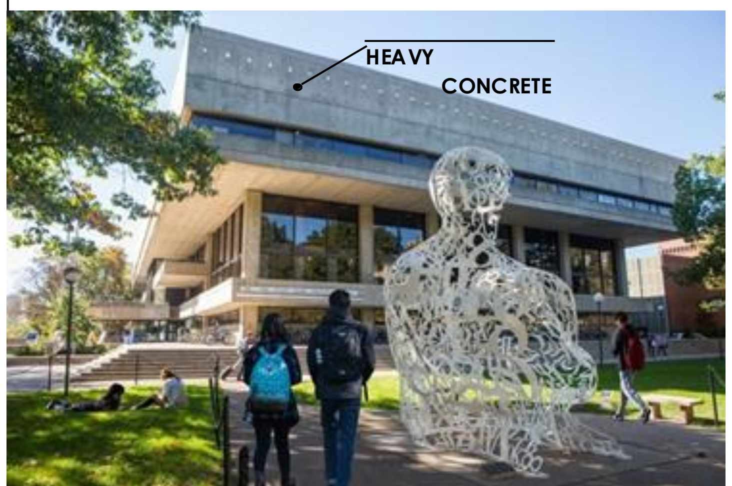


Figure Stratton student center.Source: https://betterworld.mit.edu/stratton-student-center/

The building uses concrete which acts as thermal mass, keeping the interiors cool during the day

Figure Stratton student center.Source: https://culturenow.org/site/stratton-student-center

The upper volume acts as an overhang, shading the building thus reducing solar heat gain.

Figure Stratton student center.Source: https://culturenow.org/site/stratton-student-center

The thin band of windows are recessed, reducing heat gain.

SUSTAINABLE MATERIAL USE

Figure Stratton student center.Source: https://sah-archipedia.org/buildings/MA-01-MT16

The main material used is exposed concrete which is durable in the long term.

Also, material honesty on the exterior reduces maintenance since there are no decorative finishes.

LANDSCAPE INTEGRATION

Figure Landscaping around Stratton student center.Source: https://sah-archipedia.org/

The surrounding greenery brings cooling and reduces the urban heat island effect.

RENEWABLE ENERGY

Installation of solar panels on the rooftop is planned so as to reduce the carbon footprint.

Figure Solar panels on building W46 Source: https://sustainability.mit.edu/

CERTIFICATION

The building has Fitwel 1-star rating which focuses on health and well being of occupants.

It was earned due to good air quality and access to natural light in the building.

INNOVATIVE STRATEGIES

Structural adaptation

Over 300 tons of concrete were removed to create the atrium for lighting and social interaction.

Figure Open lounge area.Source: https://betterworld.mit.edu/stratton-student-center/

Flexible interiors

The building has adaptable spaces with movable furniture to accommodate different activities.

Figure Stratton reading room.Source: https://milderfurniture.com/furniture/mit-stratton-student-center-2/

LESSONS LEARNT

Enhance energy efficiency through natural lighting and passive cooling.

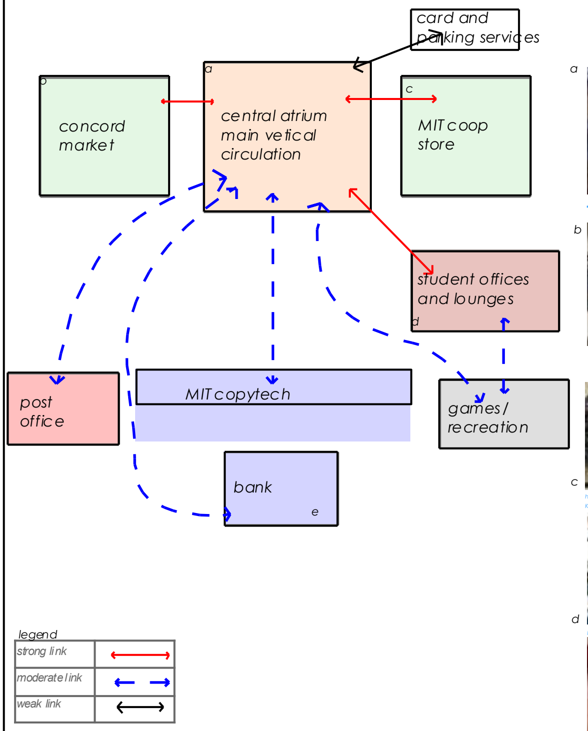
Integration of landscape to the design to reduce urban heat island effect and enhance wellness.

Design of flexible and adaptable spaces to accommodate change of use without much design alterations.

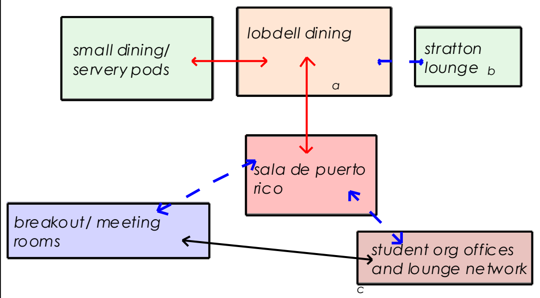
Use of sustainable materials for an extended building lifespan.

SPATIAL ORGANISATION

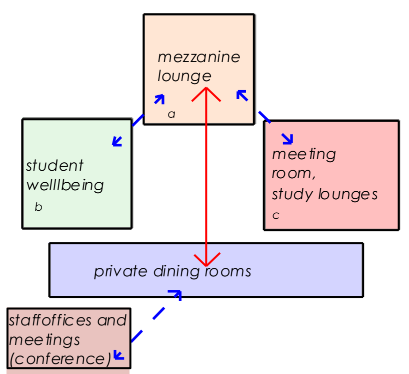
GroundLevel (Service & Recreation):
Spaces: Laundry facilities, barber shop, game room (pool table), club offices, storage.
Arrangement: serves as the building's utilitarian and recreational "basement," services and informal activities. It's directly connected to the main circulation.



Second Floor (Focused Activity):
Spaces: The MIT Press Bookstore, additional lounge areas, meeting rooms, administrative offices for student groups, and the MIT Chapel (though a separate building, it's accessed via a bridge on this level).
Arrangement: This floor houses more focused, quieter activities.. The arrangement facilitates a transition from the noisy, social first floor to more contemplative spaces.

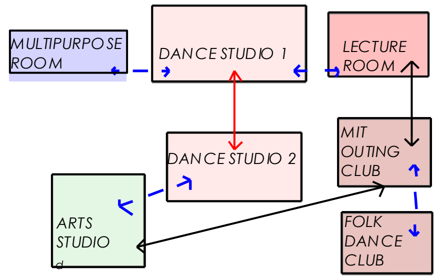


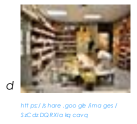
Third Floor :
Spaces: Offices for major student organizations (e.g., The Tech newspaper, MIT Radio), conference rooms, and study lounges.
Arrangement: This is the most private and quiet level, dedicated to management, production, and focused work. It is removed from the heavy foot traffic below.



Mezzanine Level (The "Connective Tissue"):
Spaces: Historically housed the faculty club; now contains more lounge and study nooks.
Arrangement: ~~This intermediate level provides visual connectivity between floors~~

fourth floor: provides spaces dedicated to dance, arts, multipurpose use, and student organizations. It includes dance studios, a multipurpose room, a lecture/meeting room, an arts studio, and club spaces.



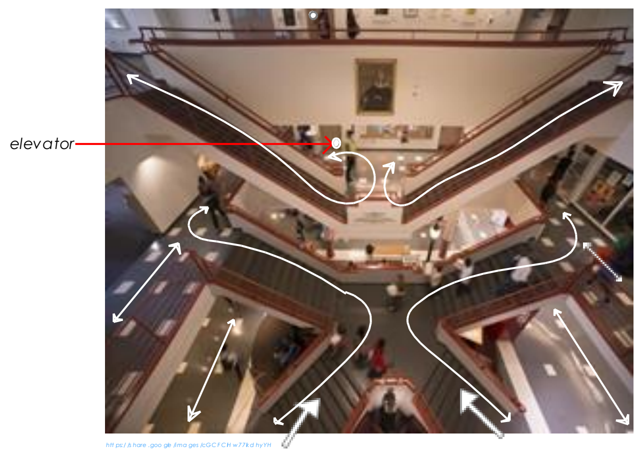


2. Patterns of Horizontal and Vertical Circulation

A. Horizontal Circulation
The horizontal circulation is largely open-plan and non-linear.

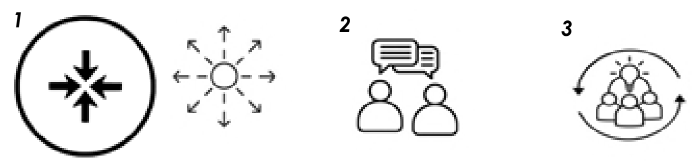
First Floor: The space is designed as a "piazza" or "urban street."

B. Vertical Circulation
Vertical circulation is centralized, expressive, and multifunctional.
The **Main Staircase**: staircase acts a sculptural feature in the main lobby.
Function: It efficiently moves large numbers of people.
Symbolism: It acts as a "public forum" or "theater seating."
Elevators:
Secondary Stairs: Located at the peripheries for fire exits and secondary movement, ensuring the main stair can remain a social space.



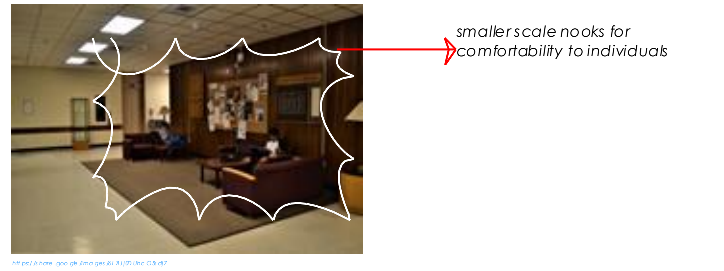
3. User Patterns

The spatial and circulatory design directly dictates vibrant and varied user patterns:
1. **Convergence and dispersal**:Students converge on the food court from all directions (exterior doors, the main stair, elevators) and then disperse to sit in the Commons, on the main stair, or in lounges.
2. **Interaction**: The open plan and the central staircase are designed to maximize visual contact.This encourages chance meetings and informal socializing.
3. The **"See and Be Seen"** Culture: The main stair is a stage. This caters to extroverted patterns while also providing a sense of community for those just observing.



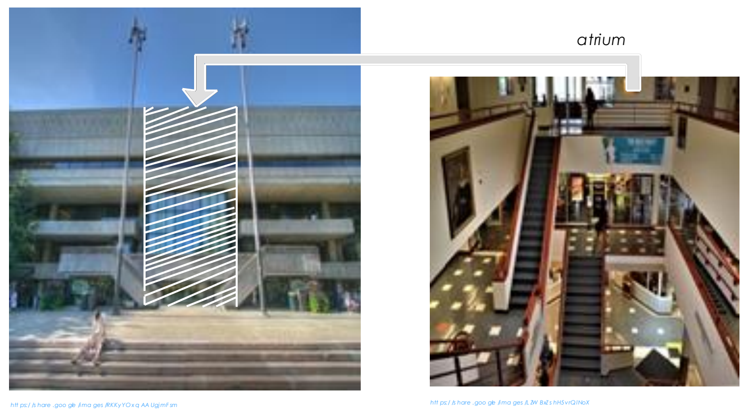
Key Takeaways :
Urban Analogy: Frame the building not just as a structure but as a miniature, internalized city.(symbolic)
Circulation as Space: the main staircase acts as the social and symbolic heart of the building.Envokes for desinging multi-functional space, not just a circulatory element.

Human Scale: Despite its large volume, the creation of smaller-scale nooks, alcoves, and varied ceiling heights within the open plan prevents the space from feeling overwhelming.



INTERIOR DESIGN ANALYSIS

1. **Volumes and Levels:** The interior is defined by contrast in volumes, creating a dynamic and engaging experience.
The Grand Volume (The "Agora"):
The central core of the building, spanning the first and second floors Effect: It creates a sense of arrival, grandeur, and collective energy.



2. **Materiality and Texture:** The interior material palette is honest, durable, and texturally rich, continuing the Brutalist ethos of the structure.

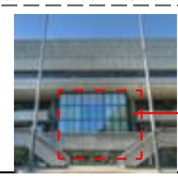
2.Terrazzo: Used on flooring in main circulation paths and lobbies.The speckled pattern hides dirt and wear, and reflects light,brighten the space.

4.Wood: The crucial warm counterpoint to the cold concrete and terrazzo. Used for:

a)Acoustical Panels: Large panels on walls and ceilings to absorb sound in the reverberant large volumes.

b)Furniture: Benches, planter boxes, and railings.

3.Brick: Some interior feature walls exposed brick, continuing the exterior material language inside

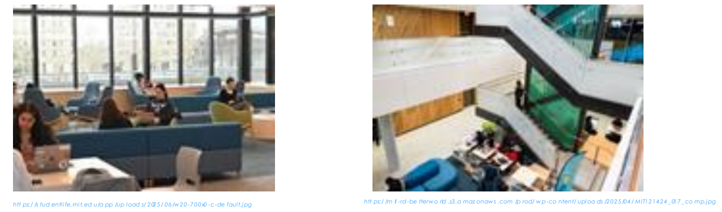


5.Steel: Used for handrails (sleek, black-painted surfaces), light fixtures, and furniture frames,curtain wall.

3.**Colour Scheme**: ~~Subdued and Natural~~
The colour scheme is derived from the natural colours of the materials themselves.

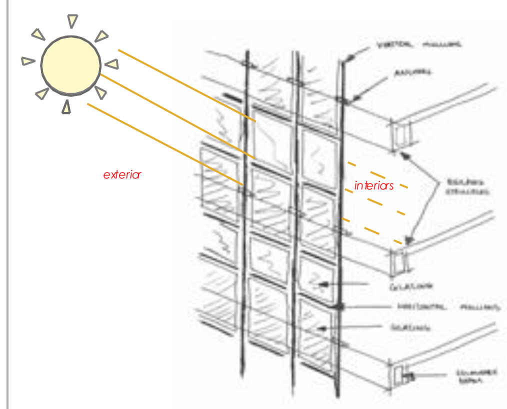
Neutral Base: The backdrop is a palette of grays (concrete), beige/white speckle (terrazzo), and warm browns (wood).

Furniture: Chairs and sofas in bold, solid colours green, blue
Artwork: Wall graphics, murals, or student art.



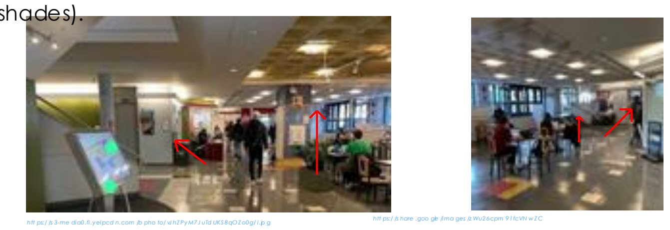
4. **Lighting Design**: Functional and Atmospheric
Lighting is used to define zones and create mood, complementing the abundant natural light.

Natural Light: The large curtain walls flood the perimeter spaces with daylight. In the central atrium, light pours down from the high windows on the upper floors.



Artificial Lighting:

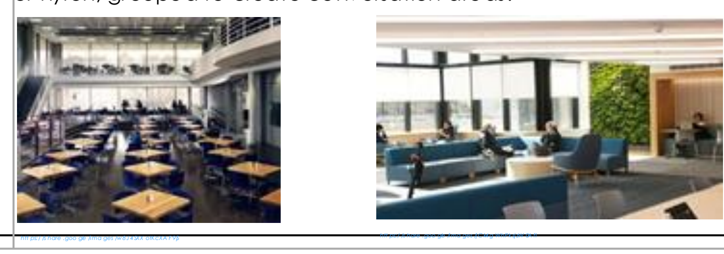
General Ambient Lighting: In high ceilings, provided by recessed downlights (minimalist pendant fixtures with metal shades).



Task Lighting: At the mezzanine level, in study nooks, and over tables, more lighting is used—swing-arm lamps, smaller pendants fixtures
Accent Lighting: track lighting used to highlight the texture of the concrete stair , a brick wall.

The overall ambient light level is functional and with pools of warmer, lower light in seating areas to create ambience.

Furniture:
(mid-century modern principles.)
Built-in: Banquette seating in the food court, **Chairs:** Fiberglass shell chairs. (stackability and durability)
Tables: Simple, robust tables with tubular steel bases and laminate tops,to clean and rearrange.
Lounges: Upholstered sofas and armchairs in durable fabrics like wool or nylon, grouped to create conversation areas.

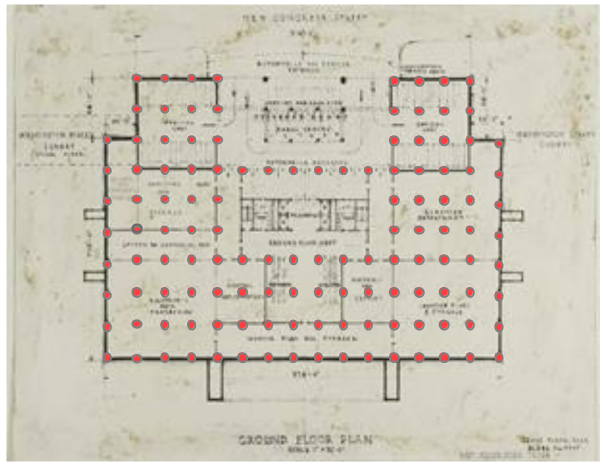


BUILDING TECHNOLOGY

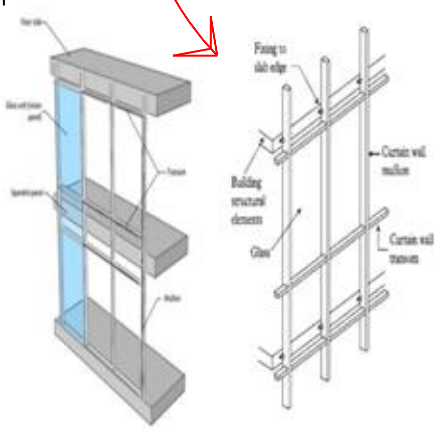
1. Primary Structural System

The building employs Structural Frame system.
Material: Reinforced Concrete (Cast-in-Place).It offers strength, fire resistance, and formal flexibility.

Assembly:
The structure is based on a regular grid of columns supporting horizontal concrete beams and slabs.
The columns are rectangular and are expressed on the interior, defining the rhythm of the spaces.
The floor slabs are concrete slabs spanning between supporting beams.



ground floor plan of the Juulius Adams Stratton student centre



Glazing: Single-pane glass .The primary function was daylighting and views

Spandrel Panels: Between the floors, the sections of the wall that conceal the edge of the concrete floor slab

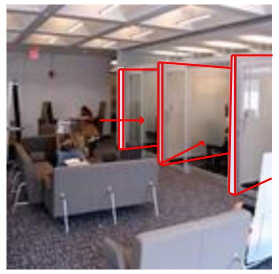
Curtain Wall: extensive bands of aluminum-framed windows.repetitive assembly of fixed and operable units.
Technology: use of a modular, prefabricated curtain wall system .

3. Interior Partitions & Spatial Definition

The interior uses a variety of partition systems to create a hierarchy of spaces, from open-plan to private.

Demountable Partitions:This allows for flexibility and future reconfiguration.
Spatial Definition without Walls:the use of changes in floor level (mezzanines, sunken lounges) and placement of the structural grid to define spaces without building full-height walls

moveable partitions



change in floor levels to defines spaces

4. The Main Staircase

Construction:It is cast-in-place concrete(sculptural).
Assembly: The stair is monolithic giving it a sculptural presence.

5. Material Palette and Finishes

The design employs durable, honest materials that balance texture, warmth, and performance:

- Concrete - Exposed in structure, ceilings, and monumental stair, expressing strength and honesty.

- Brick - Adds warmth and texture on exterior spandrels and some interiors walls.

- Terrazzo - Durable, low-maintenance flooring for lobbies and circulation.

- VCT Tiles - Practical choice for offices and lounges, easy to replace.

- Wood - Used in furniture, acoustical panels, and handrails to soften interiors and improve acoustics.

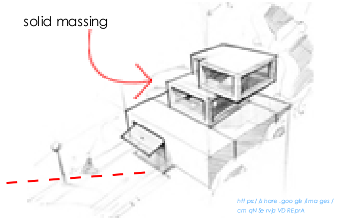
- Steel - Painted or structural, used in frames and railings for strength and detail.

FACADE DESIGN

The elevations follow the principle of "form follows function." each element of the facade is a direct representation of the internal program, structure, and circulation. The design is modular

1. Dominance of Solids vs. Voids

The balance between solid and void is not symmetrical but is strategically deployed to tell the story of the building's interior.
Solid Massing (The Podium): The building presents itself as a solid, horizontal block.



Voids (The Windows): The voids are the large, vertical, ribbon windows punched into this solid mass.

- modular grid that corresponds to the building's internal structural bay spacing.

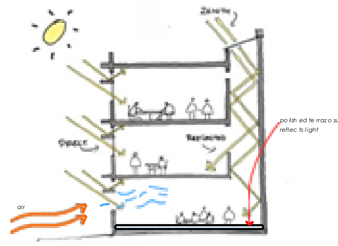
Overall Composition: The elevation is a composition of horizontal bands of solid brick (spandrels) alternating with vertical bands of glass (the windows).

2. Fenestration: Pattern, Purpose, and Detail

The window design is one of the most distinctive features of the elevation.
Pattern: Each bay has a large fixed glass pane for light and views, with smaller operable windows on the sides for ventilation.

Purpose: The fenestration strategy is purely functional:

Frame Views: The windows are carefully sized and placed to frame views.



Daylighting: To flood the interior spaces with natural light

Ventilation: The operable units provide user-controlled fresh air

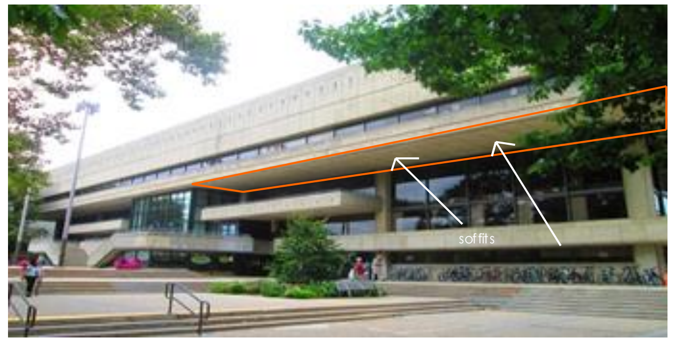
Detail: The windows are set within a thin, minimalist aluminum frame.
This choice is significant:
It provides a sharp, clean, and modern contrast to the heavy, traditional brick.

the designs mimics the overall institutions architectural style of the buildings

3. Materiality and Cladding:

Brick Veneer (Spandrels)
Function: It acts as a durable, low-maintenance cladding , It provides thermal mass and weather protection.
Contextual Response: create a visual link to the existing brick architecture of MIT

Aluminum and Glass (Curtain Wall):
Function: aesthetic- The sleek, industrial look of aluminum signifies the institution's focus on engineering and technology.



Cast-in-Place Concrete (Structural Elements):
the raw concrete structure is expressed on the exterior, particularly on soffits . Its rough, textured finish provides another layer of material honesty.

5. Integration with the Landscape and Site

Horizontal Emphasis: The strong horizontal lines of the spandrels and ribbon windows make the building spread out and touch the ground. (pavillion like feeling)

Transparency: The first floor , features increased glazing , full-height glass to promote visual connectivity between the lively interior activities and the outdoor space, inviting people in.

Synthesis: The elevation expresses the building's layout — horizontal brick strips show floor levels, while vertical window reveal structural frame and interior spaces.

Honesty:The elevation truthfully represents what happens behind it.
The solid parts hide solid, serviced spaces; the transparent parts reveal the active, daylit, social spaces.

the design blends smoothly into the surrounding landscape

similar archiretal style to the surrounding buildings

USER FEEDBACK AND ADAPTIVE CHANGES

The Stratton Student Center, or "The Stud," has long been a central hub for student life at MIT, valued for its location, amenities, and 24-hour study spaces. While students appreciated these features, they also noted challenges with the building's layout, underutilized areas, and heavy, unwelcoming aesthetic. These observations reveal the key challenges that shaped student experiences

in the center and set the stage for its eventual renovation.

1.SPATIAL USE ADJUSTMENTS

Feedback:Need for more group friendly zones and fewer 'strictly silent' zones.

CHANGES

1. Quiet study rooms reconfigured into flexible open plan collaboration zones with;
   a) Modular movable furniture
   b) Writable walls for brainstorming
   c) Tech integration

Figure Dining area prerenovation.Source: MIT student life archives

2.Reconfiguration of the central staircase to create more space on the ground floor level that can be used for programming.

Figure : MIT Stratton Student Centre. Source https://sah archipedia.org/buildings/2

3. Enhancement of lounge networks to encourage informal gatherings and collaborations on each floor of the building. This includes;
   a) New flexible lounge on the first floor
   b) Revitalized stratton lounge on the second floor
   c) Repurposed space on the fourth floor
   d) Two fourth floor multipurpose rooms upgraded to acccomodate dance and movement activities as well as communal gatherings

Figure Interior lounge with increased visual connectivity.Source MIT spectrum

2.FACADE AND EXTERNAL ADJUSTMENTS

1.Transparency and openness

Feedback:Original-brutalist- facades felt too enclosed and institutional where students complained that the building looked like an administrative block rather than a lively student hub.

CHANGES

1.Larger glazing panels and curtain walll introduced to create visual permeability.

Figure. Natural lighting of lounge spaces.Source: https://betterworld.mit.edu/stratton-student-

2. Recladding the external wall with lighter finishes
3. Entrances redefined with canopies and wider doors.
4. Integration with open space by adding outdoor spaces and seating edges creating spillover spaces from the cafes and lounges.

3. INTERIOR AMBIENCE AND CULTURAL EXPRESSION

Feedback:Earlier interiors were monotonous,instituional and impersonal discouraging long stays.

CHANGES

1. Interiors were redesigned with warmer materials,varied lighting and flexible furniture
2. Student art and cultural displays integrated into design to personalize the environment.

Figure Augmented reakity ural project in the MIT tunnels.Sourcehttps://arts.mit.edu/

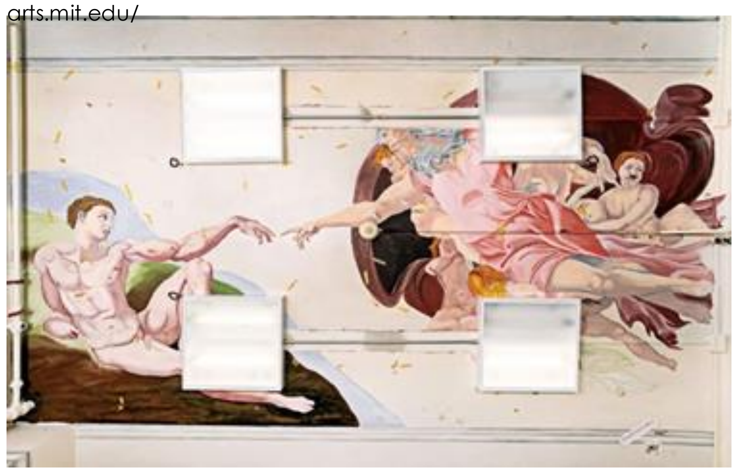


Figure Reinterpretation of Michelangelos the Creation of Adam.Sourcehttps://studentlife.mit.edu/arts/murals

4.BUILDING SERVICES AND FUNCTIONALITY

Feedback:Poor acoustics in event halls,inadequate ventilation and inconsistent lighting reducing comfort.

CHANGES

1.Acoustic treatments were introduced.
2.HVAC systems modernized.
3. Lights reconfigured for both task and ambient needs.

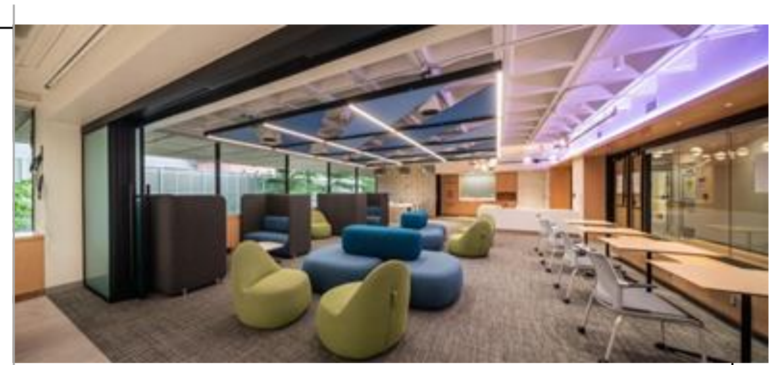


Figure Lounge with a reconfigured lighting system.Source MIT spectrum

5.COMMUNITY,IDENTITY AND SOCIAL VIBE

Feedback:Spaces felt disconnected from student life,underutilized and less vibrant. CHANGES

1. Visible club spaces,dining areas and event lounges revitalized the social spaces.

Figure. Natural lighting of lounge spaces.Source: https://betterworld.mit.edu/stratton-student-center/

LESSONS LEARNT FROM THE USER FEEDBACK

1.Flexibility and inclusivity-spaces should adapt to multiple uses and serve different users.

2.Clarity of movement-open layouts and intuitive

circulston improve user comfort.

3.Visibilty drives vibrancy-social,dining and club spaces must be easy to find.

4.Transparency and openness-glass wallls and open layouts foster connection and welcoming environment.

Chapter 5: Reflections on the American University of Cairo Campus Centre

The focus of discussion here is on a well analysed international, award-winning precedent of an architectural design project of a Student Centre, and in its analysis that emphasises concepts and technical considerations.

B.A.S Year IV
Contributing student researchers and designers, 2025/26 academic year, group 3

Zeeyad Balala
Jerome Owuor
Melody Njuguna
Beirb Kago
Ahmed Pole
Perpetual Kirumba
Trevor Prince

PROJECT BACKGROUND

PROJECT INFORMATION

Name: Campus Center (Student Center), AUC New Cairo.

https://www.sasaki.com/projects/the-american-university-in-cairo-new-campus/

- Founded in 1919, originally at Tahrir Square.
- Relocated in 2008 to a 260-acre campus in New Cairo.
- Designed to support ~5,500 students with modern and cultural identity.

Style, Philosophy & Vision

- Style: Modern + Egyptian tradition
- Philosophy: Oasis of learning
- Vision: Social & cultural heart of campus
- The concept was to make the campus feel like a contemporary version of historic Cairo: a sequence of shaded courtyards, plazas, and streets that echo Islamic Cairo's urban fabric.

https://keystoneacademic-res.cloudinary.com/image/upload/c_fill,w_1920,h_636,g_auto/dpr_auto/f_auto/q_auto/v1/element/61/61301_cover.jpg

https://www.sasaki.com/

PROJECT TIMELINE

- PLanning and design phase: 1997-1999
- Construction phase: 2005–2008.
- Inauguration: 2008 with full campus opening.

https://continuousarchitecture.org/wp-content/uploads/elementor/thumbs/Shahrak-e-Gharb-Ghods-Iran-Master-Plan-and-Conceptual-Design-cropped-q4v9nv4kcub2h1e9ltfsqxct7pbhtbt3fs6c76c3n4.jpg

https://continuousarchitecture.org/wp-content/uploads/elementor/thumbs/Iran-Zamin-School-q4iuq2rxs0lnb8pknx2gs4me3lu0vigtaq808utoj4.jpg

Area, Capacity & Cost

- Campus area: 260 acres (~1.06 million m²)
- Built-up area: ~250,000 m²
- Campus capacity:~5500 students
- Campus cost: ~400 million USD

Architects

1. Boston Design Collaborative
2. Abdelhalim Ibrahim
3. Sasaki Associates
4. Ricardo Legorreta (Mexico) + Shahira Fahmy (Egypt)

https://continuousarchitecture.org/video-mr-mozhan-khadem-interviewed-by-archi-times-architect-mozhan-khadem-on-american-university-in-cairo/

1. Mozhan Khadem(Boston Design Collaborative)
   - American-Iranian architect.
   - Developed the master plan in 1999.
   - Vision: "continuous architecture," where courtyards and shaded walkways guide movement like historic Cairo streets.

2. Abdelhalim Ibrahim Abdelhalim
   - Renowned Egyptian architect.
   - Executed the design and translated the master plan into reality.
   - He called the campus an "oasis of learning", rooted in Egyptian traditions of space, ritual, and memory.

https://www.archdaily.com/946072/renowned-egyptian-architect-abdelhalim-ibrahim-abdelhalim-wins-2020-tamayouz-lifetime-achievement-

3. Sasaki Associates
   - American design firm.
   - Designed key academic buildings.
   - Their work includes interior courtyards that evoke Cairo's traditional architectural forms and integrate seamlessly with the campus's Academic Mall.

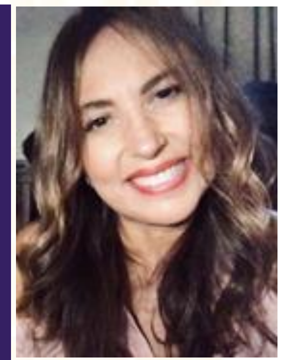
https://www.archidatum.com/media/6277/the-international-american-university-in-new-cairo-11.jpg?width=656px&height=441px

4. Ricardo Legorreta
   - Mexican modernist, famous for bold colors and geometric forms.

5. Shahira Fahmy
   - Egyptian architect, focused on blending tradition with modernity.

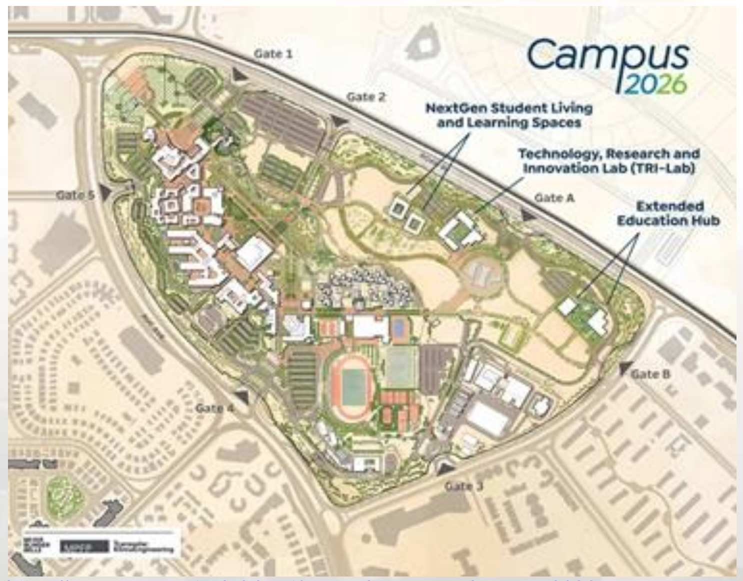
- Together, they designed the Student Center, making it the vibrant heart of campus life.
- Colorful, modern residential buildings rooted in courtyard tradition.

https://www.legorreta.mx/fotos/lista/398.jpg



https://www.aucegypt.edu/sites/default/files/inline-images/aucshahira.jpg

https://www.aaicu.org/the-american-university-in-cairo/



https://www.aucegypt.edu/about/new-cairo-campus/campus-2026

DESIGN BRIEF

1. Project Overview

The Campus Centre at the American University in Cairo (AUC) is the heart of student life in the New Cairo campus. It was designed to integrate academic, social, and cultural functions within one central complex. The Centre serves as a hub where students, faculty, staff, alumni, and visitors converge, reflecting AUC's mission as a liberal arts university with deep regional roots and global outlook.

2. Purpose & Objectives

a)To provide a centralized space for student activities, services, and administration.

b)To promote community building, interaction, and inclusivity.

c)To create a campus landmark embodying both modern design and Egyptian architectural heritage.

d)To facilitate cultural, intellectual, and social exchange.

4. Architectural & Design Characteristics

Style: Combines contemporary architecture with traditional Egyptian motifs such as courtyards, mashrabiyas, and stone finishes.

Circulation: Positioned centrally with strong pedestrian connectivity to academic buildings, libraries, and outdoor plazas.

Scale: Designed as a large-scale civic building, making it a landmark within the campus.

Sustainability Features: Shaded courtyards, natural ventilation strategies, and energy-conscious materials.

FUNCTIONAL AREAS

Academic & Meeting Spaces:

- Mary Cross Lecture Hall
- Mohamed Shafik Gabr Lecture Hall
- Moataz Al Alfi Hall (University Conference Hall)
- Bassily Auditorium
- Conference and Visitor Center with VIP Lounge

Student Life & Recreation:

- Student Union and offices
- The Bartlett Room (Student Lounge)
- Multiple student workspaces
- Student Activity Room (Irene Manias Squyres Memorial)
- John D. Gerhart Music Room (Instrumental/Choral Music Rehearsal)

Figure 2
PEPSI ENTRANCE

Figure 3
Americana food court

Dining & Commercial:

- Americana Food Court (indoor and outdoor seating)
- Bookstore, copy center, gift shop, and travel office

Outdoor Areas:

- Abla Leheta and Souhail El-Taji El-Farouki Courtyard
- Arnold Pavilion
- Larry H. Hyde Terrace
- Various fountains and water features

Family Services:

- Day Care Center with Sherry Arnold Children's Courtyard and Nana's Playground

Figure 1
Bartlett Lounge

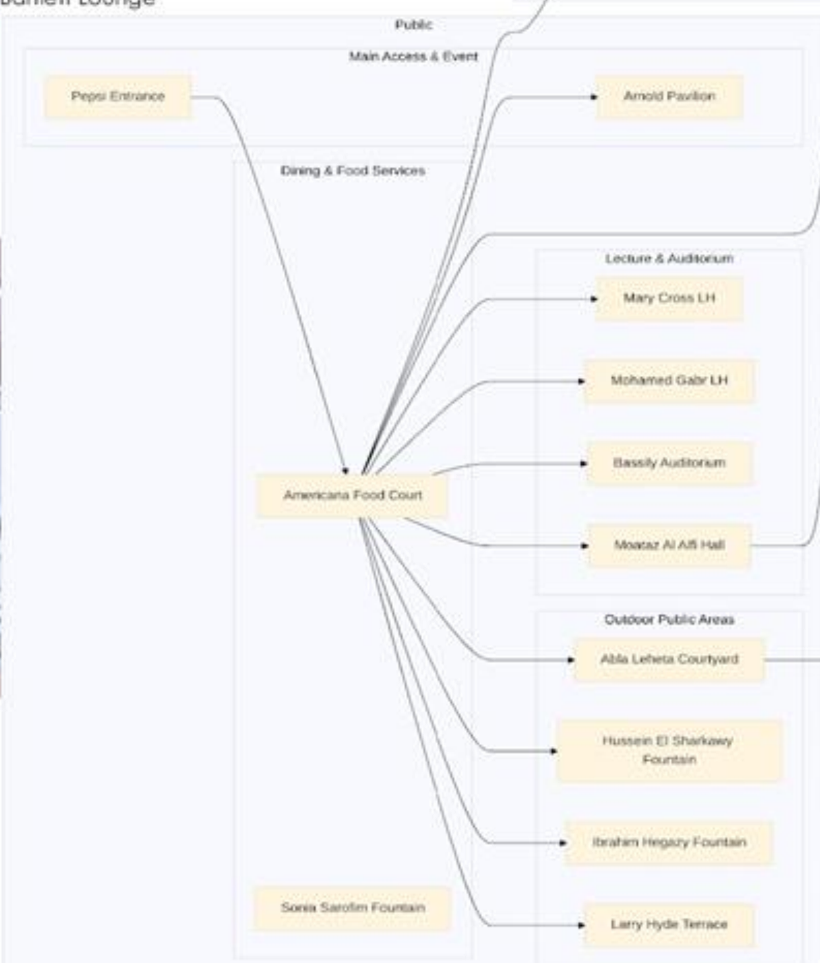


Figure 4
John Gerhart centre

Figure 6
Sherry Arnold reading stories to the children

Figure 5
BARLETT PLAZA

Figure 7
Abla Leheta and Souhail El-Taji El-Farouki courtyard

Figure 8
Abla Leheta and Souhail El-Taji El-Farouki courtyard

Figure 9
Master plan

AMERICAN UNIVERSITY IN CAIRO-GROUP 3

PHILOSOPHY OF THE DESIGNS

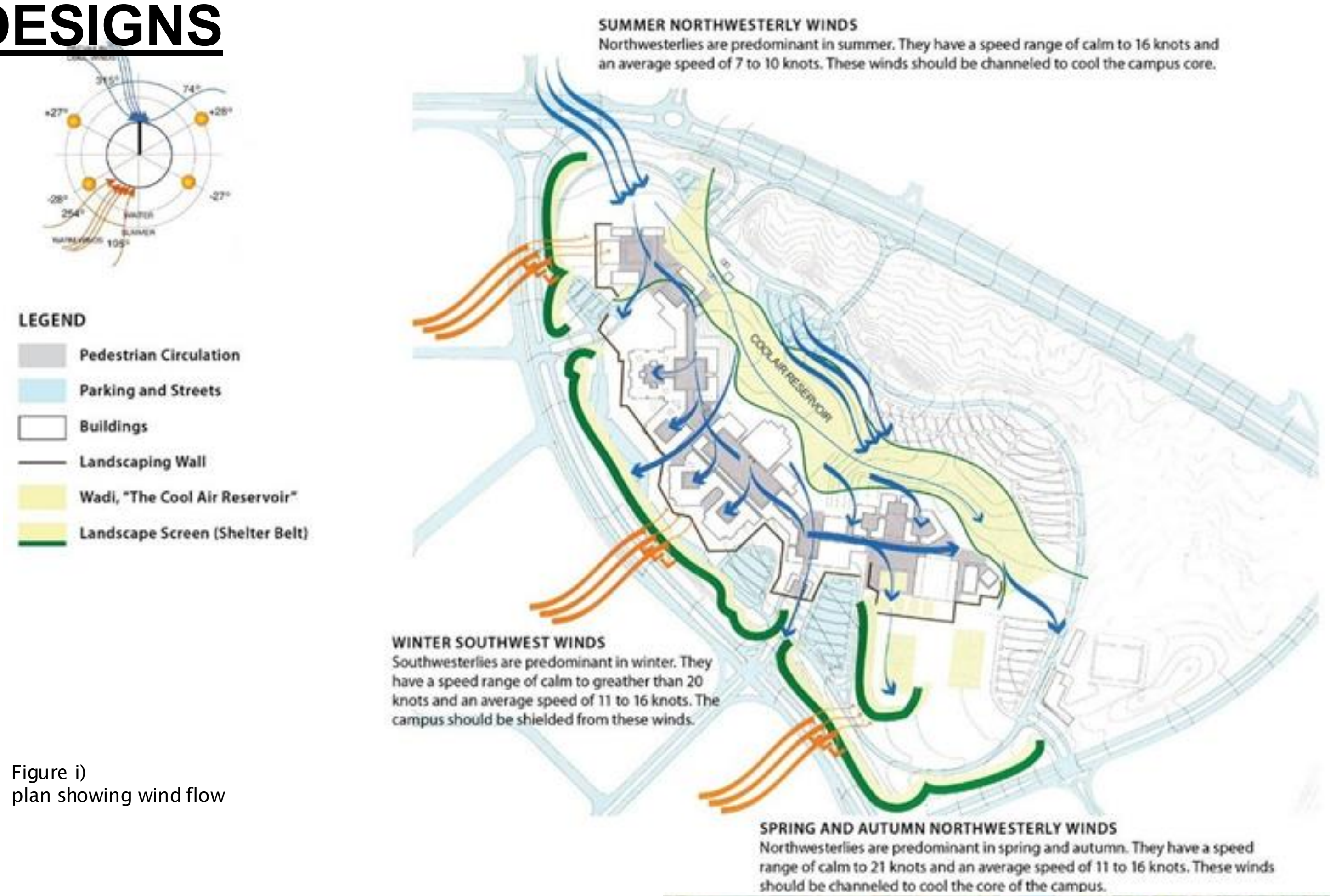


Figure i)
plan showing wind flow

Figure iii)
Abla Leheta '69 and Souhail El-Taji El-Farouki '68 Courtyard

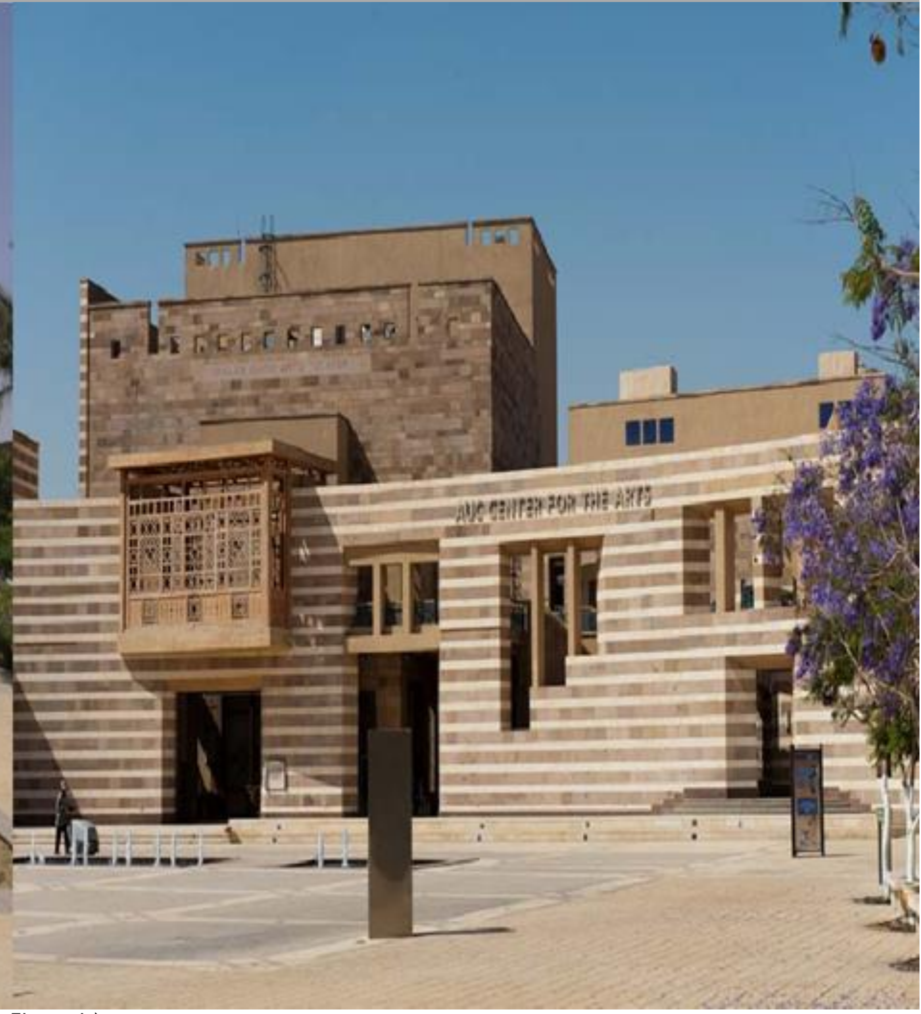


Figure iv)
AUC Centre for the Arts

PHILOSOPHY OF THE OVERALL CAMPUS

Mozhan Khadem(the (Principal in charge, Director of Design) had a design philosophy of "continuous architecture with a sense of place".

BDC(Boston Design Collaborative) conceived the design of the entire AUC campus as the architecture of **continuous interior spaces that surrounds the observer** rather than the architecture of **isolated buildings (solids) that stand apart from him/her.**
In this kind of architecture, **voids become more important than buildings**, and the design will become **based on the sequence of open spaces and courtyards** each designed for different functions of movement, introspection, interaction, and spiritual rejuvenation.
As these spaces **unfold in a rhythmic and hierarchical sequence before the eye of the pedestrian**, they impart a delightful sense of surprise. They acquire their meaning through the movement of the observer through these spaces. Thus, architecture acquires a **kinetic quality**.

Figure ii)
Form and Massing

Fgure vi)
Master plan

PHILOSOPHY OF THE CAMPUS CENTRE

Ricardo Legorreta **(1931-2011)** was a renowned Mexican architect whose work profoundly influenced **modern architecture**, particularly through his unique blend of **traditional Mexican aesthetics with modernist principles.**

Legorreta's philosophy centered on the **human experience and cultural identity**. He believed **architecture should evoke emotion** and respond **harmoniously to its context**, moving beyond mere functionality.
He achieved these in The campus centre through:
a)Blending Tradition and Modernity: The campus design, including the Campus Center, aims to express the University's educational mission by weaving Egyptian architectural traditions into a modern urban design.

Figure a)
Photo by Barry Iverson

b)Emphasis on Human Experience and Functionality: The Campus Center is divided into three distinct buildings—Every Day Facilities, Community Services, and Student Convention Center—each designed to cater to specific daily needs and foster community interaction.

Figure b)
Photo by Barry Iverson

Respect for Site and Climate: The design explicitly considers the local climate. For instance, the dining hall pavilion has a north orientation to take advantage of wind and reduce the need for air conditioning during summer. Other facades are protected from sunlight with architectural elements, and natural light is provided to all rooms.

Figure c)
Photo by Barry Iverson

Geometric Forms and Solid Volumes: Legorreta's general style emphasizes strong, solid geometric forms. The description of the buildings and their arrangement around plazas suggests a composition of distinct, well-defined volumes.

Figure d)
Photo by Barry Iverson

Play of Light and Shadow: The emphasis on providing natural light to all rooms and protecting facades from direct sunlight with architectural elements indicates a deliberate manipulation of light and shadow, a hallmark of Legorreta's work.

Figure e)
Photo by Barry Iverson

Materials and Finishes: The architectural proposal specifies that exterior finishes for buildings facing the main spine will be stone, and for all other facades, it will be mainly stucco. This use of robust, traditional materials aligns with Legorreta's preference for natural materials and textures, which he often employed to add warmth and tactility to his structures.

Figure f)
Photo by Barry Iverson

Flexibility: The structural system based on columns and beams is highlighted as allowing flexibility for the use of spaces. This demonstrates a practical design consideration that supports adaptability and future changes, which is an underlying principle of functional and enduring architecture.

Figure g)
Photo by Barry Iverson

Figure h)
Photo by Barry Iverson

SPATIAL FUNCTIONALITY

Lecture Halls and Auditoriums

Mary Cross Lecture Hall: A dedicated space for lectures and presentations.

Mohamed Shafik Gabr Lecture Hall: Another lecture hall, indicating multiple venues for academic and public speaking events.

Bassily Auditorium: A university auditorium, suggesting a larger capacity venue for significant university gatherings.

Moataz Al Alfi Hall (University Conference Hall): A conference hall suitable for larger meetings, conferences, and events.

Dining and Food Services

Americana Food Court (Indoor Dining Room & Outdoor Seating Area): A primary dining facility, indicating a significant provision for student and faculty meals, with both indoor and outdoor seating options.

Sonia Sarofim Aclimandos '76 Fountain (Food Court Dining Hall Fountain): A decorative feature within the food court area, enhancing the dining environment.

Social and Recreational Spaces

Abla Leheta '69 and Souhail El-Taji El-Farouki '68 Courtyard: A courtyard providing an outdoor communal area for gathering and relaxation.

Hussein and Kim El Sharkawy Fountain (Cascading Strip Fountain): A water feature contributing to the aesthetic and ambiance of the center

The Bartlett Room (Student Lounge): A dedicated lounge area for students to relax and socialize.

John D. Gerhart Music Room (Instrumental/Choral Music Rehearsal Room): A space for music practice and rehearsals, supporting student artistic and cultural activities.

Student Support and Development Facilities

Sherry Arnold Children's Courtyard & Nana's Playground (Day Care Center Courtyard & Playground): Facilities indicating support for students with children, providing childcare services within the campus center complex.

That Wisdom May Flourish Landon K. Thorne, III and Family Room (Meeting Room in Office of Student Development): A meeting room within the Office of Student Development, suggesting spaces for student counseling, leadership development, and organizational meetings.

Student Union Office (Student Union 2002-2003 Office): An office for the Student Union, serving as a base for student governance and activity planning.

Seifallah Coutry '75 and Family Workspace, Ross Bracco Workspace (From Tahany Zaher '74 and Cherif Ramsis '74), AUC Parents Association Workspace (Student Work Spaces): Multiple dedicated workspaces for students, highlighting the provision of areas for individual or group study and projects.

Comprehensive Climate Analysis: AUC Cairo Campus

Executive Summary

The American University in Cairo's New Cairo campus is situated in one of the world's most distinctive climate zones - the hot desert climate (Köppen classification BWh). Located at coordinates 30°01'7.08"N, 31°30'0.74"E, the campus experiences extreme seasonal variations in temperature, minimal precipitation, abundant sunshine, and distinct wind patterns that significantly influence daily life, academic activities, and architectural design decisions.

Geographic Context and Location

The AUC New Cairo campus is positioned in the desert environment of Newinfluenced by the proximity to the Mediterranean Sea, approximately 165 kilometers to the north.

The campus's desert location creates a unique microclimate within the larger Cairo metropolitan area, with less humidity than central Cairo due to reduced urban density and absence of the Nile's moderating influence.

Climate Classification and Characteristics

AUC Cairo experiences a **hot desert climate (BWh)** *characterized by:*

- *Extreme aridity with annual precipitation below 100mm*
- *High temperature variations*
- *Intense solar radiation throughout the year*
- *Distinct hot and cool seasons*
- *Minimal cloud cover for most of the year*
- *Seasonal wind pattern variations*

Temperature Patterns Summary - AUC Cairo Campus

AUC Cairo experiences **dramatic seasonal extremes** *with a massive 40°C temperature range - from winter lows of 5°C (41°F) to summer peaks exceeding 45°C (113°F)*

Seasonal Temperature Breakdown Winter (Dec-Feb): Mild & Pleasant *Range: 5-35°C (41-95°F)*

- *Average: 14-16°C (57-61°F)*
- *Ideal outdoor conditions with cool nights*
- *Snow extremely rare (last: 1950)*

Spring (Mar-May): Rapid Warming *Range: 13-45.7°C (55-114°F)*

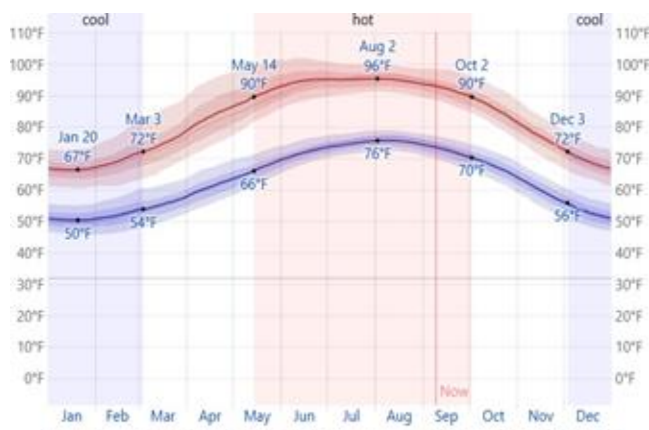
- *Progressive: March 18°C - April 22°C →- May 26°C*
- *Excellent for events, but Khamaseen dust storms begin*
- *Record: 45.7°C (114°F) May 2019*

Summer (Jun-Aug): Intense Heat

- *Range: 20-45°C+ (68-113°F+)*
- *Peak: August 29.6°C (85°F) average*
- *High heat index from humidity*
- *No nighttime relief (rarely <20°C)*
- *Record: 45.2°C (113°F) June 2010*

Autumn (Sep-Nov): Gradual Relief *Range: 15-40°C (59-104°F)*

- *September hot (28°C) → November pleasant (20°C)*
- *Oct-Nov ideal campus weather*
- *Occasional early October dust storms*



The daily average high (red line) and low (blue line) temperature, with 25th to 75th and 10th to 90th percentile bands. The thin dotted lines are the corresponding average perceived temperatures.

Average	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
High	67°F	69°F	75°F	83°F	90°F	95°F	95°F	95°F	92°F	86°F	77°F	69°F
Temp.	58°F	60°F	65°F	72°F	79°F	83°F	85°F	85°F	82°F	76°F	68°F	61°F
Low	51°F	52°F	56°F	61°F	67°F	72°F	75°F	75°F	73°F	67°F	60°F	53°F

Precipitation and Water Balance

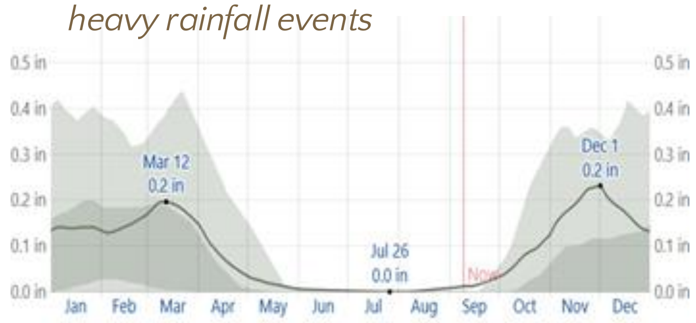
AUC Cairo has extremely arid climate with minimal rainfall averaging 55mm annually.

Precipitation Patterns

- **Wettest Period**: *December-March*
  - *March: 11.9mm (peak)*
  - *December: 11.2mm*
- **Dry Period**: *April-November*
  - *June, July, September: 0mm*
  - *May, August: <2mm*

Characteristics

- *Brief, intense showers (not sustained rainfall)*
- *Only 3-4 wet days per year*
- *Flash flooding risk due to poor desert soil absorption*
- *Campus drainage must handle infrequent heavy rainfall events*



The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands. The thin dotted line is the corresponding average snowfall.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rainfall	0.1"	0.1"	0.2"	0.1"	0.0"	0.0"	0.0"	0.0"	0.0"	0.1"	0.2"	0.2"

Humidity and Atmospheric Conditions

The campus experiences significant seasonal humidity fluctuations affecting comfort and energy requirements.

Seasonal Humidity Patterns

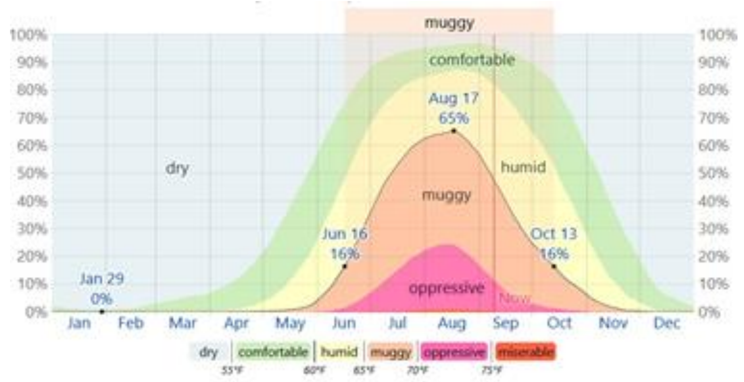
- **Winter**: *55-61% (December-February)*
- **Spring**: *46-52% (March-May)*
- **Summer**: *44-57% (June-August)*
- **Autumn**: *56-60% (September-November)*

Comfort Analysis

- **Driest Period**: *March-June (44-46% humidity)*
- **Muggy Period**: *Mid-June through mid-October*
- **Most Uncomfortable**: *August (19.4 muggy/ oppressive days)*
- **Most Comfortable**: *January (zero muggy days)*

Impact

High summer temperatures combined with moderate humidity (48-57%) create elevated heat index values, affecting outdoor activities and increasing building energy requirements. The humidity-temperature interaction during peak summer months can make conditions feel 5-8°C hotter than actual air temperature, significantly impacting campus operations and comfort levels.



The percentage of time spent at various humidity comfort levels, categorized by dew point.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Muggy days	0.0d	0.0d	0.0d	0.0d	0.4d	5.5d	16.4d	19.4d	11.7d	4.4d	0.5d	0.0d

Wind Patterns and Air Movement

Predominant Wind Directions

- **Northern Winds**: *Dominate 9.8 months (February 23 - December 18)*
  - *Peak frequency: 86% in late August*
  - *Provide cooling relief and cleaner Mediterranean air*
- **Western Winds**: *Prevalent 2.2 months (December 18 - February 23)*
  - *Peak frequency: 35% in January*
  - *Associated with winter weather systems*

Wind Speed Variations

- **Windiest Period**: *March 7 - July 25 (>9.0 mph average)*
- **Peak Month**: *June (10.0 mph average)*
- **Calmest Period**: *July 25 - March 7*
- **Calmest Month**: *December (8.0 mph average)*

Khamaseen Wind Events *Hot, dry Sahara winds creating significant* campus impacts:

Characteristics

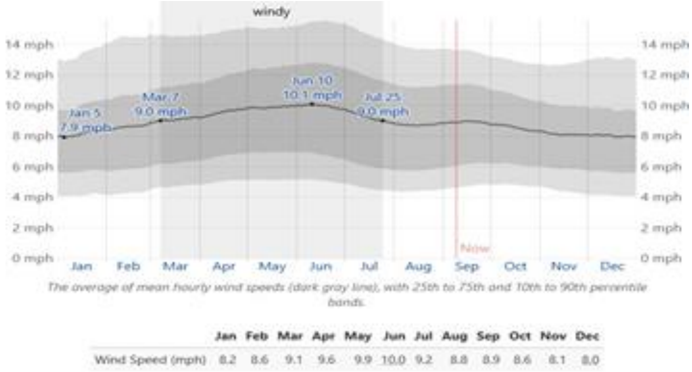
- *Most frequent: March-May*
- *Temperatures >40°C (104°F)*
- *Carries dust/sand, reducing visibility*
- *Duration: hours to multiple days*

Campus Impacts

Requires dust-resistant building design Enhanced air filtration systems needed Outdoor event disruptions

Increased air conditioning demand Campus transportation and parking challenges due to reduced visibility Health concerns for students with respiratory conditions requiring indoor shelter protocols

Landscape irrigation systems



Solar Radiation and Sunshine Patterns

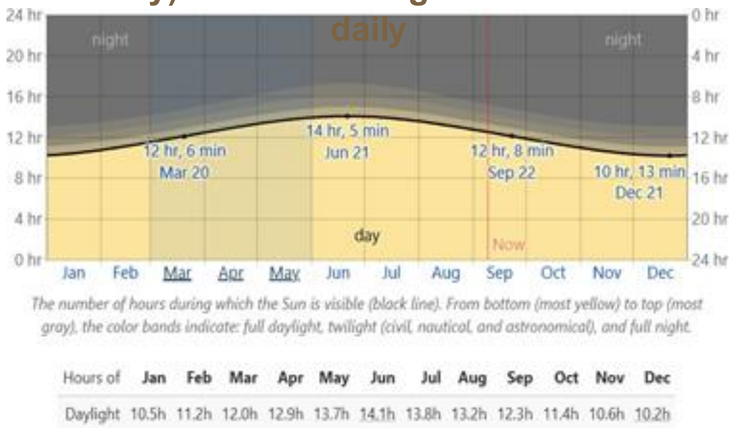
AUC Cairo has exceptional solar resources with high energy generation potential.

Sunshine Duration

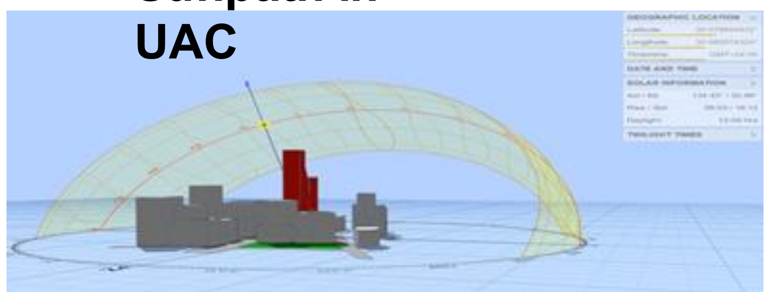
Annual: 3,000+ hours (8.2 hours daily average) Peak: August (11.5 hours daily) Minimum: December (6.5 hours daily)

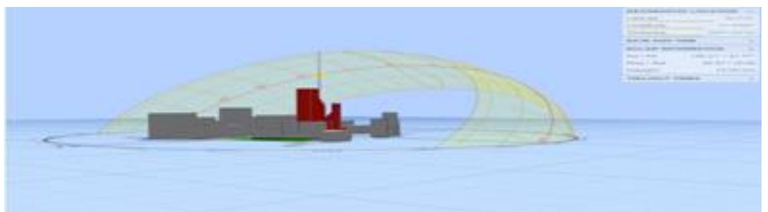
Solar Energy Potential

Peak: June (8.4 kWh/m² daily)
Lowest: December (3.4 kWh/m² daily) Annual Average: 5.8 kWh/m²



Sunpath in UAC





Topography Around AUC Campus Cairo; Vegetation near the AUC

in New Cairo Location & Elevation

AUC campus sits at 322m above sea level on an Eastern Desert plateau (250-307m elevation range)
Positioned 115m higher than central Cairo (207m elevation)
Located east of Cairo Ring Road in the Eastern Desert

Terrain Features

Flat to gently undulating desert plateau with minimal topographic variation
Limestone bedrock foundation typical of Eastern Desert geology
Hyperarid desert environment with sparse natural vegetation
Transition zone between Nile Valley agricultural lands and expansive Eastern Desert

Design Implications

The elevated plateau location creates ideal conditions for large-scale development with minimal grading but requires specialized campus design for drainage, dust management, and extensive irrigation systems due to the arid desert environment.

AUC Cairo Demographics

AUC Cairo has ~6,500 students (94.5% Egyptian, 5.5% international) across undergraduate and graduate programs, plus 16,000+ in continuing education. With 35,000 alumni and a 28% acceptance rate, it's a selective, medium-sized university serving primarily Egyptian students with American educational standards

Campus

Campus Landscaping

AUC New Cairo campus features extensive landscaping designed to create a green oasis in the desert environment:

Planted Campus Vegetation: Green areas inside campus cover 61 acres (58 feddan)

- Nearly 150 different species of plants – a mixture of internaΘonal and naΘve EgypΘan – and more than 8,000 trees

Specific Campus Trees:

- 754 citrus trees, 115 mango trees, 147 olive trees, 1127 date palm trees and 32 grape vines on the campus
- Succulent plants on green roofs

Native Eastern Desert Vegetation

The natural vegetaΘon surrounding the campus reflects the Eastern Desert ecosystem:

Native Desert Plants: Tamarisk, acacia, and markh (a leafless, thornless tree with bare branches and slender twigs), as well as a great variety of thorny shrubs, small succulents, and aromaΘc herbs

- Acacias and mangroves in the less arid regions of the Eastern DesertAcacia trees, palms, succulents, spiny shrubs, and grasses

Desert Plant Characteristics: Dry subtropical and tropical plants such as papyrus, date palms, and citrus groves Some plants adopt an ephemeral life style, sprouΘng or springing into life when rain falls, rapidly reaching the flowering stage and producing long-lived durable seed

- Acacia trees form a principal element of desert plant communiΘes in Egypt's South Eastern Desert

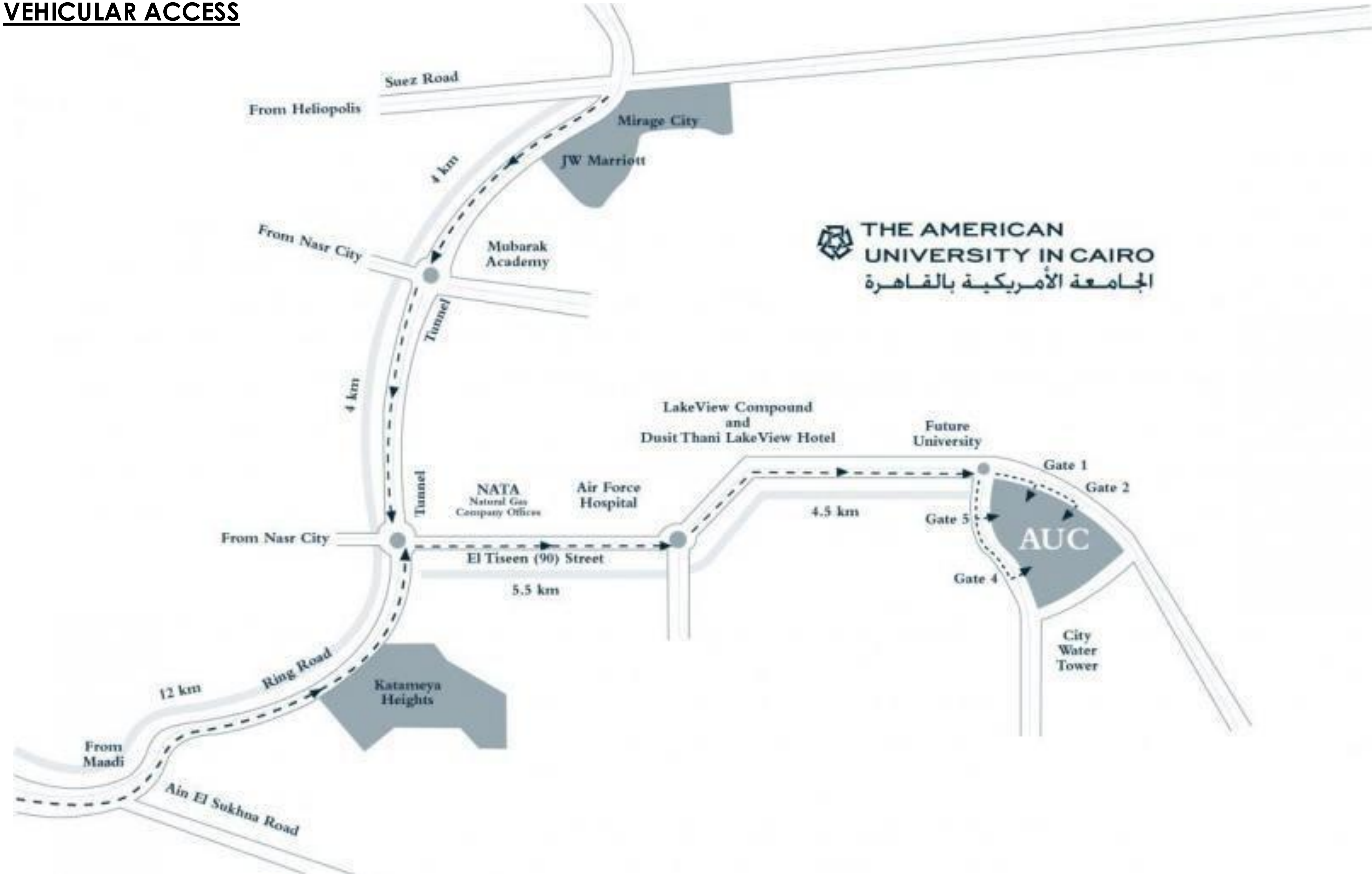
Regional Flora Context

- Egypt has approximately 2,500 plant species The Eastern Desert receives sparse rainfall, but it supports a varied vegetation The campus represents an intensively landscaped area within the broader hyperarid Eastern Desert ecosystem

The contrast between the lush campus landscaping and the sparse natural desert vegetation creates a unique environment where cultivated international species coexist with adapted native desert flora.

ACCESS TO AMERICAN UNIVERSITY OF CAIRO CAMPUS

VEHICULAR ACCESS

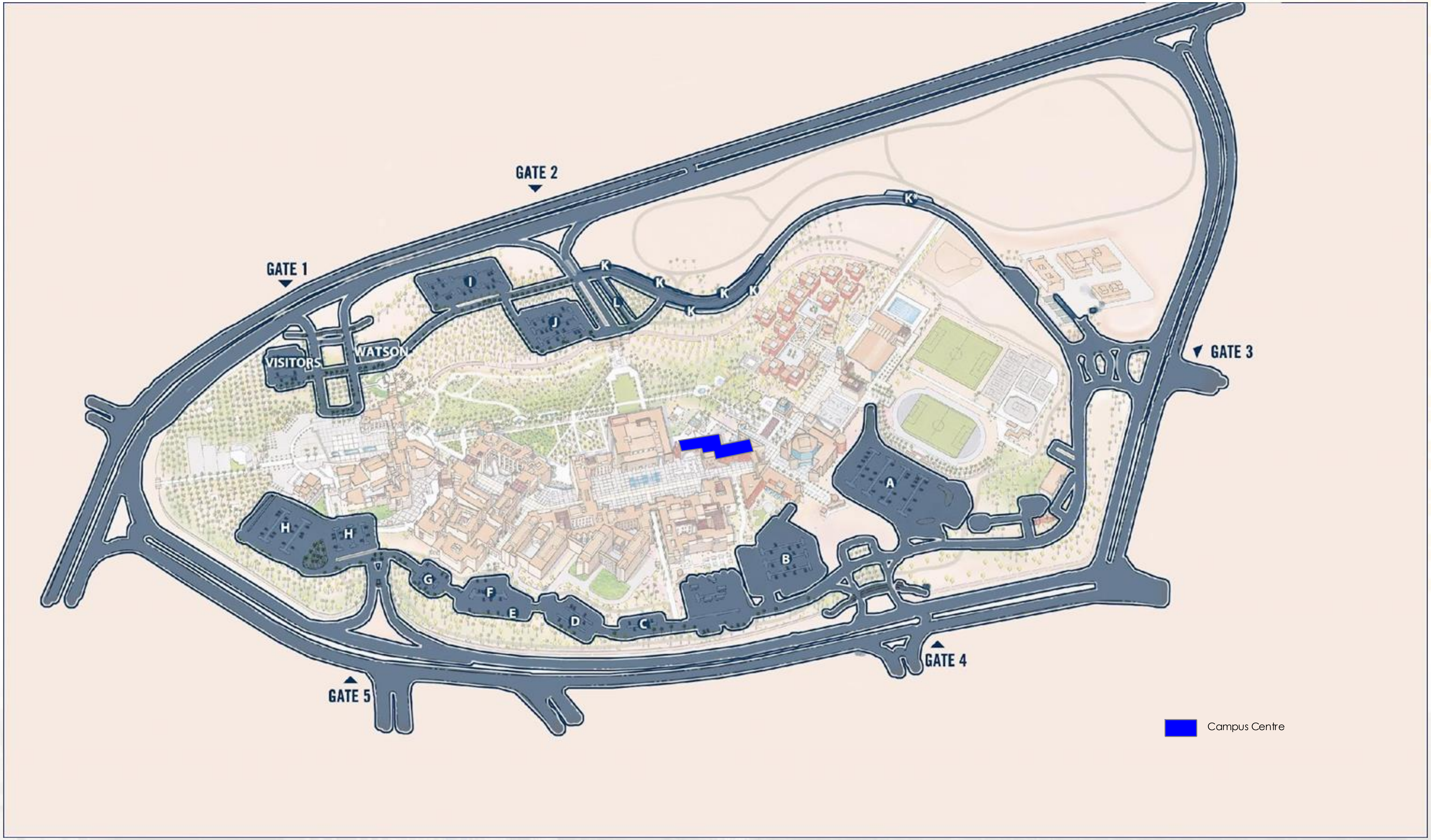


Actual Access to the campus itself,
Adapted from AUC, https://www.aucegypt.edu/maps

ACCESS TO AMERICAN UNIVERSITY OF CAIRO CAMPUS

VEHICULAR ACCESS

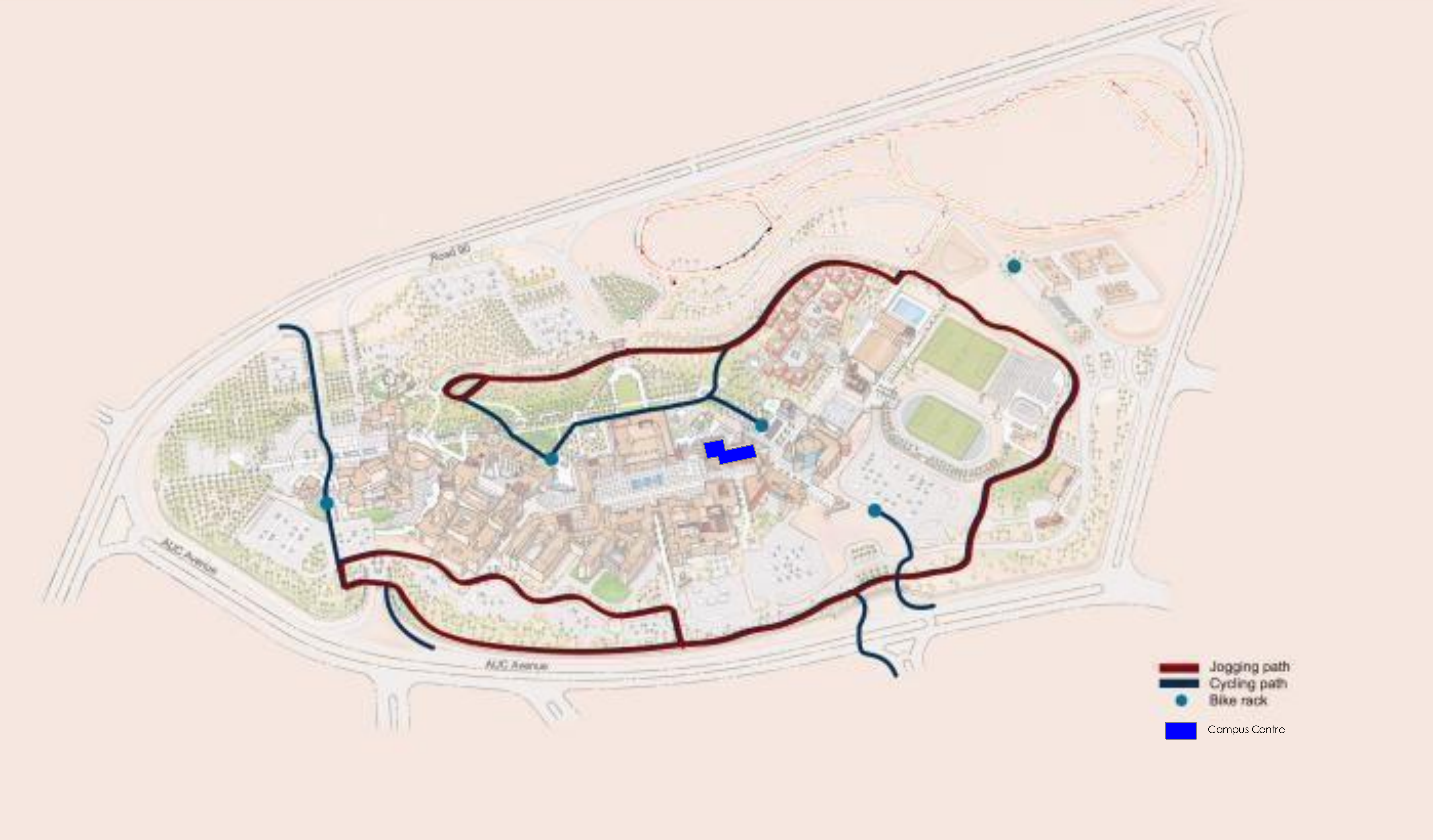
The Campus is mainly a walkable village, in that its very pedestrian oriented.



Vehicular Parking to the campus itself,
Adapted from AUC, https://www.aucegypt.edu/maps

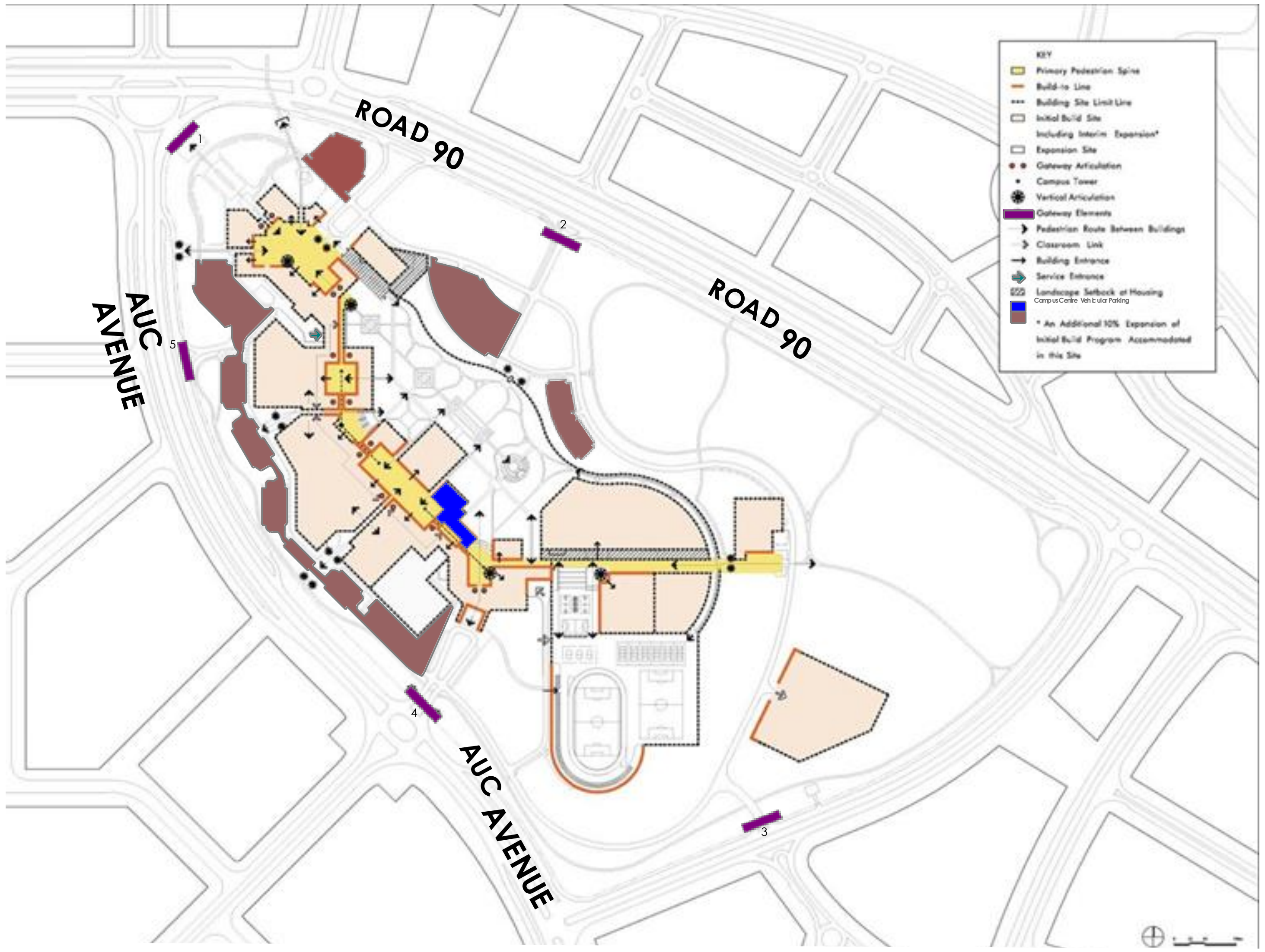
ACCESS TO AMERICAN UNIVERSITY OF CAIRO CAMPUS

JOGGING AND CYCLING ACCESS



Jogging and Cycling Access to the campus itself,
Njuguna 2026,
Adapted from AUC, https://www.aucegypt.edu/maps

ACCESS AND APPROACH



Showing access to Campus Centre in American University of Cairo Campus map
Njuguna 2026,
Adopted from AUC Maps, https://www.aucegypt.edu/maps

ACCESS

-The campus is accessed through ROAD 90 (Gate 1 and 2)and AUC AVENUE(Gate 3,4 and 5)

-The **Campus Centre** of AUC is strategically located at the centre of the campus.

-The campus has 5 gates, all of which are not close to the building.

-Access to the building is through a Pedestrian Spine connecting all the main buildings on campus.

-Support access for:

- pedestrian
- wheelchair

-there is also a bus terminal relatively close to the Pavillion connecting to the Campus Centre.

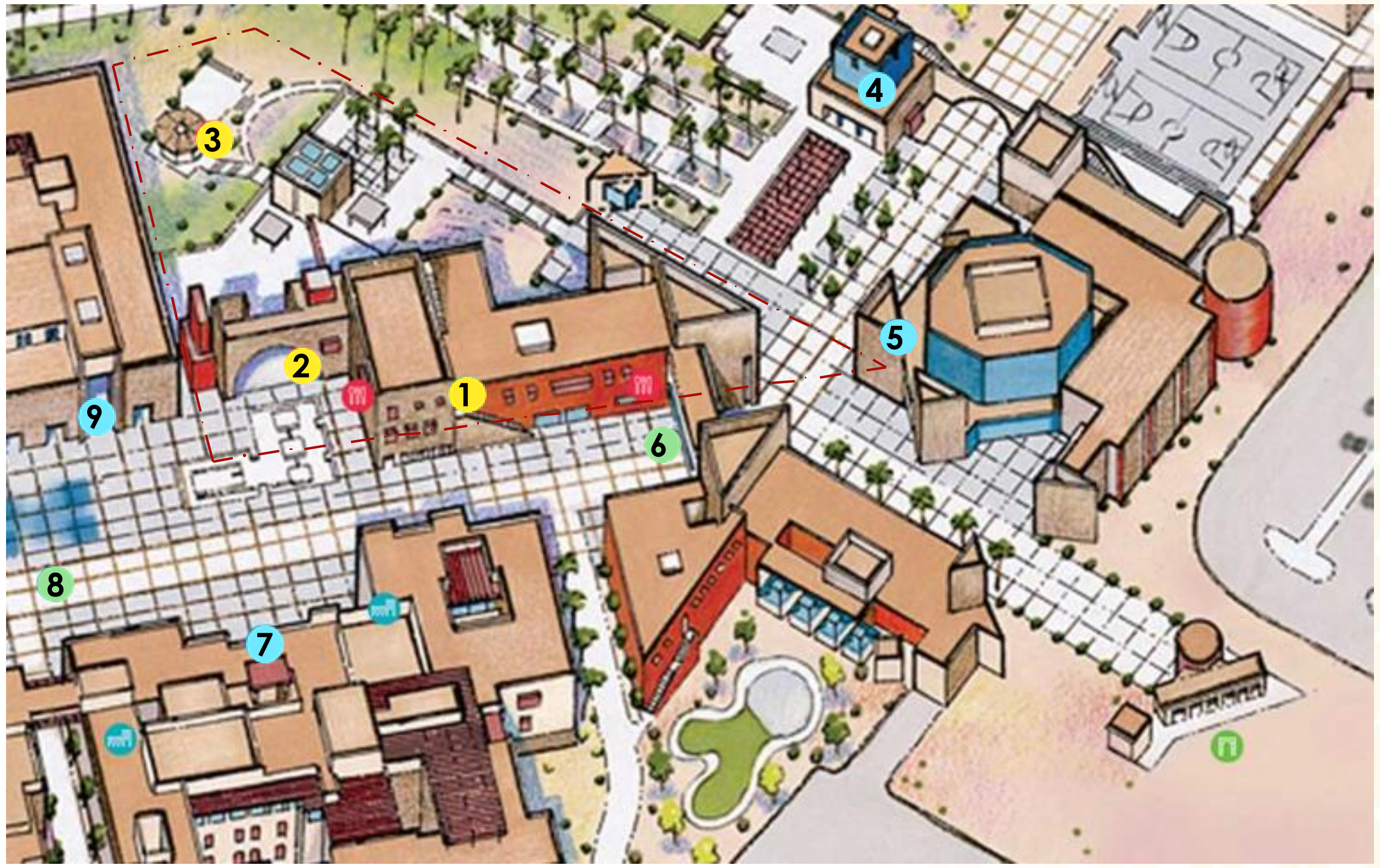
APPROACH

-The Campus Centre has an *oblique building approach* that faces inwards, towards the Pedestrian Spine and its main entrance is at an angle.its has multiple entrances most of which are still inward, facing the Pedestrian spine.

Entrance facing inwards

Campus Centre Main Entrance
Njuguna 2026 ,
Adopted from AUC Maps,
https://www.aucegypt.edu/maps

NEIGHBOURHOOD



Campus Centre Surrounding buildings
Njuguna 2026,
Adopted from AUC Maps, https://www.aucegypt.edu/maps

Campus Centre and Part of
Neighbouring Buildings
Plaza

Campus Shop, Campus Centre
Adopted from AUC Maps,
https://www.aucegypt.edu/maps

Food Court, Campus Centre
Adopted from AUC Maps,
https://www.aucegypt.edu/maps

Bassily Auditorium
Adopted from AUC Maps,
https://www.aucegypt.edu/maps

Abdul Latif Jameel Hall
Adopted from AUC Maps,
https://www.aucegypt.edu/maps

Cilantro Food Court, Campus Centre *Adopted from AUC Maps,*
https:// www.aucegypt.edu/maps

L'Aroma Food Court, Campus Centre *Adopted from AUC Maps,*
https:// www.aucegypt.edu/maps

School of Global Affairs and Public Policy *Adopted from AUC Maps,*
https://www.aucegypt.edu/maps

Bartlett Plaza, Campus Centre
Adopted from AUC Maps,
https:// www.aucegypt.edu/maps

Moataz Al Alfi Hall,
Adopted from AUC Maps,
https://www.aucegypt.edu/maps

Bassily Auditorium
Adopted from AUC Maps,
https://www.aucegypt.edu/maps

AUC Library
Adopted from AUC Maps,
https:// www.aucegypt.edu/maps

AUC Library
Adopted from AUC Maps,
https:// www.aucegypt.edu/maps

THE WHY ITS SITUATED AS IT IS

Observation: located at the center of the AUC campus map

-to serve as the focal point for student life and activities.
-makes it easily accessible from all parts of the campus

Observation: its main entrance and all the entrances seem to be facing the pedestrian spine and not outwards facing any of the campus gates

-designed to promote pedestrian movement and social interaction along the main spine of the campus, which is inspired by traditional Egyptian architecture.
-the Campus centre is also mainly for students unlike administration building which would face outwards as its end user are infact incoming guests etc.

Observation: Though its cetrally located on the campus grounds,there are still food courts in every other building on campus.

-this reduces traffic in one place and increases convinence to the students on different buildings on campus grounds.

DEVELOPMENT CONTROL

PLOT RATIO

-The plot ratio for the American University of Cairo's (AUC) New Cairo campus is approximately **0.17 to 1** or 17% (180,000 m² / 260 acres * 4046.86 m²/acre).

PLOT COVERAGE

-The entire AUC New Cairo campus spans 260 acres.
-detailed figures for the Campus Centre area specifically aren't publicly listed.

BUILDING LINES

-The entire AUC New Cairo campus spans 260 acres.
-detailed figures for the Campus Centre area specifically aren't publicly listed.

ZONING

EXTERNAL ZONING

The campus is divided into three main zones—each with a distinct purpose and user group.

1) Lower Campus – *public zone*
-Open to the general public.
-Includes welcoming features like:
Corddry Park
public amphitheater
bookstore,
Performing and Visual Arts Center
exhibition galleries
-Acts as AUC's face.

1) Middle Campus – *academic zone*
-Houses:
schools
research centers
administration
the library
academic facilities
-Designed for intellectual exchange, teaching, and academic operations.

3)Upper Campus - *Student life and recreation*
-Centers on student:
residences
sports complexes
dining spaces
social gathering areas
-Offers opportunities for social, cultural, and recreational engagement.

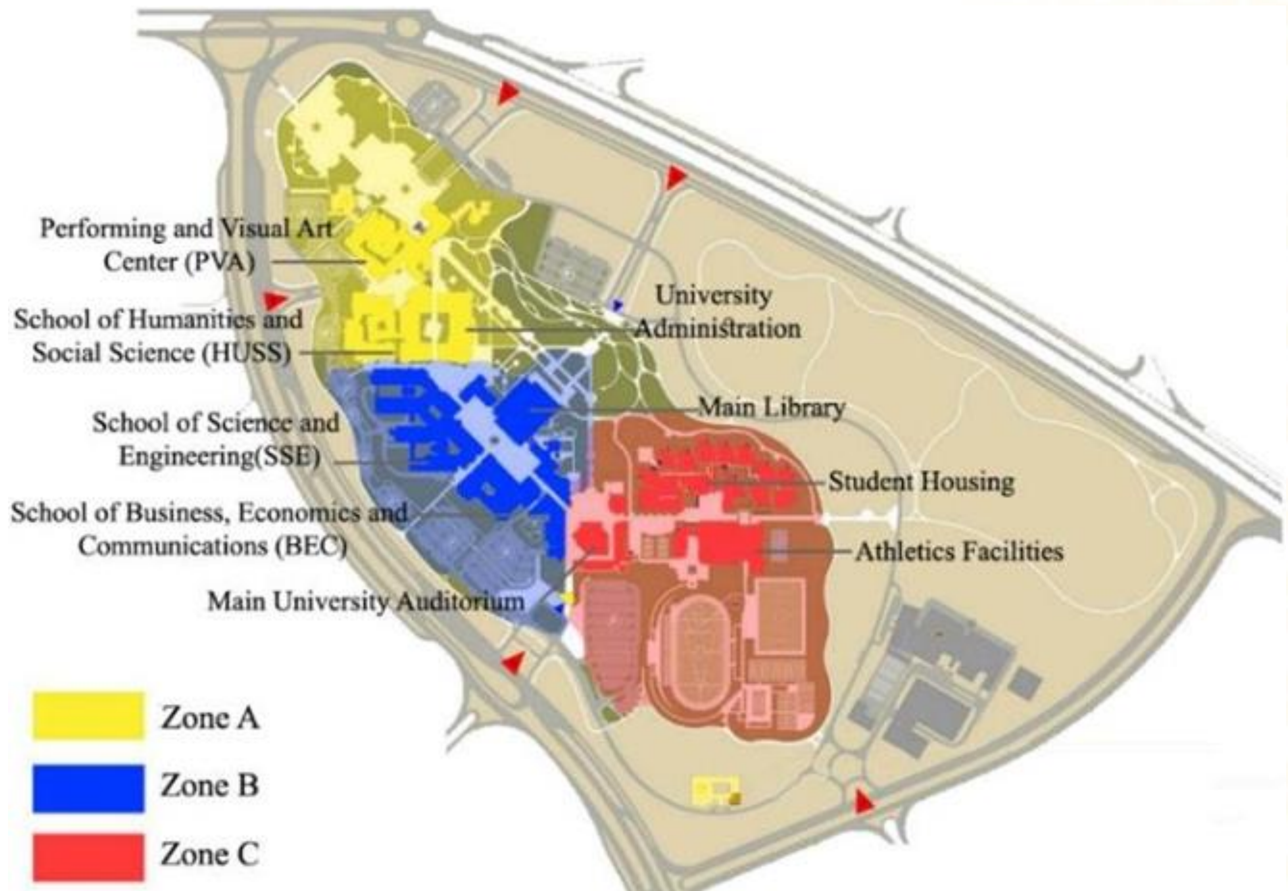
-INTERNAL ZONING

Inside the Campus Centre, spaces are organized to support multiple functions:

Dining and Retail:
Main dining room
Americana Food Court
Bookstore and gift shop
Travel office and banking services

Student Services & Administration:
Student Union and Off-campus Studies Department.
Faculty-student services—central hubs within student life.

Event & Cultural Spaces:
Bassily Auditorium (seats ~1,400)
Moataz Al-Alfi Hall (seats ~200)
Mohamed Shafik Gabr Lecture Hall (seats150)



External zoning break down of the campus. Adapted from Research Gate, https://www.researchgate.net/

Internal zoning break down of the campus. Adapted from AUC map, https://aucegypt0.sharepoint.com/

DESIGN ANALYSIS

SITE ADAPTATIONS

Source; Legorreta+Legorreta

LEGEND

MAIN PEDESTAL AXIS (CAMPUS SPINE)

N

Positioning & Orientation

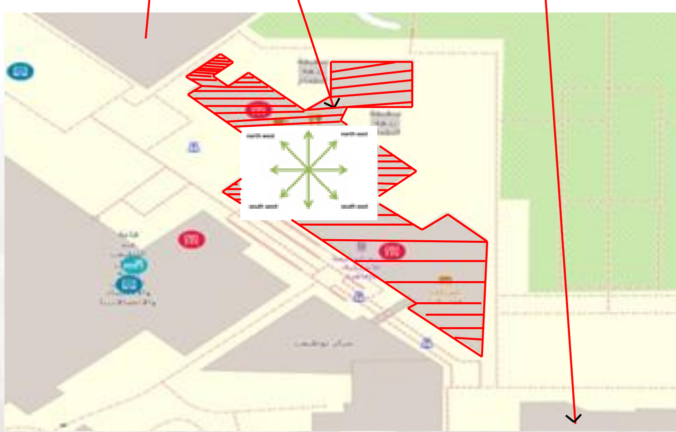
Campus Center is sited at the intersection of the campus spine and main plaza, maximizing visibility.
Major façades face north east and south west, reducing solar gain, while east/west walls are made of thicker stone with smaller openings to buffer heat.

Reasoning: Orientation reflects passive cooling strategies and pedestrian centrality.

LIBRARY

CAMPUS CENTER

BASSILY AUDITORIUM



Orientation of the Campus Center

Pedestrian Axis & Walkways around the Campus Center

Main Pedestrian Axis (Campus Spine)

The spine is the primary east– west pedestrian boulevard that threads through the heart of the campus.

Inspired by Sharia al-Muizz in Islamic Cairo, it is narrow and shaded in parts, then opens into courts and plazas.

The Campus Center sits directly on this spine, so students naturally flow past/into it on their daily movement.

GATE 4 ENTRANCE LINED WITH PALM TREES

Source; AUC MASTER GIUDE

FIRST IMPRESSION VIEW OF THE SOUTH FACING FACADE OF TE CAMPUS CENTER FROM GATE 4 ENTRANCE

Source; Archinet, AUC Campus Center

SITE ADAPTATIONS

Open Spaces

Multiple courtyards and plazas woven between the three wings.

Auditorium Plaza connects it to Bassily Hall.

Central Plaza sits at the core of the Campus Center, functioning as a social courtyard.

Reasoning: Courtyards create shaded outdoor rooms, extend indoor functions outside, and reflect Islamic Cairo's urban fabric.

EXTERNAL EATERY SPACE LOCATED ON THE COURTYARD IN FRONT OF THE NORTH FACADE

CENTRAL PLAZA

WEST WING

LIBRARY

CAMPUS CENTER

SOUTH FACING FACADE

Spatial Experience of Walkways

Shade & Climate: Arcades, pergolas, and recessed walls protect users from sun, making walking comfortable in Cairo's heat.

Light & Shadow Play: Deep façades and latticework create moving patterns of shade/light, enriching the pedestrian experience.

Porosity: The Campus Center acts like a "street within a building" — people don't just enter and leave; they pass through it as part of campus life.

Reasoning: Walkways are not just transit—they create identity and belonging, turning the Center into the living room of campus.

SHADED WALKWAYS

RECESSED/ COLONNADED WALKWAYS

LIGHT AND SHADOW PLAY:USING THAT ARE IN CLOSE PROXIMITY TO SHADE WALKWAYS

SHADED PERGOLA LEADING TOWARDS BASSILY HALL FROM THE CAMPUS CENTER

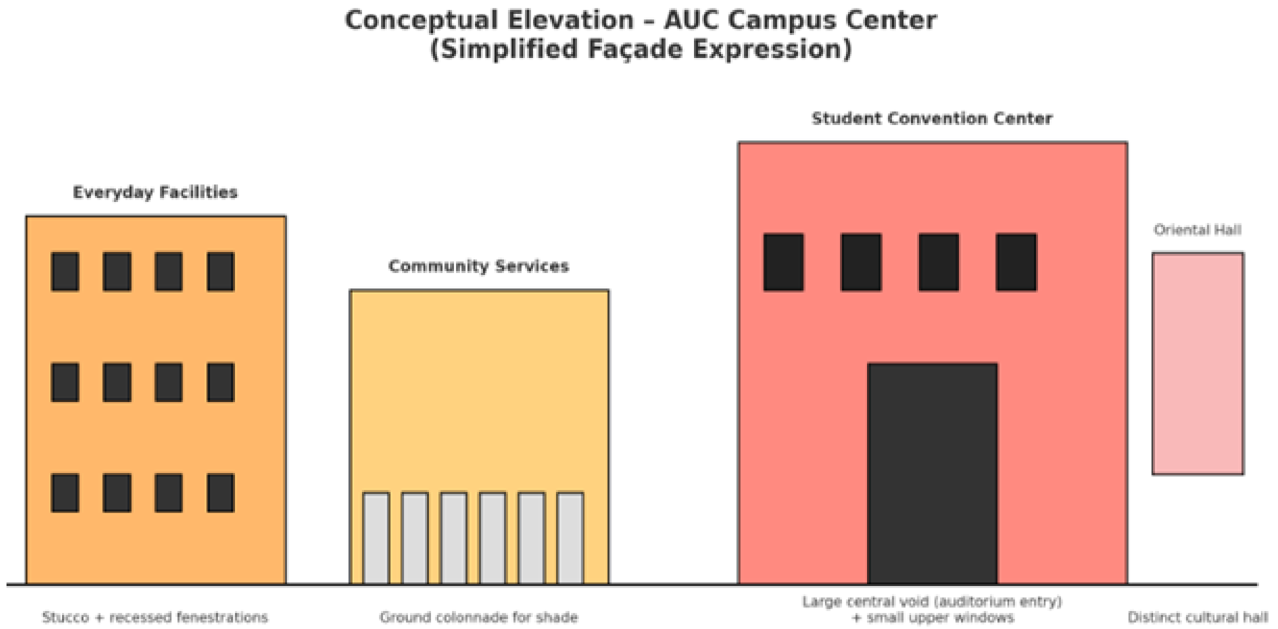
Edges & Vegetation

Edges defined by stone façades and colonnades, giving strong boundaries but porous access. Main Vegetation used is palm trees which are native desert plants (low water use) for shading and landscaping.

Reasoning: Landscaping adapts the harsh desert climate to student needs.

PALM TREE VEGETATION ALONG MAJOR WALKWAY LEADING TO THE CAMPUS CENTER

SPATIAL ORGANISATION

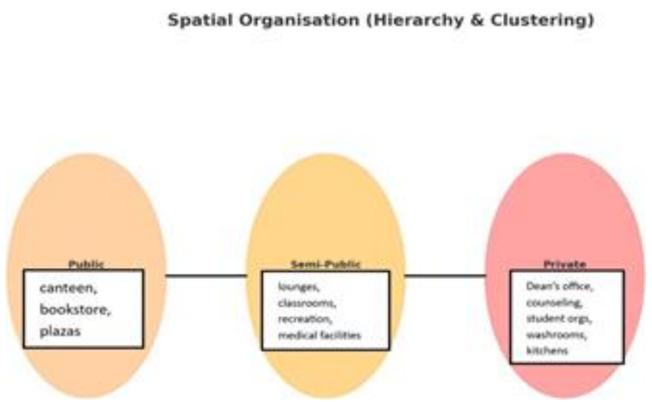


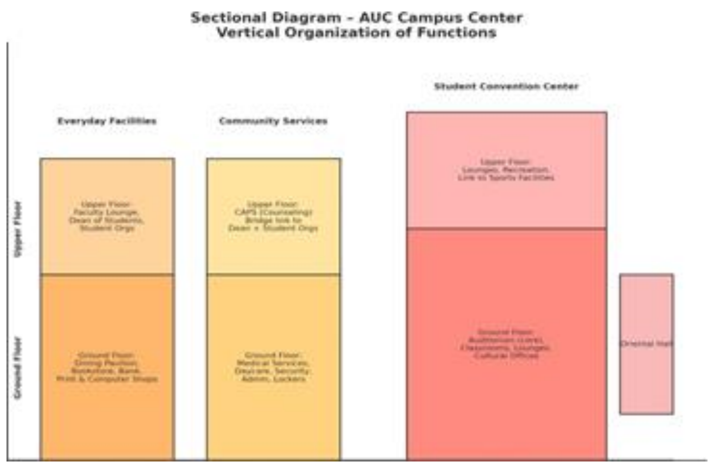
The Campus Center is divide into three broad categories:

<u>Everyday Facilities</u> → Daily services (food, retail, student orgs). Located on the ground floor of the east wing and accessed from the North facade.

<u>Community Services</u> → Support and well-being (health, counseling, administration). Located on first floor of the west wing.

<u>Student Convention Center</u> → Gathering and cultural exchange (auditorium, events, recreation).These facilities are distributed across the ground and first floor of both wings.





Hierarchy & Clustering of Spaces

Main spaces: Auditorium, Oriental Hall, dining pavilion, central plaza.

Secondary spaces: Courtyards, colonnades, terraces, lounges.

Servant spaces: Corridors, washrooms, service rooms, storage.

Privacy gradient:

Public (plazas, dining, bookstore) → Semi-public (lounges, classrooms) → Private (Dean's office, CAPS counseling).

Reasoning: Clear zoning helps students intuitively navigate public vs. private spaces.

SPATIAL ORGANISATION

Patterns of Circulation

Horizontal:

Main spine cuts through, plazas act as nodes, colonnades guide secondary circulation.

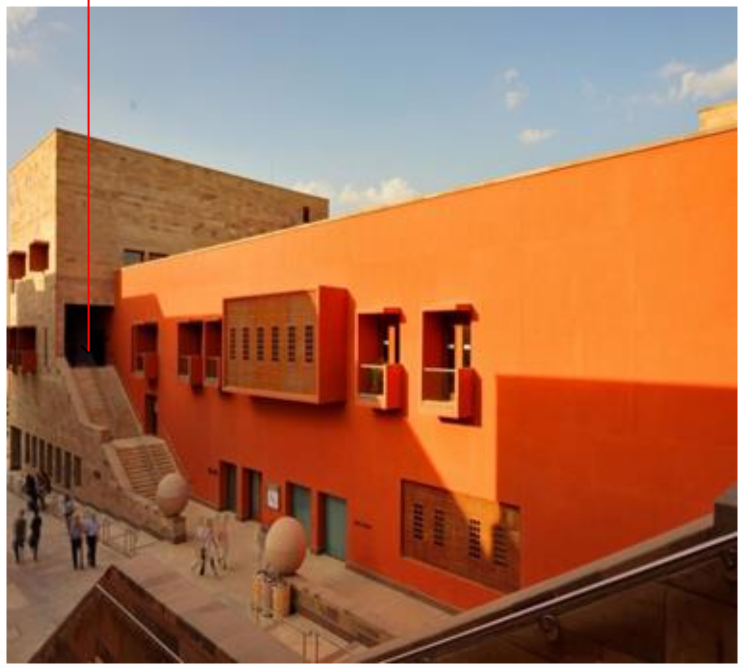
Vertical:

Upper floors accessed by stairs/bridges; upper-level student services are visually connected but physically separated from public ground-floor activities.

SHADED WALKWAYS

RECESSED/ COLONNADED WALKWAYS

vVERTICAL CIRCULATION STAIR LEADING TO THE FIRST FLOOR OF THE WEST WING



BASSILY HALL

BRIDGES CONNECTING CAMPUS CENTER TO BASSILY HALL

CAMPUS CENTER

User Patterns

Daily student traffic flows through for dining, banking, and printing.

Formal events gather in the auditorium.

Faculty and admin staff occupy lounges and offices above.

Reasoning: The building is designed to serve both routine student life and special events.

BUILDING TECHNOLOGY

KEY FACADE CHARACTERISTICS RELATING TO SPACES

Everyday Facilities → stucco walls with small recessed windows for shading.

Community Services → lower level has a colonnade (arcade) that creates shaded pedestrian walkways.

Student Convention Center → bold mass with a large central void (auditorium entrance), flanked by smaller upper windows.

□ Oriental Hall → treated as a distinct cultural volume, slightly offset in form and height.

Key façade ideas visible;

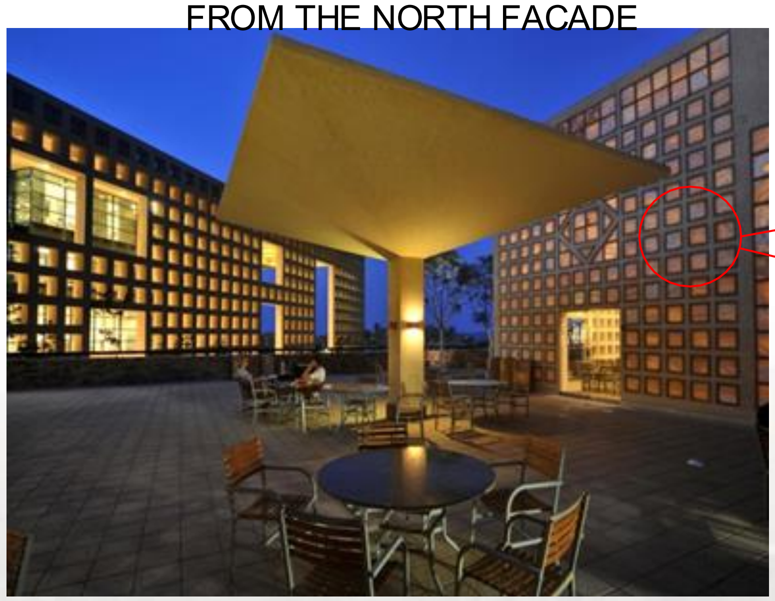
Solids vs voids (heavy walls vs carved openings).

Climatic adaptation (deep recesses, colonnades for shade).

Cultural references (arcades inspired by Islamic Cairo, modern mashrabiya re-interpretations).

Hierarchy of scale (auditorium entry more monumental, student offices more modest)

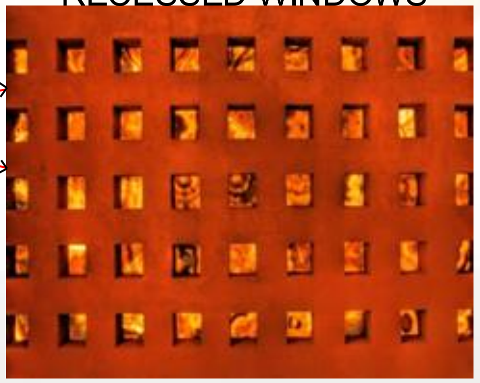
VIEW OF THE CAMPUS CENTER FROM THE NORTH FACADE



COLONNADED ARCADE

MONUMENTAL ENTRANCE INTO THE AUDITORIUM

STUCCO WALLS WITH RECESSED WINDOWS



BUILDING TECHNOLOGY

Assembly & Structural System

Primary Structure:

Reinforced concrete (RC) frame system with columns and beams.

Grid layout allows flexible interior partitioning and future adaptability.

Shear walls provide lateral stability against seismic activity (Cairo is in a moderate seismic zone).

Reasoning: Concrete is cost-effective, durable, and locally available in Egypt.

Auditorium Structure:

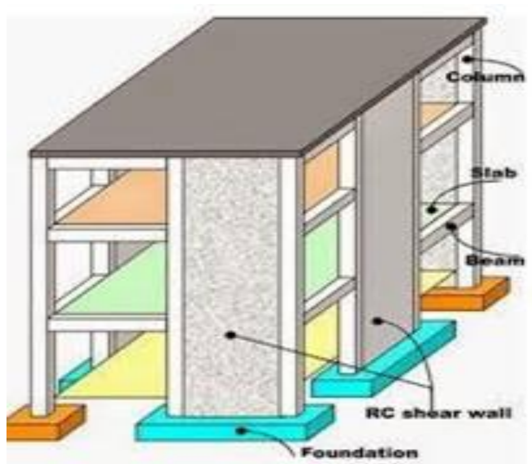
Long-span beams and trusses reduce the need for interior columns.

Clear-span creates unobstructed seating and stage views.

Integration of Prefabrication:

Prefabricated shading panels (mashrabiya), doors, and window frames.

Mechanical and electrical systems pre-integrated into ceiling grids.



Materiality & Envelope

Stone Cladding:

Locally quarried limestone, hand-finished to match Cairo's historic architecture.
Provides thermal mass, reducing daytime heat penetration and releasing it at night.

Stucco Finishes:

Used on large wall surfaces for cost efficiency and textural variety.

Applied over masonry/RC infill, with earthy colors that harmonize with desert tones.
Reasoning: Maintains visual unity with surrounding campus buildings while being economical.

Mashrabiya Screens:

Wood lattice screens reinterpret traditional Islamic shading.

Positioned on upper floors for sun shading and privacy.

Provide controlled daylight while allowing air circulation.

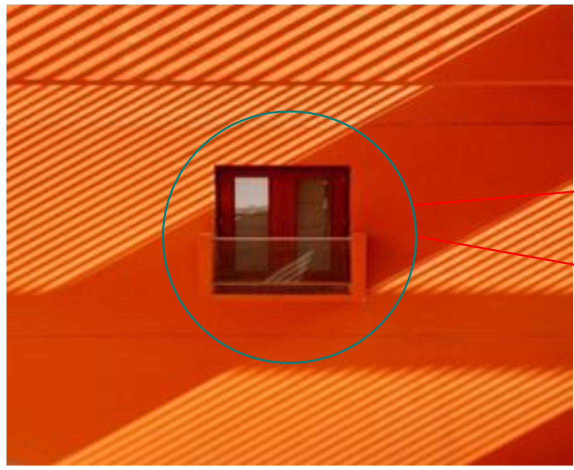
Reasoning: Climatic adaptation + cultural symbolism.

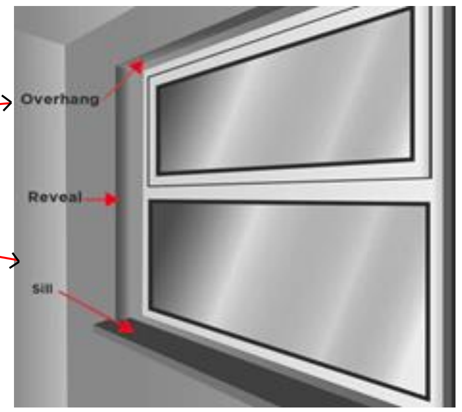
LOCAL STONE CLADDING

MASHRABIYA SCREEN

STUCCO FINISH

MASHRABIYA SCREENS





BUILDING SERVICES

Lighting

Natural daylight via light wells, courtyards, and clerestories. Deep-set windows control glare and solar heat.

Artificial lighting (spot + ambient) in auditorium for multipurpose use.

Ventilation & HVAC

Cross-ventilation through shaded courtyards + operable windows in smaller rooms.

Auditorium and Oriental Hall → mechanical air conditioning (chillers, ductwork).

Combines passive cooling in everyday spaces with mechanical systems in large volumes.

Water & Waste

Low-flow fixtures for water conservation. Greywater irrigation for landscaping.

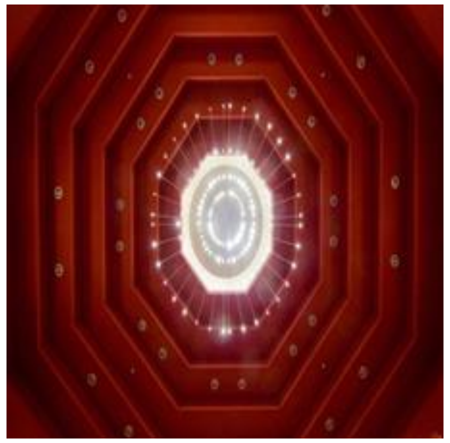
Reasoning: Sustainability principle for desert campus.

Fire Safety

Multiple exits open into large outdoor plazas (assembly areas). Fire-rated stairs and sprinkler system in auditorium.

.

INTERIOR SPACE LIT BY A LIGHT WELL



AUDITORIUM

ALUMNI LOUNGE

AUDITORIUM LIGHT WELL

RECESSED WINDOW

FACADE DESIGN (ELEVATION)

Stone cladding (sandstone from Kom Ombo) is prominently used across façades;
other surfaces also feature marble and granite.

balconies to help in air circulation and provide natural lighting and views

The built environment skillfully blends solid and void, using courtyards, arched openings, shaded plazas and covered walkways.

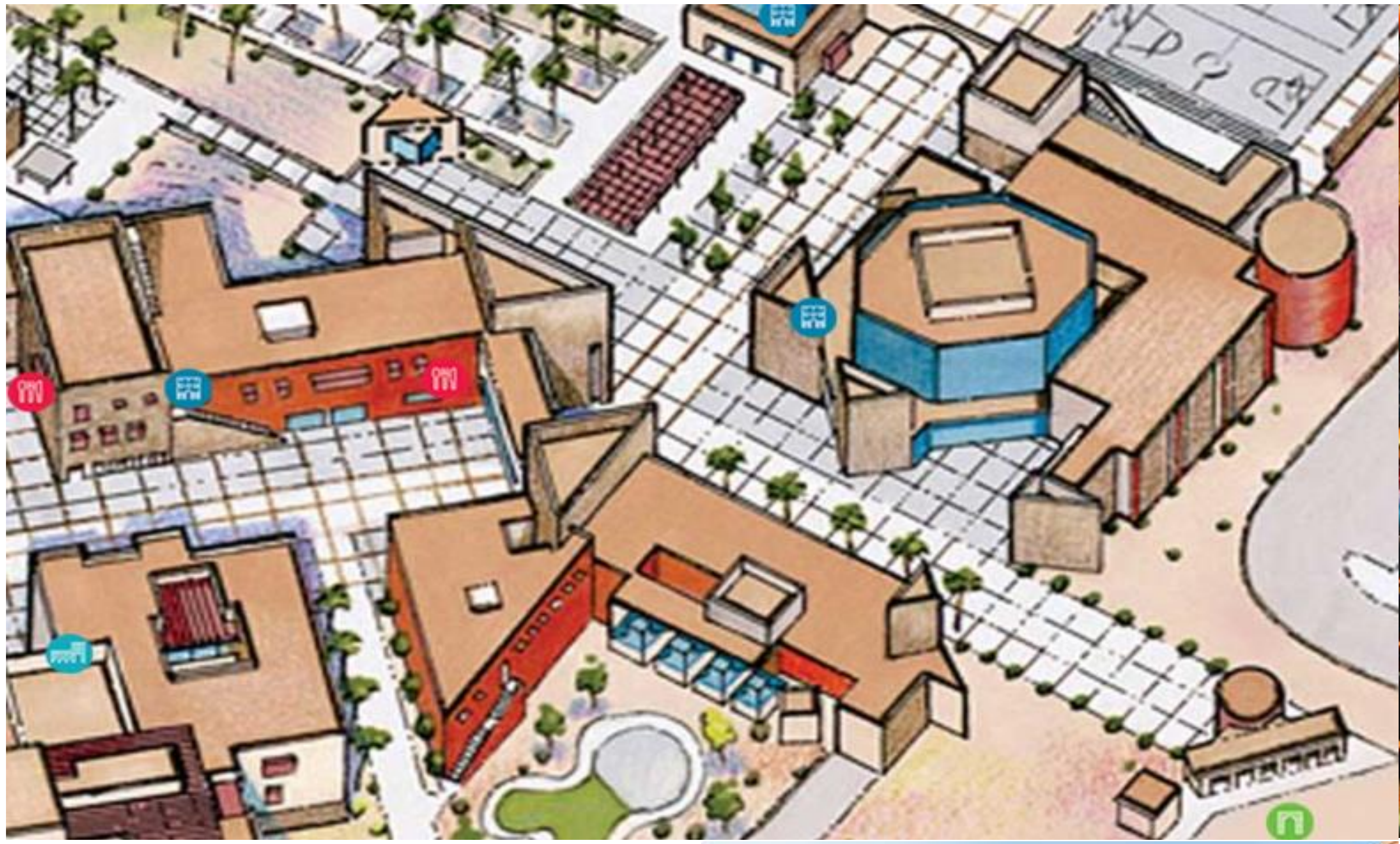
Shading and visual rhythm come from traditional Arabic mashrabiya screens

Openings include double-glazed, wood-framed windows for thermal efficiency

The gateway (Portal) draws inspiration from the Tahrir Square arch
(and the Great Mosque of Córdoba crossed-arch dome), symbolizing intellectual openness.

AMERICAN UNIVERSITY OF CAIRO-CAMPUS CENTRE (GROUP 3)

FORM AND MASSING



Architecture emphasizes scale, proportion, and repetition of courtyards, arches, and mass elements to create a sense of continuity
Hollow-square building blocks
maximize daylight
And cross-ventilation.

Surface treatments-colour, texture, and materials- reflect Egyptian heritage while maintaining modern clarity.

INTERIOR DESIGN

Ambience: Traditional, formal, and scholarly.The ambiance is one of history and academic tradition.

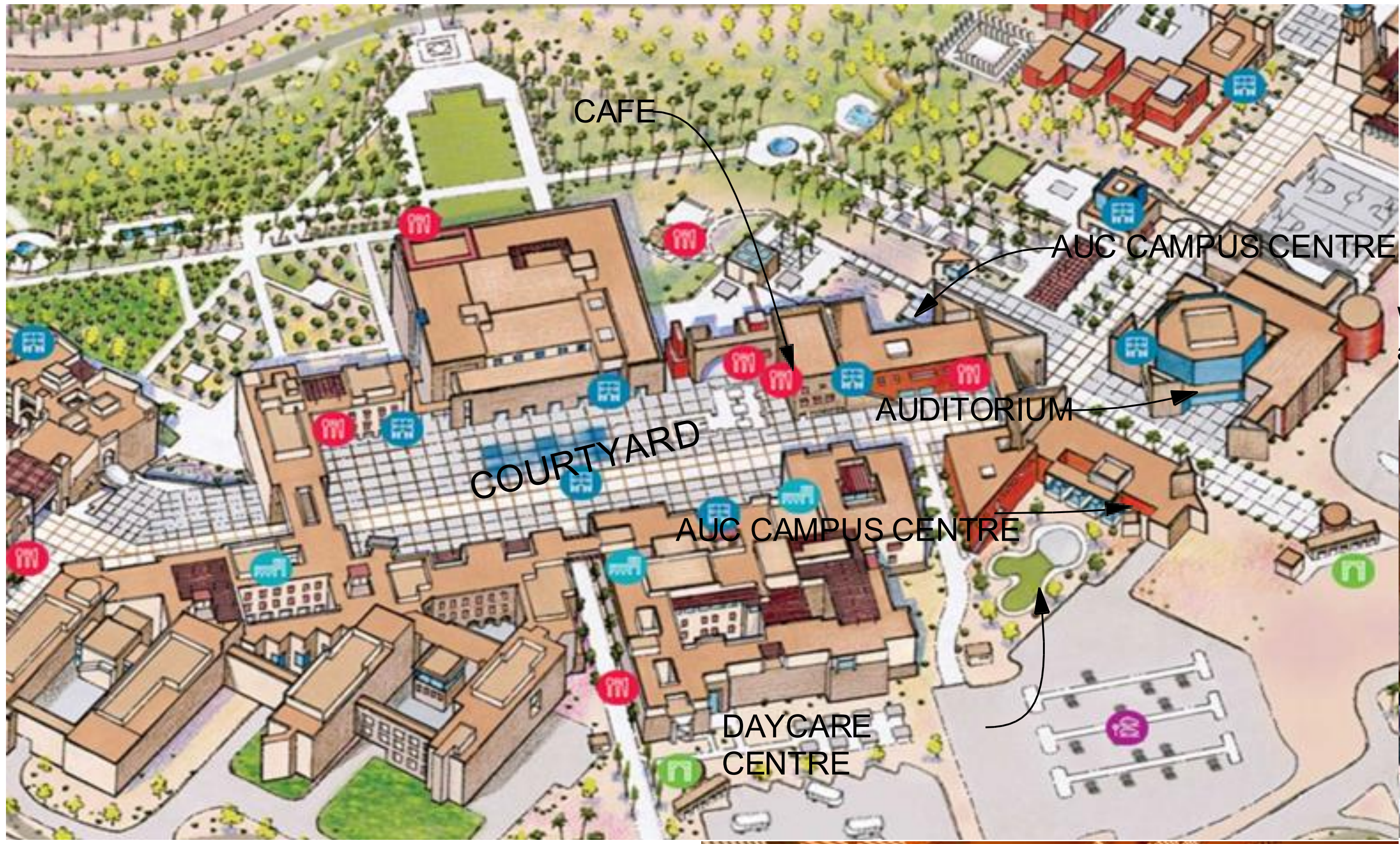
Volumes & Levels: High ceilings, grand staircases, long corridors, and double-height spaces like the Oriental Hall. The circulation feels ceremonial

Materials & Texture: Polished marble floors, carpeted ceramic tiles ,dark wood paneling,doors,and plastered walls.The textures are rich and tactile

Lighting: Primarily natural light from large windows, supplemented with classic ambient artificial lighting.

AMERICAN UNIVERSITY OF CAIRO-CAMPUS CENTRE (GROUP 3)

LANDSCAPE AND STRUCTURAL ORDER



a dynamic interplay between "hardscape" (inanimate, structural elements) and "softscape" (living, natural elements)

Pavilions & Pergolas: Scattered throughout for outdoor seating and study,providing shade and social nodes.

Water Features: Used strategically for cooling and aesthetic pleasure,such as the reflective pools

Open Spaces: The defining feature .Vast plazas,green wadis (dry riverbeds),and numerous courtyards create a microclimate and beautiful vistas.

Pathways & Boulevards: The central boulevard is the main pedestrian and service artery,lined with trees and seating.A network of pathways connects all elements.

Child-Centered Design: The design likely incorporates principles aimed at fostering children's physical, social, cognitive, and emotional development through play-based learning

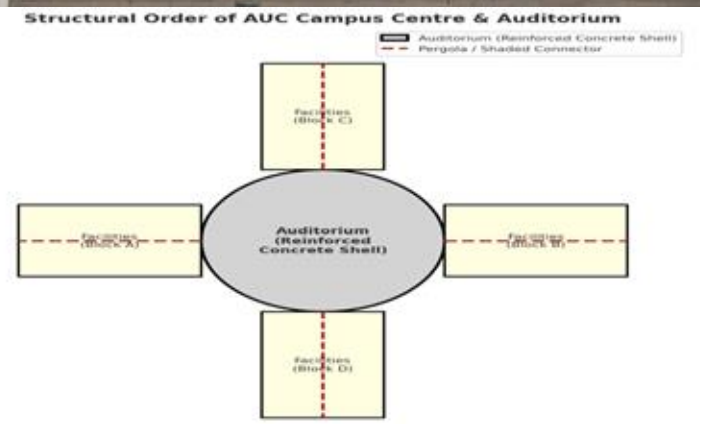
STRUCTURAL ORDER

A reinforced concrete frame system (columns, beams, slabs) provides the main structural support, consistent with Cairo’s construction practices and seismic requirements.

The walls are primarily masonry and concrete clad with sandstone and textured finishes for thermal insulation and durability.

Its primary structure is a reinforced concrete shell and frame system, with the roof designed to span large distances without interior columns (to maintain clear sightlines).

Acoustics and load distribution required double-wall construction—a structural wall plus an acoustic buffer.



AMERICAN UNIVERSITY OF CAIRO-CAMPUS CENTRE (GROUP 3)

SUSTAINABILITY

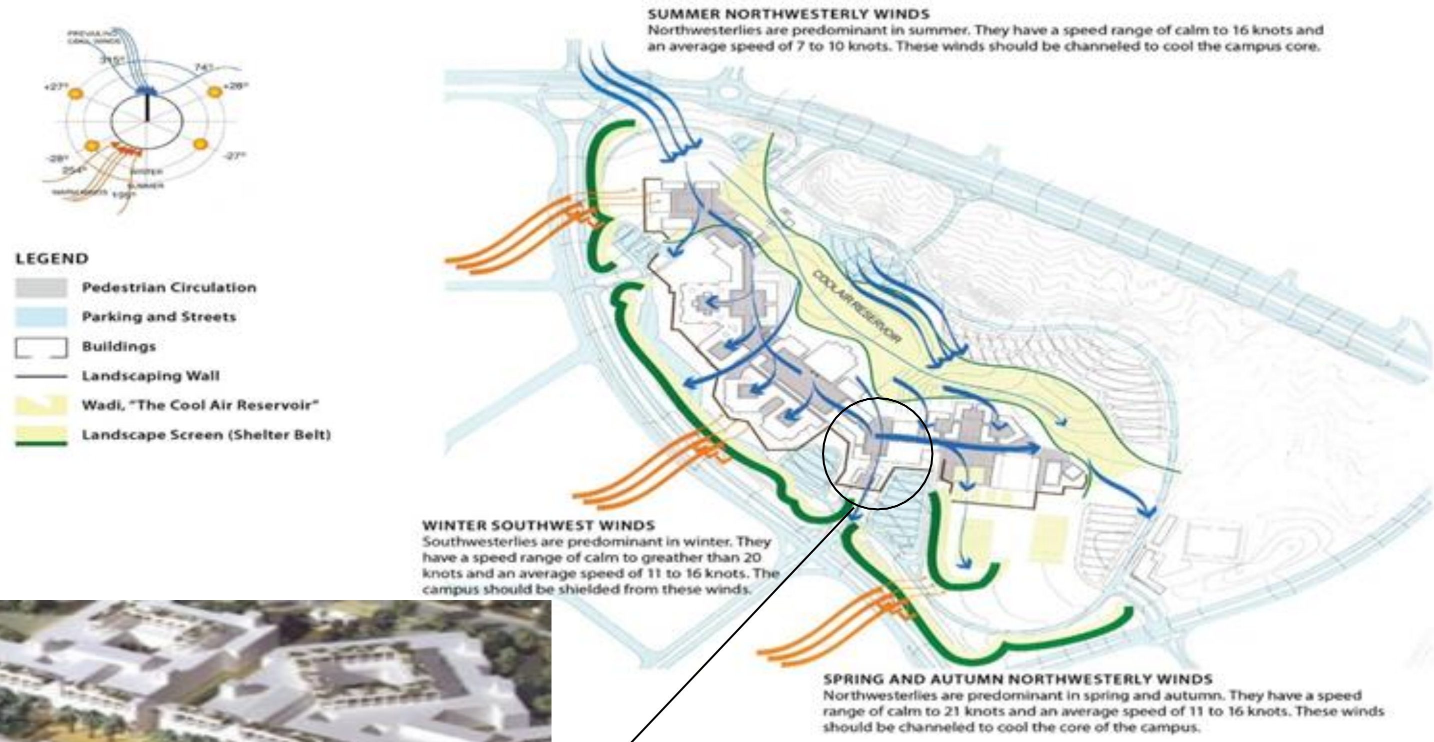
The University incorporates passive cooling strategies,evaporative cooling and use of local materials to enhance comfort. It makes use of energy efficient technologies in its commitment to green architecture.

PASSIVE DESIGN STRATEGIES

1. Building Orientation

The buildings are oriented along the east- west axis therefore minimizing exposure to the low morning and evening sun reducing heat gain lowering cooling loads.

The orientation also captures the prevailing north and northwest winds hence cooling the courtyards and walkways.



MAPS MODERN CAMPUS NET.

N

2. Courtyards and Atriums

SASAKI

The buildings are organized around courtyards and shared atriums creating microclimates with cooler air pools reducing heat build -ups.

It allows for natural ventilation through stack effect.

3. Material use

limestone cladding

SASAKI

The use of locally available materials like limestone and concrete reducing

Limestone and concrete have high thermal mass Therefore, absorb the heat during the day and release it during the night.

They delay heat transfer to the interior thereby reducing indoor temperatures during the day.

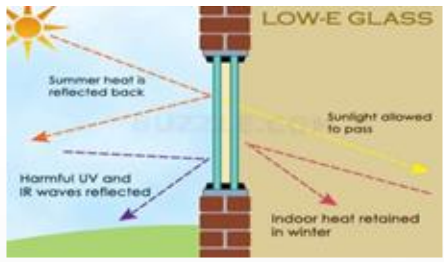
4. Shading Devices

double glazed windows

SASAKI

mashrabiya

pergola



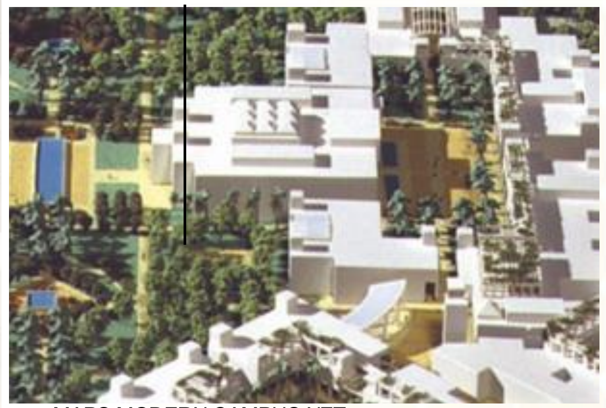
DUCO GROUP -DUCO-NZ

The building makes use of pergolas, colonnades, mashrabiyas to reduce direct solar radiation, filtering daylight and reducing glare while still maintaining visibility.

it also makes use of double-glazed glass windows reducing glare and enhancing visibility.

5. Natural Ventilation

Landscaping on the North side



MAPS MODERN CAMPUS NET.

Extensive landscaping and shade:The master plan emphasizes creating a "cool, low reservoir"of air. A large, heavily planted garden on the north side of the campus filters and cools the summer winds before they enter the buildings.Shaded pathways, canopies, and trellises further reduce direct solar radiation across the campus.

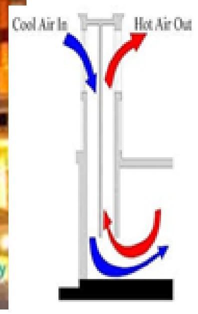
SASAKI

Windows are placed on opposite side of the walls this creates cross ventilation reducing the need for mechanical ventilation.

AMERICAN UNIVERSITY IN CAIRO/ PROJECT

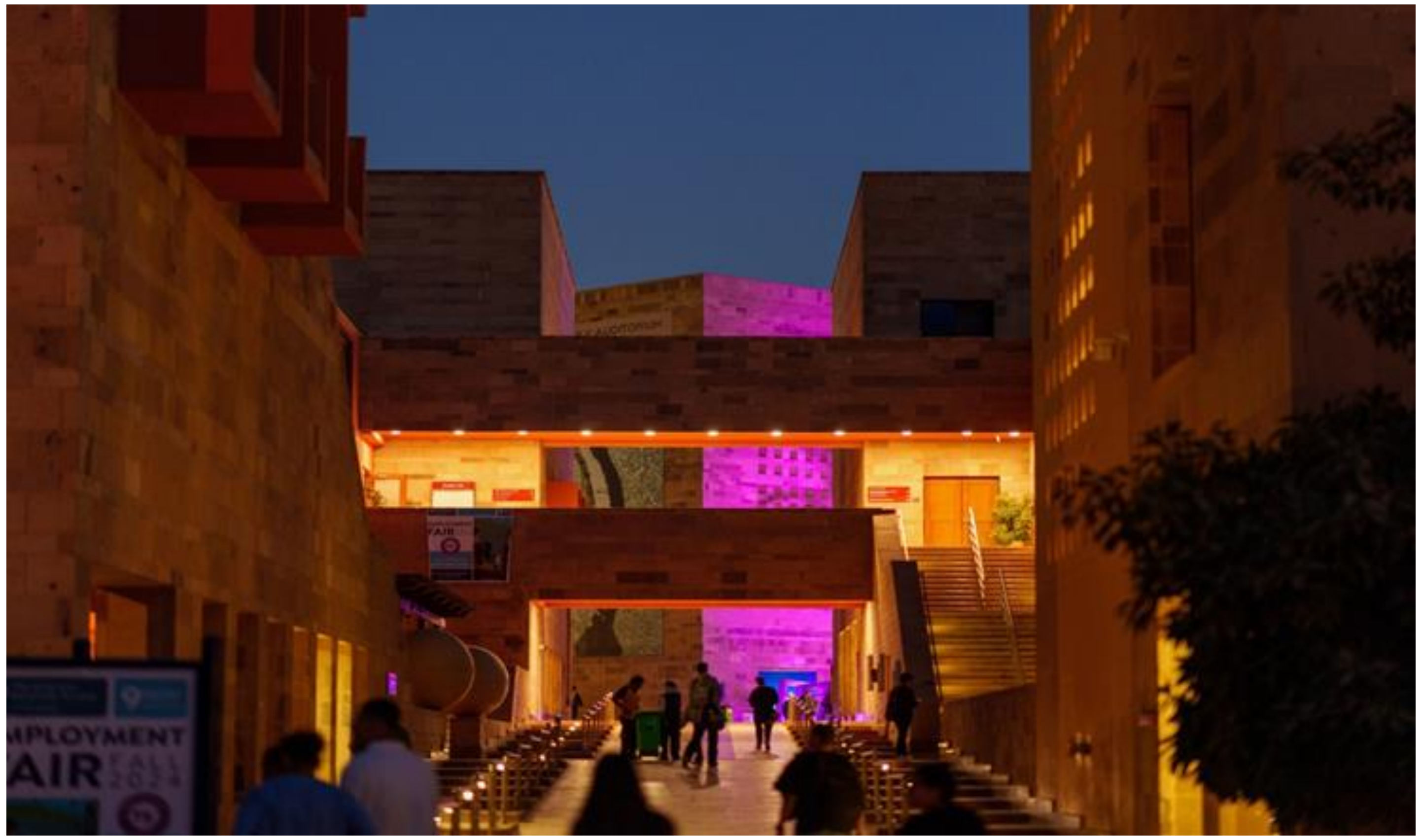
Campus Centre atrium has double - height halls and semi-open gathering areas.

TECHNOLOGIES



American University in CAIRO
Free-Apply. com

One of the building incorporates the use of windcatchers, or malqaf, which are ancient Egyptian passive cooling. This feature significantly improves indoor air quality and air velocity. Through stack ventilation



MAPS.NET.COM

American University in CAIRO
Archidatum. com

Evaporative Cooling:
Extensive use of fountains, reflecting pools and narrow water channels inspired by islamic garden design. As dry desert air passes over water surface evaporation lowers the air temperature . the cool air drifts into adjacent spaces improving comfort.

1. Grey Water Recycling System

CAMPUS INITIATIVES/ AMERICAN UNIVERSITY IN CAIRO

Grey water is recycled and reused for landscape irrigation and some water features, This thus reduces the reliance on freshwater in a water scarce desert region.

2. Energy - Efficient HVAC and Zoning

HASSAN ALLAM HOLDING

The campus uses a district cooling plant that supplies chilled water through an underground network to all buildings , which is used where there is need thus reducing the overall need for air conditioners. HVAC intensity is adjusted based on the number of occupants in a space.

3. Energy Efficiency

LEGORRETA/ AMERICAN UNIVERSITY IN CAIRO/ PROJECTS

The centre minimize electricity waste, AUC exclusively utilizes LED lights for outdoor fixtures and high-efficiency tube lights and motion sensors are installed in corridors

The campus centre integrates smart lighting system by the use of sensors and BMS to monitor and control temperature, lighting and ventilation for efficient operation.
AUC generates 30% to 40% of its power requirements using a process that converts the heat produced from air conditioning systems into electricity

NEWS New Phase of Faculty Housing
Complete, Embeds Green Concept

Integration of renewable energy e.g the use of solar panels and solar thermal collectors on select roofs reduces the energy required for lighting and hot water supply.

USER FEEDBACK

Students & Faculty

✅ The students and most of the users consistently highlight the thermal comfort of the new campus. Shaded courtyards, colonnaded walkways, and mashrabiya-inspired screens reduce glare and heat, making outdoor spaces usable for study and social interaction.

✅ The architectural language is seen as a cultural asset, tying modern learning spaces to Egyptian heritage.

✅ Some note that long walks between academic clusters in the midday heat are exhausting despite shaded arcades.

Operational Staff

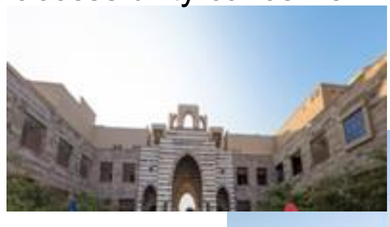
✅ Report that while stone screens and courtyards are durable, desert dust requires frequent cleaning (especially mashrabiya façades and water features).

✅ Some areas suffer from over-shading, creating dim interiors and reliance on artificial lighting during the day.

Visitors & Administrators

✅ The campus is praised as a landmark of sustainable, culturally rooted design, winning the 2009 ULI Global Award for Excellence. Visitors are impressed by its monumental scale, but faculty and students sometimes find it too vast, making daily use tiring.

✅ Location in New Cairo means lengthy commutes from central Cairo, which adds accessibility concerns.



STRENGTHS AND LIMITATIONS

✅ **Cultural Resonance** – Mashrabiya-inspired stone screens, local limestone, and alabaster root the design in Egyptian and Islamic traditions, rather than imported glass-and-steel aesthetics.

✅ **Thermal Comfort**

- Passive strategies dominate:

1. High thermal mass walls
2. Shaded arcades
3. Narrow courtyards
4. Evaporative cooling from water features

Together, they reduce solar heat gain, cut cooling loads, and improve thermal comfort.

✅ **Outdoor Usability** – Shaded plazas and courtyards are actively used for teaching, exhibitions, and informal gatherings, encouraging a pedestrian, vibrant campus lifestyle.

✅ **Urban Integration** – The masterplan uses a spine- and-courtyard system. Academic clusters are arranged around courtyards, with a pedestrian boulevard and 1.6 km underground service tunnel keeping cars and services out of the central campus.

✅ **Durability & Longevity** – Heavy stone and concrete withstand desert conditions (wind erosion, sand abrasion, temperature swings) better than lightweight cladding.

b) Limitations

⚠ **High Construction Cost** – Cost exceeded $400 million, making it one of the region's most expensive university projects. Use of natural stone and custom detailing raised budget concerns.

⚠ **Maintenance Demands** – Shading screens and water features require frequent cleaning in the dusty desert climate, raising long-term operational costs.

⚠ **Lighting Challenges** – Some academic spaces are too dim, forcing reliance on artificial lighting — a common complaint among faculty.

⚠ **Scale & Walkability** – At 260 acres, the monumental size is impressive but impractical for everyday use. Long walking distances between faculties are a regular user concern.

⚠ **Inflexible Shading** – Unlike adaptive façades such as the Abu Dhabi's Al Bahar Towers, AUC's mashrabiya screens are static. They are low-maintenance but are not kinetic to adjust changing sun angles.

References

The American University in Cairo. (n.d.-a). *Architects*. Retrieved from AUC New Cairo architectural vision and design firms. American University in Cairo

The American University in Cairo. (n.d.-b). *AUC New Cairo*. Retrieved from overview of campus features and facilities. American University in Cairo

The American University in Cairo. (n.d.-c). *Background*. Retrieved from construction materials, scale, and sustainability features. American University in Cairo

The American University in Cairo. (2018, November 13). *AUC celebrates 10 years in New Cairo campus: The vision, the architecture and the impact on New Cairo neighborhood*. [Press release]. American University in Cairo

The American University in Cairo. (n.d.-d). *Buildings*. Retrieved from list of New Cairo campus buildings and spaces including the Campus Center. American University in Cairo

AUC Today. (n.d.). *Behind blueprints* [Article detailing Campus Center spaces and functions]. AUC Egypt

Parsi, N. (2024, June 28). *The American University in Cairo launches a 270,000-sf expansion of its campus in New Cairo, Egypt*. *Building Design+Construction*. BDC Network

Fluor International. (n.d.). *American University in Cairo project and construction management*. Retrieved from project scope and campus layout description. Fluor

Archidatum. (n.d.). *The American University in New Cairo / Sasaki Associates*. Retrieved from description of master planning design by Sasaki. Archidatum

Sasaki. (n.d.). *The American University in Cairo New Campus*. Retrieved from campus master planning and building programming details. Sasaki

MDPI. (2023). Enhancing social qualities in university campus outdoor spaces through Islamic spatial configurations: The case of the American University in Cairo. *Buildings, 13*(5), Article 1179. MDPI

The American University in Cairo. (n.d.-e). *Campuses* (Arabic page including New Cairo campus named spaces). Retrieved from AUC New Cairo buildings including Campus Center. American University in Cairo

Wikipedia contributors. (2025, August). *American University in Cairo*. In *Wikipedia*. Retrieved from description of campus center and facilities. Wikipedia

Wikipedia contributors. (2025, ~9 months ago). *Khairy Pasha Palace*. In *Wikipedia*. Retrieved for historical context and architectural lineage related to AUC's original campus.

Chapter 6: Reflections on the Strathmore Students' Centre, Nairobi

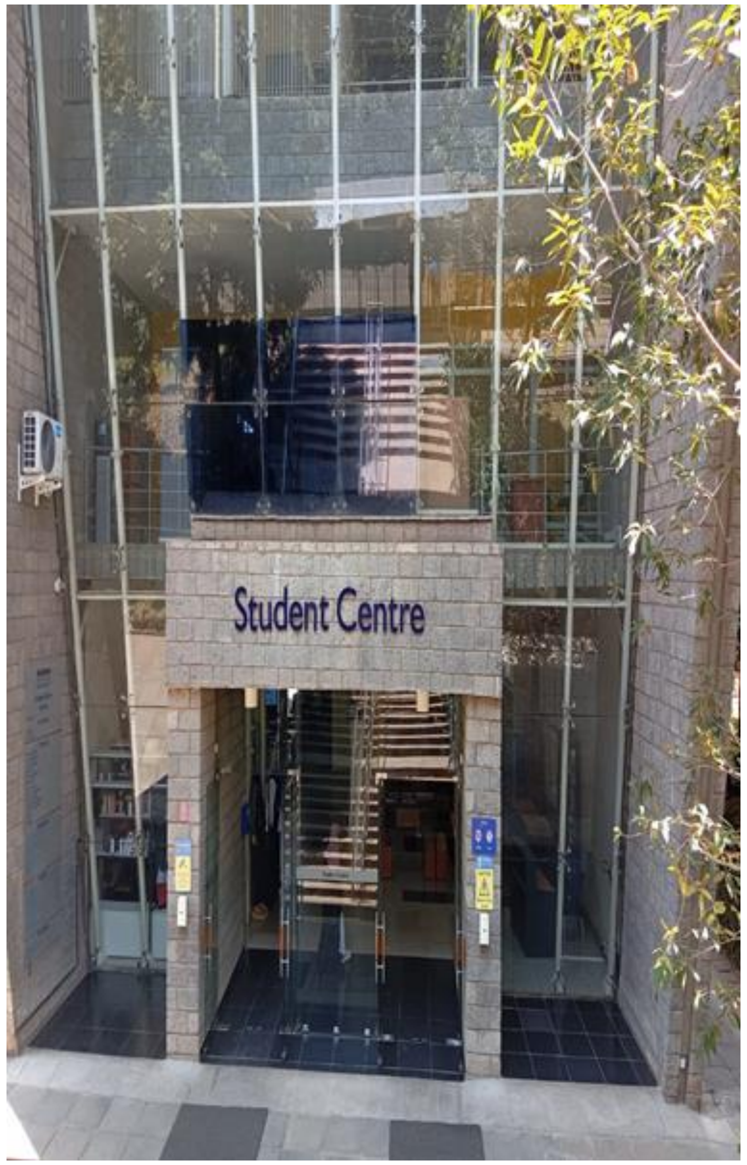
The focus of discussion here is on a well analysed international, award-winning precedent of an architectural design project of a Student Centre, and in its analysis that emphasises concepts and technical considerations.

B.A.S Year IV
Contributing student researchers and designers, 2025/26 academic year,
Group 4

Victor Maina
James Kimani
Happiness Nabulindo
Vivienne Ombolo
Benson Theuri
Damaris Atayi
Clara Kamau
Magalie Kasangati
Brian Kamau
Ben Carson Kariuki

DESIGN ANALYSIS: OVERVIEW

1. BACKGROUND OF THE STUDY
2. ANALYSIS OF DESIGN BRIEF AND FUNCTIONAL LIBRARY
3. LOCATION AND SITE CONTEXT
4. DESIGN ANALYSIS
5. SUSTAINABILITY AND INNOVATION
6. USER FEEBACK
7. STRENGTH AND LIMITATIONS
8. PROJECT CRITIQUES
9. REFERENCES



Source,own 6/9/25

1. BACKGROUND OF THE STUDY

NAME OF THE PROJECT: STRATHMORE STUDENTS' CENTER
NAME OF FIRM: LEXICON AND ION
YEAR OF DESIGN: 2006
YEAR OF CONSTRUCTION: 2009- 2010
AREA:
CAPACITY: ABOUT 10,000 INDIVIDUALS
COST: 500 MILLION (HALF WHAT WAS BUDGETTED FOR)

ARCHITECTURAL STYLES & THEORIES
A.MODERNISM
-THE BUILDING HAS CLEAN LINES ,GEOMETRIC FORMS AND MINIMAL ORNAMENTATION
-THE PRACTICAL USE OF CONCRETE GLASS AND STEEL AS THE MAIN MATERIALS
-FORM FOLLOW FUNCTION,WHERE CIRCULATION AND USABILITY HAVE BEEN PRIORITIZED OVER DECORATION

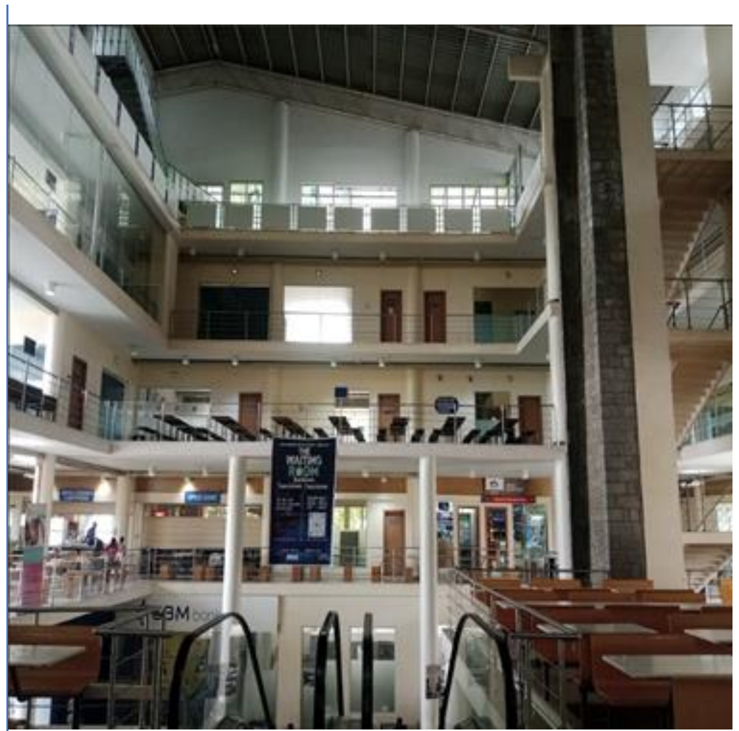
2. CONTEMPORARY ARCHITECTURE
INTERGRATION OF CLIMATE RESPONSIVE FEATURES.THE BUILDING HAS SHADING DEVICES ,EVAPORATIVE COOLING SYTEM
-MAXIMIZING USE OF DAYLIGHT HENCE LESS RELIANCE ON ARTIFICIAL LIGHT

THEORIES REFLECTED
FUNCTIONALISM-THE SPACES ARE CLEARLY DESIGNED TO SERVE THE NEEDS OF THE STUDENTS:FOOD COURTS,LOUNGES ,EVENT HALLS &CIRCULATION SPACES
-FLEXIBLE INTERIORS ALLOW FOR MULTIPURPOSE USE AND EASY ADAPTATION TO FUTURE NEEDS;TO ACHIEVE THIS INTERIOR PARTITIONS HAVE BEEN MADE BY GYPSUM BOARDS MAINLY

HUMAN-CENTERED DESIGN
THE SPACES ENCOURAGE SOCIAL INTERACTION AND INCLUSIVITY THROUGH THE OPENPLAN.

- THE LAYOUTS ALSO ENCOURAGE COLLABORATION AND COMMUNITY BONDING.

Source,own 6/9/25



Source,own 6/9/25

GREEN ARCHITECTURE THEORY
EMPHASIS ON SUSTAINABILITY
THE BUILDING ALSO HAS A LEED CERTIFICATION (PRINCIPLES: ENERGY EFFECIENCY,REDUCED CARBON EMISSIONS AND ECO-CONCIOUS DESIGN)

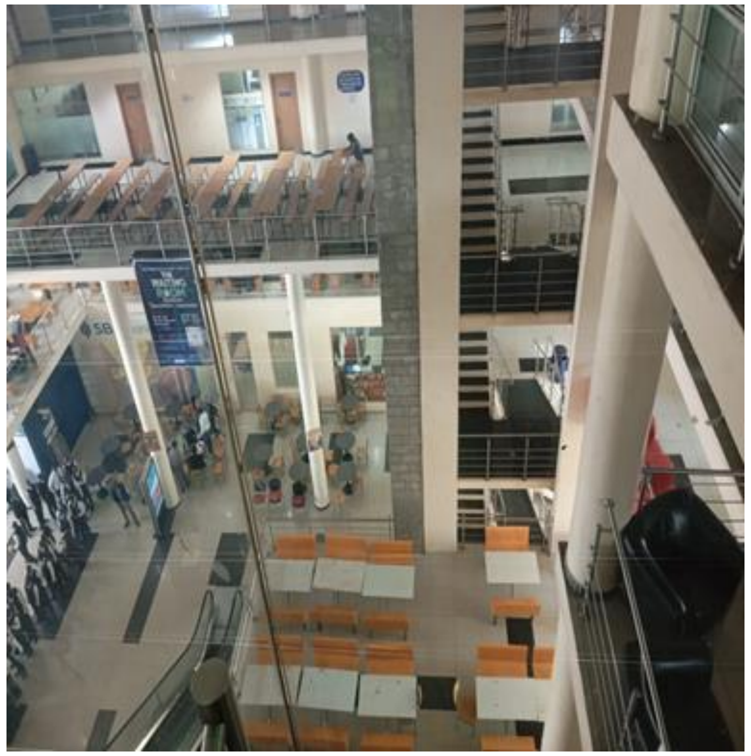
PROJECT INTENT &VISION
THE STUDENT CENTER WAS ENVISIONED AS A SOCIAL AND A CULTURAL HEART OF THE CAMPUS WHERE LEARNING ,RECREATION AND COMMUNITY LIFE INTERSECT. ITS INTENT WAS TO EMBODY STRATHMORE'S COMMITMENT TO SUSTAINABILITY BY PIONEERING GREEN BUILDING DESIGN AND ALSO ENSURING HOLISTIC EDUCATION WHILE RESPONDING TO NAIROBI'S CLIMATE AND AFRICAN SOCIAL CULTURE.

2.ANALYSIS OF DESIGN BRIEF AND FUNCTIONAL LIBRARY

SPATIAL CONSIDERATIONS

GROUND FLOOR
RESTAURANT
SITTING AREAS
OUTDOOR GAZEBOS
BANKING SERVICES
BOOKSHOP & STATIONERY

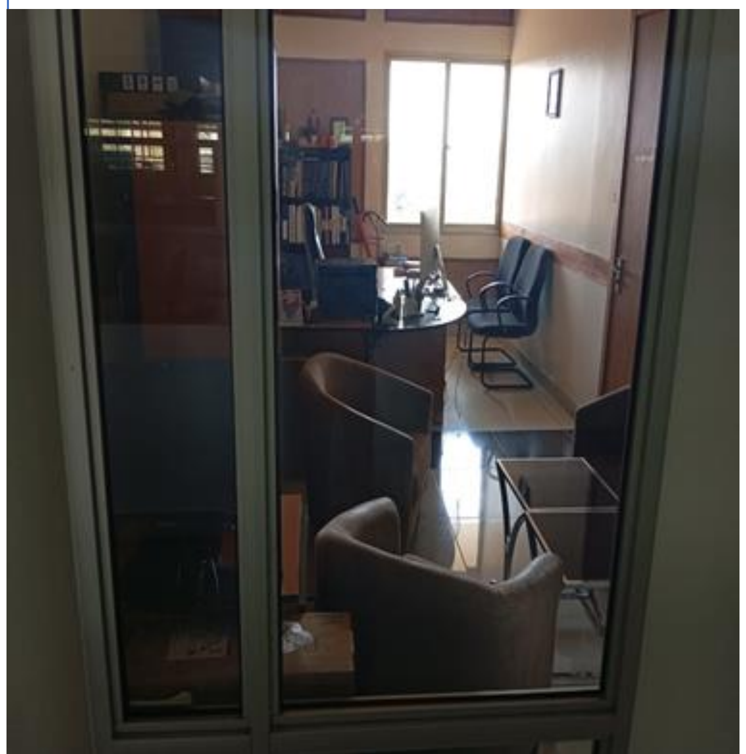
FIRST FLOOR
LIBRARY RESEARCH LAB
CAFETERIA
MPESA AND BANKING SERVICES



A photo showing a section of the ground floor and first floor layout. Source: Victor M. (2025)

SECOND FLOOR
STUDENT SERVICES
CHAPLAIN OFFICES
COMMUNICATION OFFICE
RECORDING STUDIO
WRITING CENTER OFFICES
MENTORING SERVICES
RESEARCH AND CONSULTANCY CENTER
CLUBS AND SOCIETY

THIRD FLOOR
OFFICES
DEAN OF STUDENTS
STUDENT COUNCIL
STAFF SILENT READING AREA



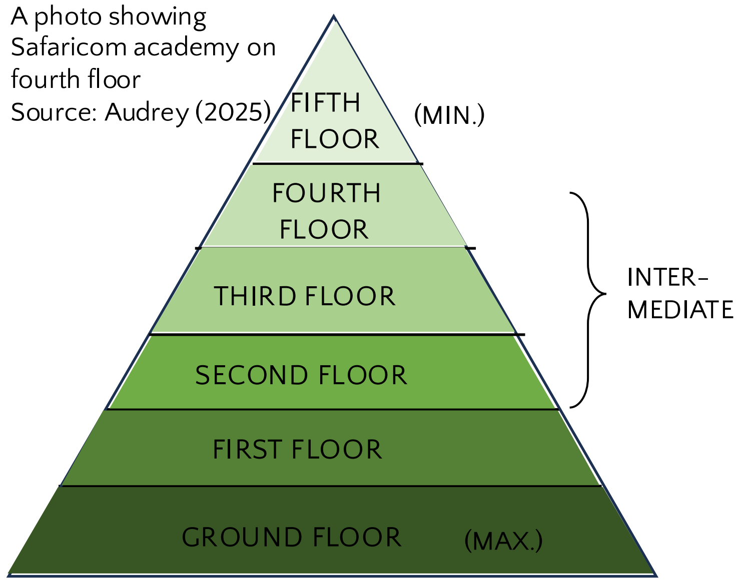
A photo showing an office on third floor
Source: Bencarson K. (2025)

FOURTH FLOOR
RESEARCH LAB
COMPUTER LABS
RESTAURANT ON TERRACE FLOOR

FIFTH FLOOR
BUSINESS INCUBATOR

A photo showing computer lab on the fourth floor
Source: Vivienne O. (2025)

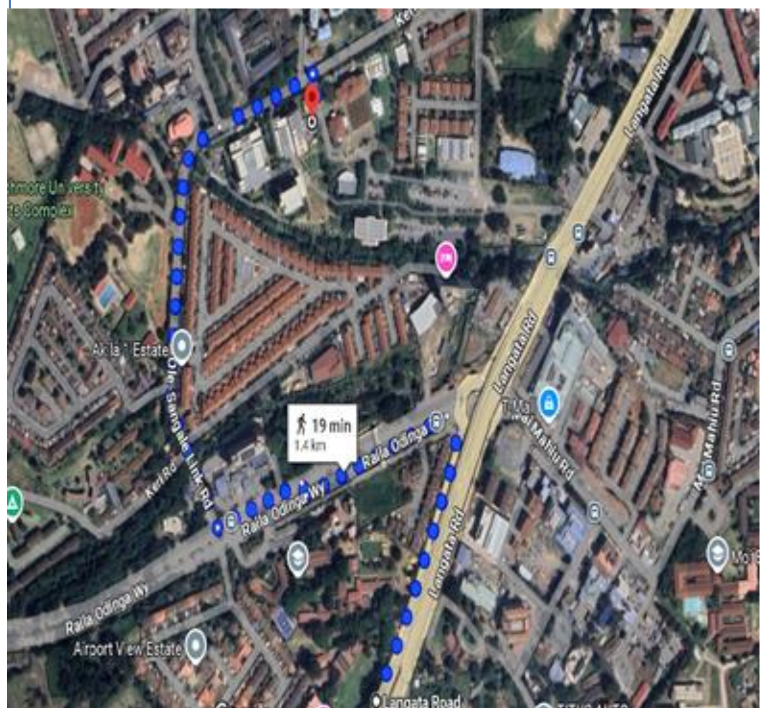
A photo showing Safaricom academy on fourth floor
Source: Audrey (2025)

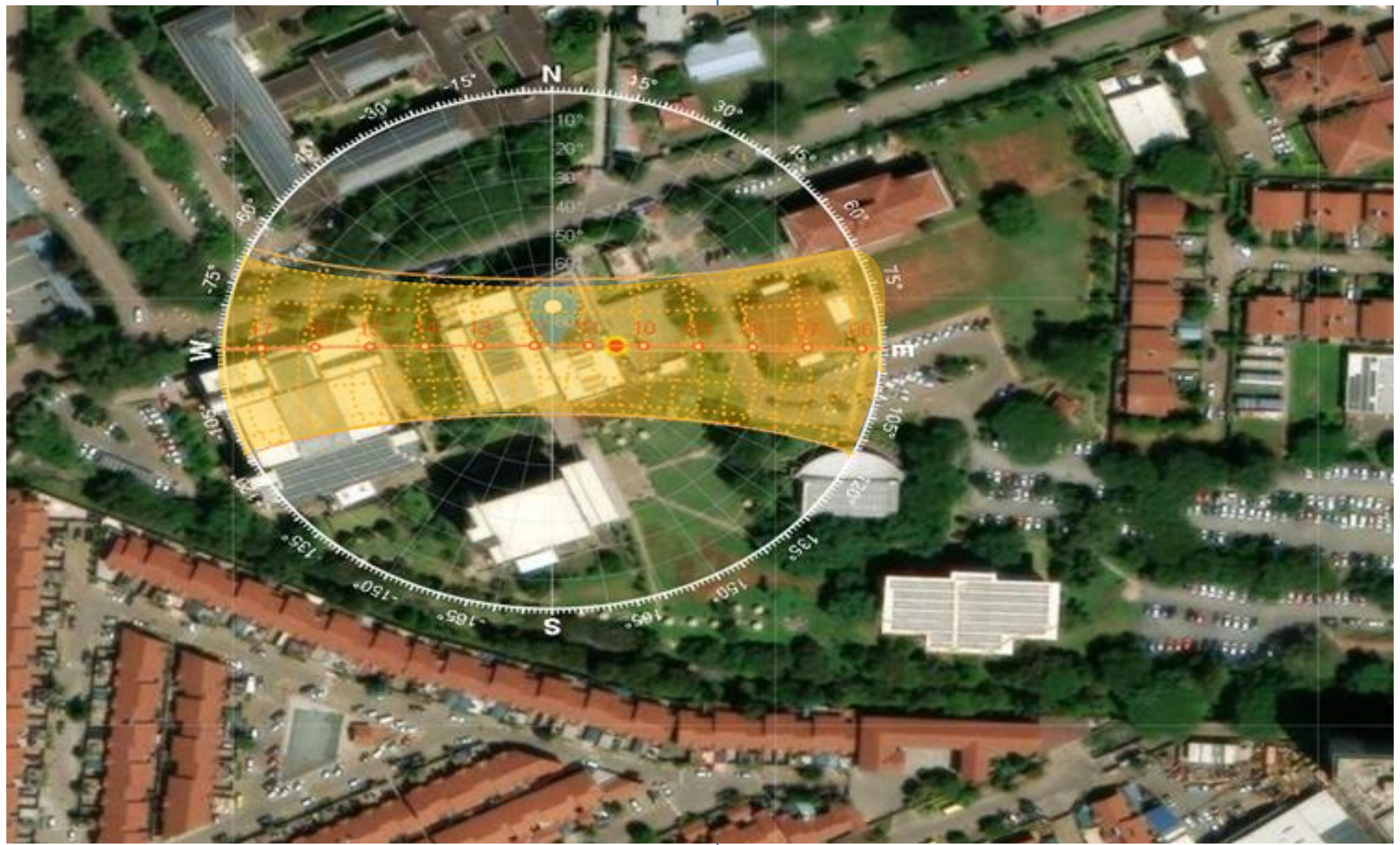


A graphical representation showing average foot traffic/noise level per floor
Source: Clara K. (2025)

3. LOCATION AND SITE CONTEXT

LOCATION AND ACCESS
LOCATION; KERI ROAD, STRATHMORE UNIVERSITY , MADARAKA ESTATE , NAIROBI VEHICULAR ACCESS; LOCATED OFF OLE SANGALE ROAD, LANG'ATA AREA PEDESTRIAN ACCESS: BUILDING IS CENTRALLY LOCATED WITHIN CAMPUS ,
ACCESSIBLE VIA KERI ROAD .





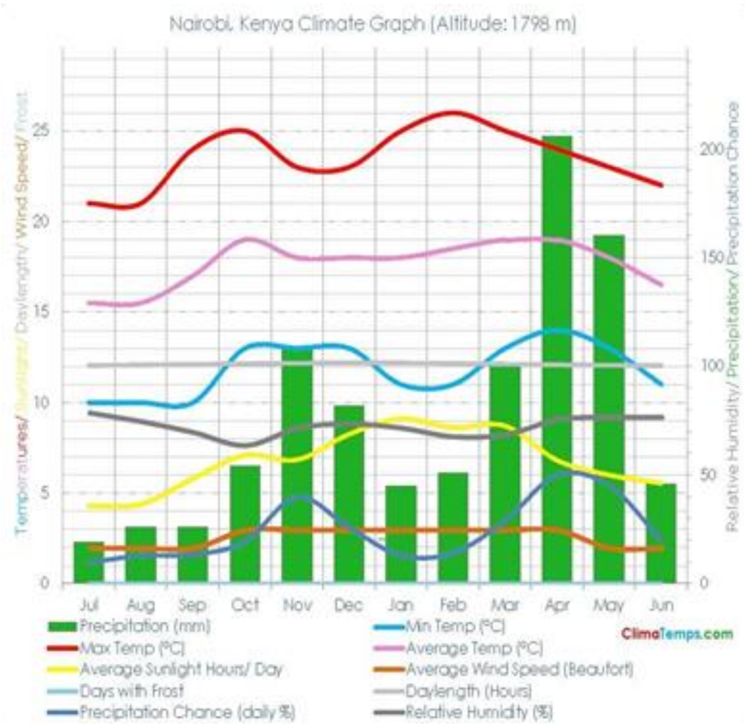
A MAP SHOWING THE SUN PATH
SOURCE: METEO1.NET

<u>WINDSPEED</u>
LOW TO MODERATE , FAIRLY STABLE
<u>RELATIVE HUMIDITY</u>
HIGHER DURING RAINY MONTHS
(UP TO 80%)
LOWER IN DRY MONTHS (55%)
USE OF BREATHABLE MATERIALS
(CONCRETE, STONE,
NATURAL FINISHES)
GOOD AIRFLOW DESIGN HELPS
MAINTAIN COMFORT .

<u>PRECIPITATION</u>
TWO RAINY SEASONS WITH MOST RAINFALL
RECEIVED IN APRIL
(210MM)
SHELTERED COURTYARDS
PREVENT DISRUPTION

A MAP SHOWING THE NEIGBORHOOD OF STRATHMORE
STUDENTS CENTRE
SOURCE: GOOGLEMAPS

<u>SUNLIGHT AND DAY LENGTH</u>
RELATIVELY CONSISTENT DAY LENGTH
(11-12) HOURS PLENTY OF NATURAL LIGHT IS
HARNESSED THROUGH LARGE WINDOWS , BUT
SHADING DEVICES ARE CRUCIAL TO PREVENT
GLARE (ON WESTERN SIDES)



A graph showing various weather aspects per month
Source: climatemps.com

<u>TEMPERATURE</u>
MAX TEMP: 22^0 C-26^0C
MIN: 10^0C-14^0C
PASSIVE DESIGN
STRATEGIES:CROSS VENTILATION

Neighborhood character
SITS WITHIN STRATHMORE'S ACADEMIC
PRECINCT, SURROUNDED BY MODERN
INSTITUTIONAL BUILDINGS WITH A MIX
OF BRICK , CONCRETE AND GLASS
FINISHES

CHARACTER INFLUENCE:
BUILDING DESIGN BALANCES MODERN
UNIVERSITY ARCHITECTURE WITH
CONTEXTUAL SENSITIVITY USING DURABLE
MATERIALS.

EXTERNAL ZONING POLICY – MADARAKA

THE STUDENTS' CENTRE IS LOCATED IN MADARAKA SOUTH B ZONE FALLS UNDER LOW DENSITY MIXED USE ZONE. THIS INCLUDES RESIDENTIAL, EDUCATIONAL AND COMMERCIAL.

BUILDING HEIGHT RESTRICTIONS

THE MAXIMUM NUMBER OF FLOORS FOR MADARAKA SOUTH B ZONE IS 8 FLOORS. THIS IS ESPECIALLY IMPORTANT AS THE SITE IS LOCATED ALONG WILSON AIRPORT'S FLIGHT PATH.

PLOT RATIO %	GROUND COVERAGE %	NO. OF LEVELS	MIN. SIZE		DESCRIPTION
400	80	8	0.05ha	500m2	Low density mixed use

Table showing zoning policies

TOPOGRAPHY

THE AREA HAS GENTLY SLOPING TERRAIN WITH GRADUAL ELEVATION CHANGES . THE STUDENT CENTER IS POSITIONED ON RELATIVELY LOW GROUND WHICH EASES ACCESSIBILITY.

Photo showing entrance to student hub
Source : Audrey (2025)

INTERNAL ZONING

Maina, 2026...Adapted from google earth pro, n.d

STRATHMORE UNIVERSITY IS DIVIDED INTO 3 PHASES WITH EACH PHASE CONSISTING OF DIFFERENT FUNCTIONS. STRATHMORE STUDENT'S CENTRE IS PART OF PHASE 3 WHICH IS THE ACADEMIC ZONE.

LEGEND

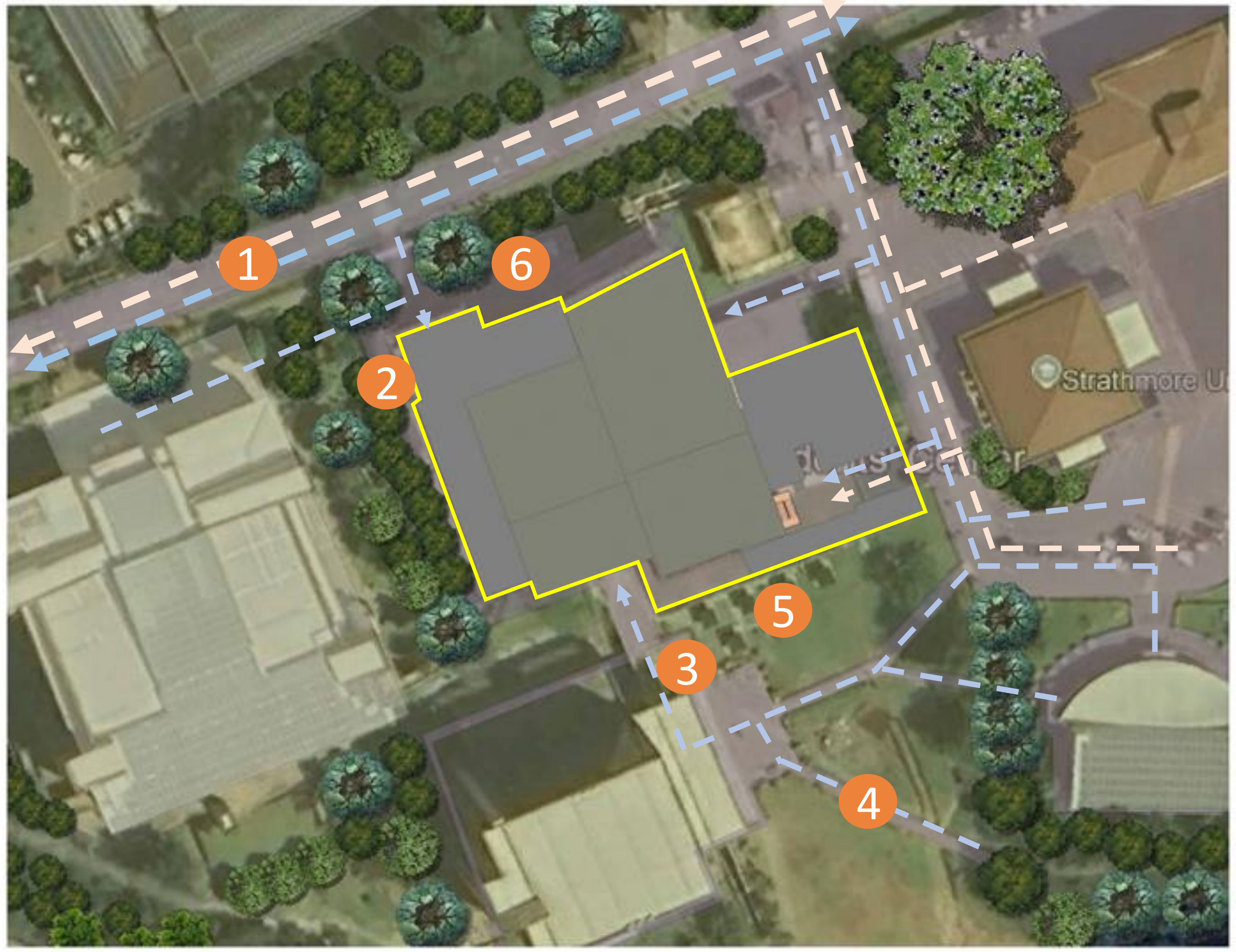
- PHASE 1- ADMINISTRATIVE ZONE
- PHASE 2- SOCIAL ZONE/ STUDENT SERVICES
- PHASE 3- EDUCATIONAL/ SOCIAL ZONE
- SITE BOUNDARY
- STRATHMORE STUDENT'S CENTRE

DEVELOPMENT CONTROL GUIDELINES

ZONE	AREA/ LOCATION	AREA/ LOCATION	PR %	GC %	NO. OF LEVELS	MIN. SIZE ha	M²	PLOT DESCRIPTION
		Wilson Airport	400	50	4	0.05	500	Subject to approval by Kenya Civil Aviation
10 B	Madaraka	Langata road – Mbagathi Way – Keri road	650	80	8	0.05	500	Low density mixed use
10 C	South B- South B, Plainsview Estate, Riverbank, Hazina Estate	Mombasa road – Likoni road – Ngong river	650	80	8	0.05	500	Mixed use with low density residential housing schemes
10 D	South C – Comprehensive schemes	Mugoya Estate, Akiba Estate, Mbugani Estate, South C Rangers Court, Memon Estate, Midland Court Estate, Five Star Estate, Leebarn Estate, Ruby Estate, Monali Estate, Soledo Springs Estate, Bandari Villas, Ash Gate Court, Highway Estate, Green Estate, Sifa Springs Estate, Amana Estate, Parkview Estate, Bellevue Estate	650	80	8	0.05	500	Mixed use with low density residential schemes

Maina, 2026...adapted from Nairobi City County Development Control Policy, 2023

DESIGN ANALYSIS – SITE ADAPTATION



SITE PLAN

THIS PLAN SHOWS HOW THE BUILDINGS ARE CONNECTED, HAVING THE STUDENTS CENTER CENTRALLY LOCATED AND SHOWS THE LANDSCAPING DONE IN THE SITE.

PEDESTRIAN CIRCULATION

VEHICLE CIRCULATION

VEGETATION

ACCESS ROAD – THIS TWO-WAY ROAD SERVES AS THE PRIMARY ACCESS TO THE STUDENT CENTER, HAS ADEQUATE PAVING TO THE RIGHT FOR PEDESTRIAN ACCESS AND A BOULEVARD TO THE LEFT MAKING GREENERY A KEY ASPECT OF THE PLANNING

PAVING AROUND THE BUILDING ALLOWING CIRCULATION FLOW TO AND FROM THE BUILDINGS ACCESS POINTS

GRADED LANDSCAPE – CREATES A FLAT GREEN AREA WITH A SLOPED ACCESS PATH TO THE STUDENTS CENTER

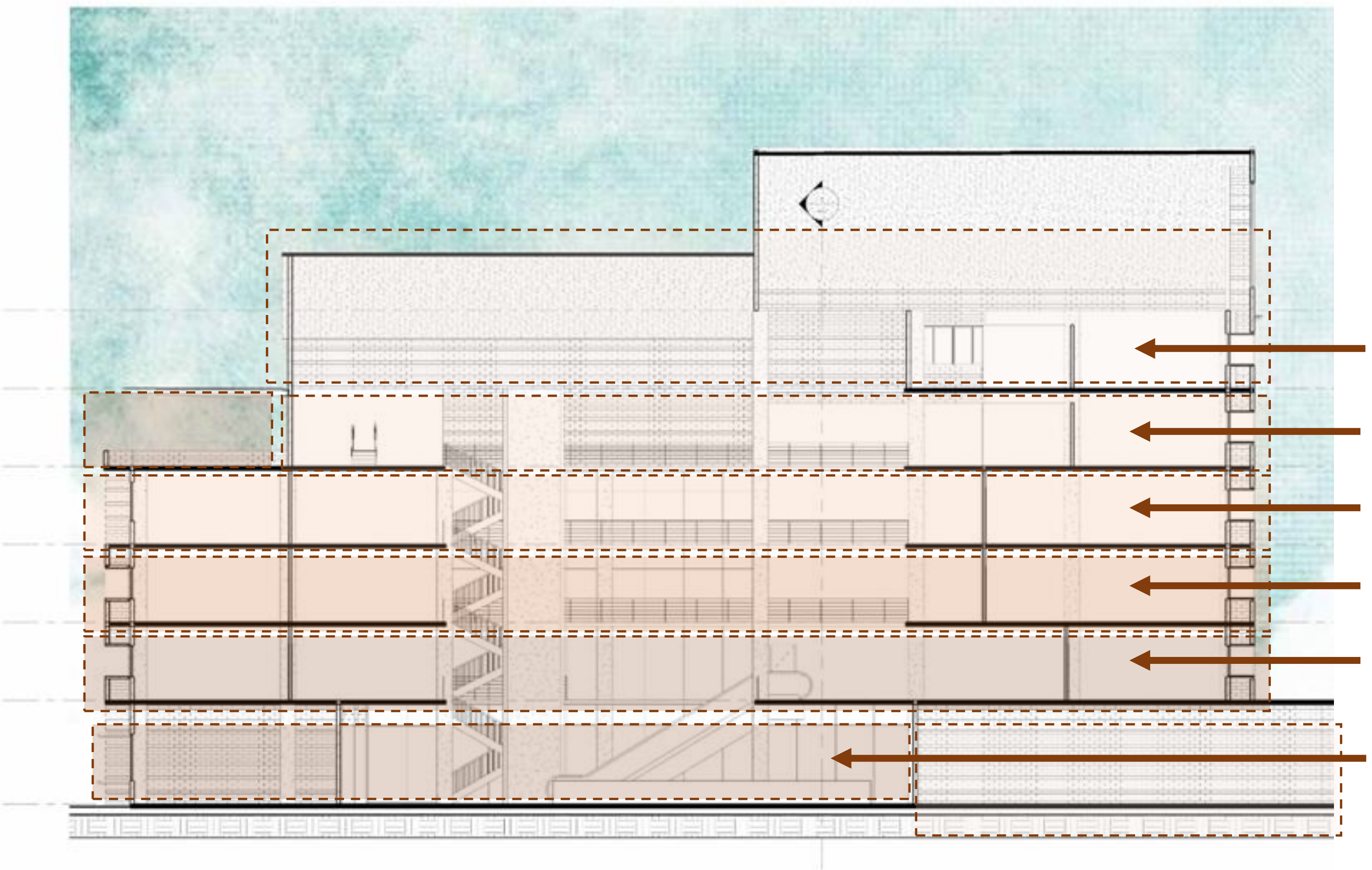
PCC BLOCK PAVERS – EASY CIRCULATION FROM THE BUILDING TO OUTDOOR SPACES AND OTHER FACILITIES WITHOUT STEPPING ON THE GRASS

GAZEBOS – OUTDOOR SEATING HAS ADEQUATELY BEEN CATERED FOR

SLOPED LANDSCAPING – SINCE THE BUILDING IS LOWER THAN THE SITE, A NATURAL SLOPE WITH TREES AND PLANTING OFFERS A SMOOTH TRANSITION EDGE

DESIGN ANALYSIS – SPATIAL ORGANIZATION

VERTICAL STACKING – SUPPORTING SERVICES SUCH AS WASHROOMS, STORAGE ROOMS AND CLEANING ROOMS ARE ON THE SAME LOCATION ON ALL FLOORS MAKING ACCESSIBILITY AND CIRCULATION ROUTES EASIER



PRIVACY GRADIENT – THE PRIVACY INCREASES WITH FLOORS, THE HIGHER YOU GO THE MORE PRIVATE THE SPACES BECOME MORE PRIVATE

FIFTH FLOOR – BUSINESS INCUBATORS

FOURTH FLOOR – BUSINESS INCUBATORS

THIRD FLOOR – STUDENT GOVERNANCE, SUPPORT AND GUIDANCE,

SECOND FLOOR – RESEARCH FACILITIES, STUDENT SUPPORT

FIRST FLOOR – CAFETERIA, BANKING SERVICES, RESEARCH LABS, COMPUTER LABS AND RECORDING ROOMS

GROUND FLOOR –CAFETERIA, BOOKSHOP, BANKING SERVICES

Spatial hierarchy

Main / Public spaces

1 **Cafeteria** – primary public attraction

2 **Bookshop** – visual draw from entrance/circulation spine.

3 **Banking Service (customer area)**

Outdoor sitting spaces

4 **Secondary / Support spaces**

5 Café servery or counter area for self service, circulation lobby, waiting/queuing area for bank.

Servant / Private spaces

Cash office / vault (bank), high security, restricted access.

6 Staff rooms, storage waste, washrooms

Privacy gradient

Public (High access / open)

Bookshop retail floor, Cafeteria general seating, main entrance lobby.

Semi-public

Cafeteria servery, counter, bank customer counters, waiting area, bookshop cashier zone.

Semi-private(restricted services)

bookshop storeroom, cafe staff room, staff toilets.

Private (secure or operational)

Bank vault / cash office, kitchen prep zones requiring controlled access, deliveries & waste handling zones.

Spatial hierarchy

1 **Main spaces** – cafeteria and sitting spaces

2 **Academic / Research core**

Research Labs, Computer Labs, Study Rooms, Creative rooms and Specialized Music Recording Rooms (sound isolation, acoustic treatment).

3 **Support / Admin Offices** (for staff, faculty), washrooms

Social / Flexible Breakout Spaces

(informal meeting, waiting, relaxation). Comfortable couches, clustered seating areas

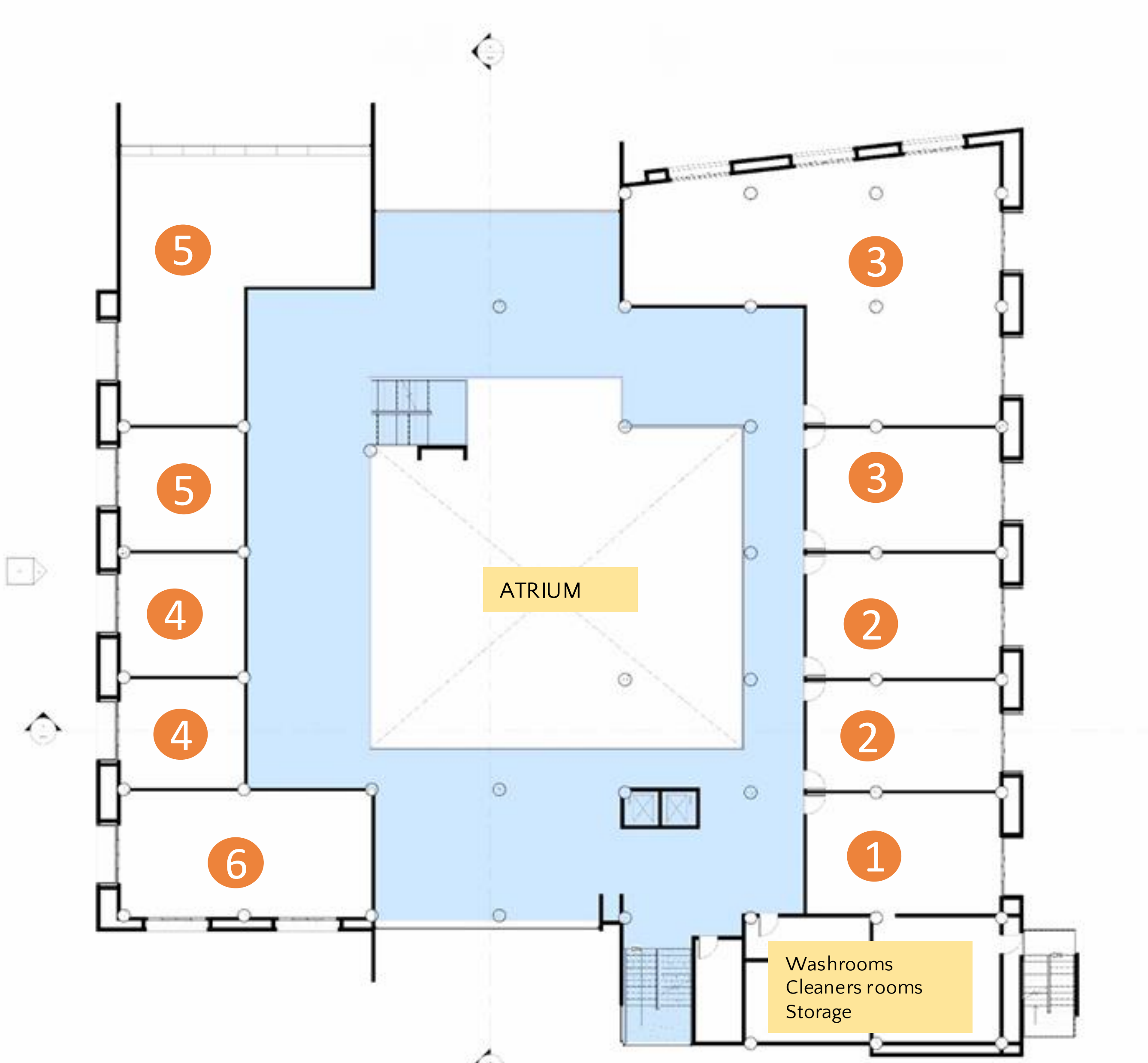
Privacy Gradient

Public / Semi-public: Cafeteria, serving area, sitting spaces Breakout spaces (open access, social)

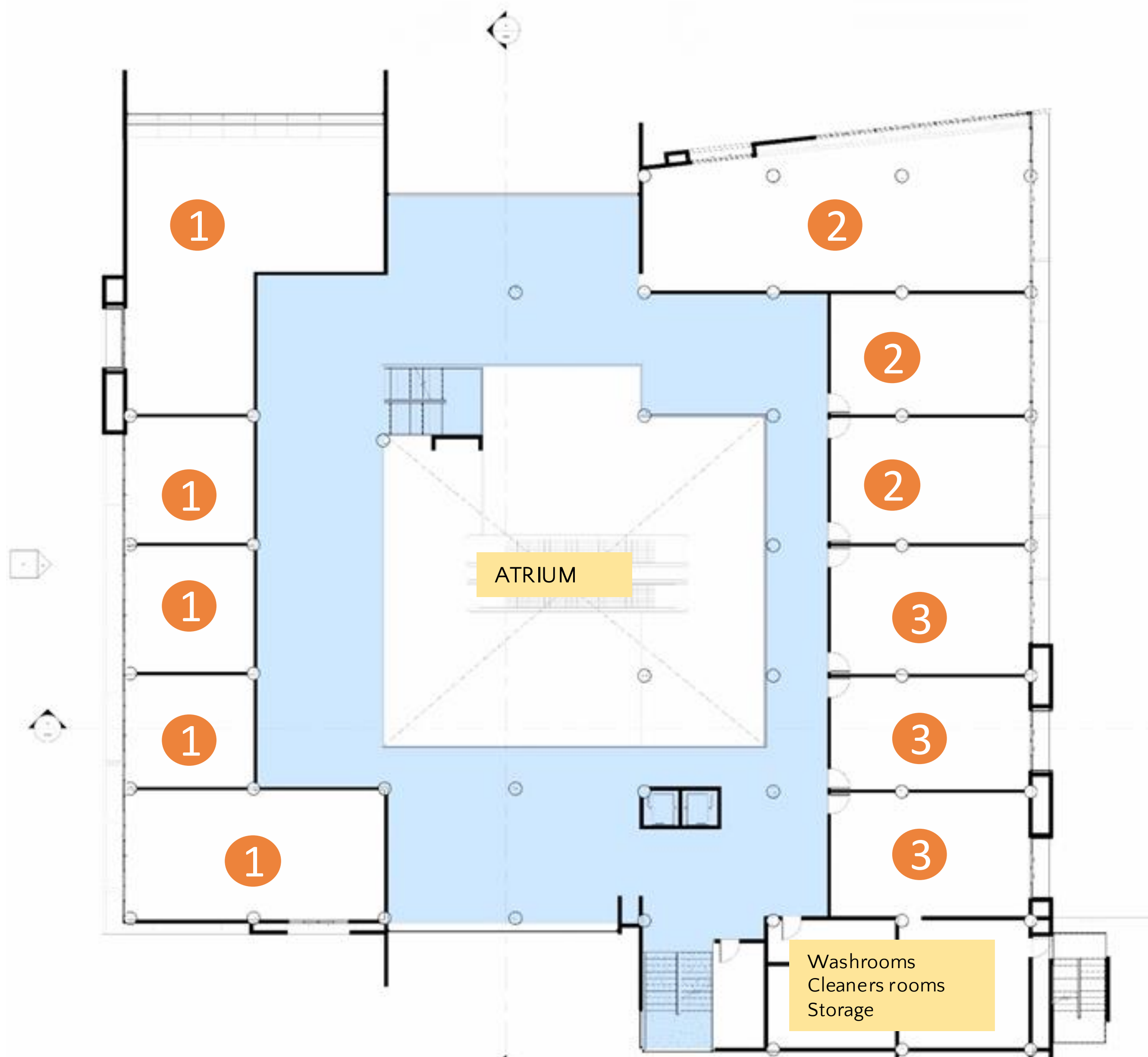
Semi-private: Study rooms, computer labs (student-focused but monitored), podcast recording rooms

Private: Offices, research labs (controlled access).

Very private: Music recording rooms (restricted, acoustic isolation).



SECOND FLOOR



THIRD FLOOR

Spatial Organization (by function)

Research / Academic

1 Strathmore Research Consultancy Center
2 Labs
3 Writing Center

Student Support Services

4 Mentoring Services
5 Attachment Office

Administration / Outreach

6 Communications and University Relations

Privacy Gradient

Public / Semi-public: Writing Center, Mentoring Services.
Semi-private: Attachment Office (student guidance, requires some confidentiality).
Private: Research Consultancy Center, Labs (restricted to researchers).
Very private: Communications & University Relations (sensitive data, admin-only areas).

Spatial Organization (by clusters)

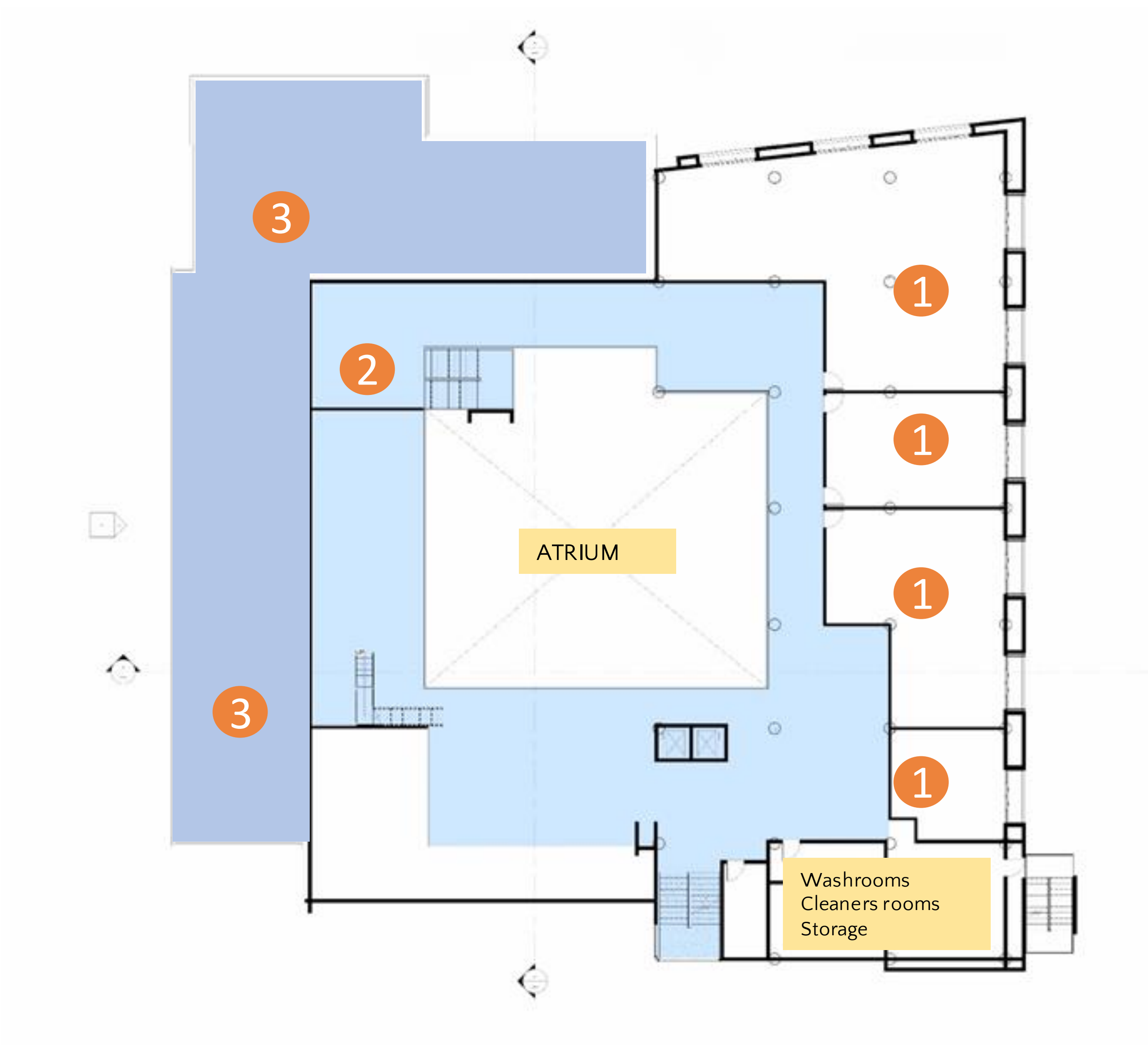
1 **Student Representation & Governance**
Student Council Offices
Governance Center

2 **Student Support & Guidance**
Mentoring Service Offices
Dean of Students Office
Career Development Office

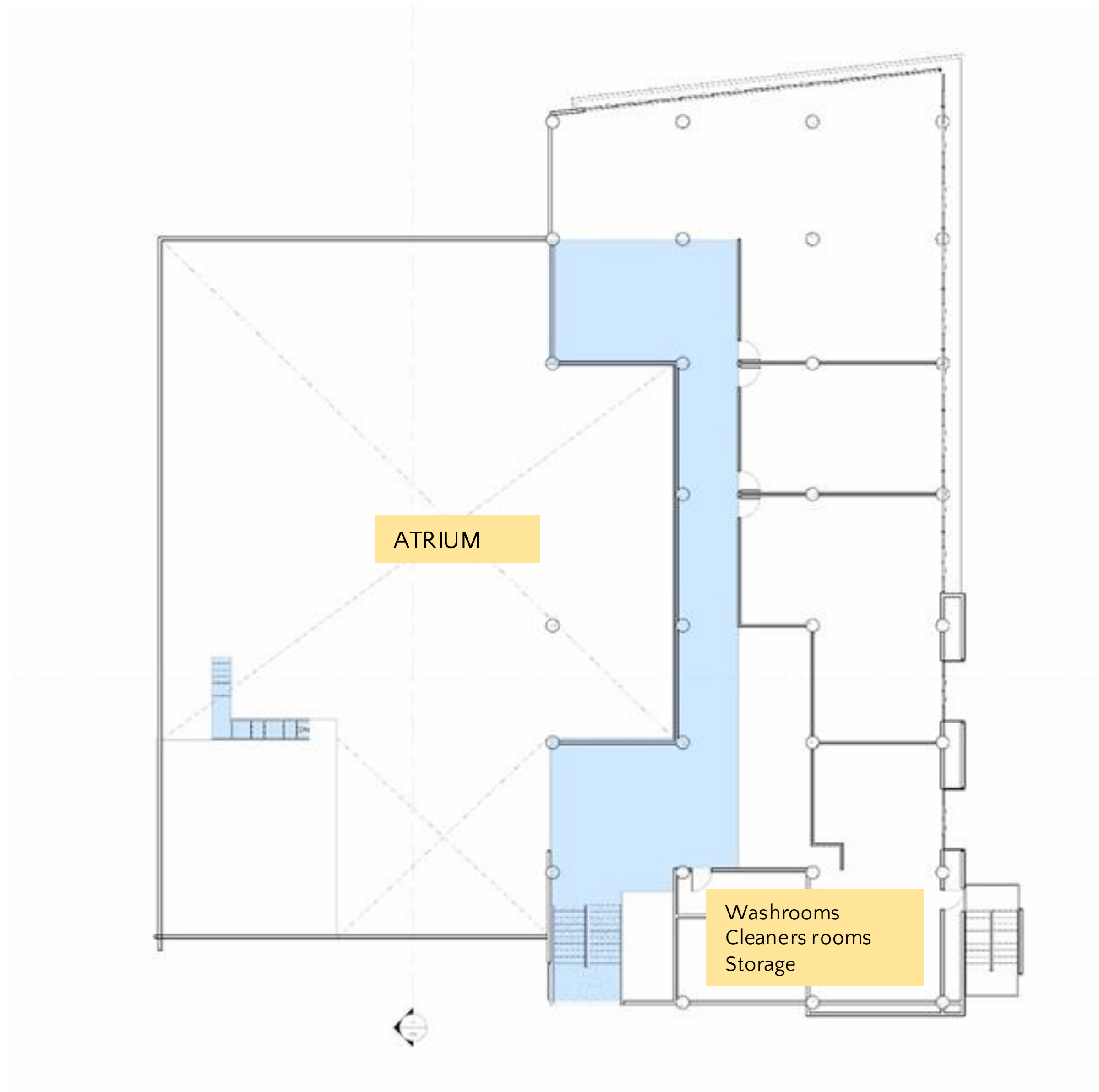
Outreach & Alumni
3 Community Outreach Programme
Alumni Office

Privacy gradient

Public / Semi-public:
Career Development Office (students visit freely), Community Outreach Programme (student-community interaction).
Semi-private:
Student Council Offices (student leaders), Alumni Office (requires appointments).
Private:
Mentoring Service Offices, Dean of Students Office (sensitive cases, confidential).Very private: Governance Center (policy discussions, high-level decisions)



FOURTH FLOOR



FIFTH FLOOR

Business incubators

Spatial Organization (by function)

1 **Labs (academic/research)** → semi-private, quiet, require controlled access and technical support.

2 **Cafeteria (social/refreshment)** → public/semi-public, attracts traffic and noise.

3 **Outdoor Terrace (leisure/social)** → public, spill-out space for relaxation and events.

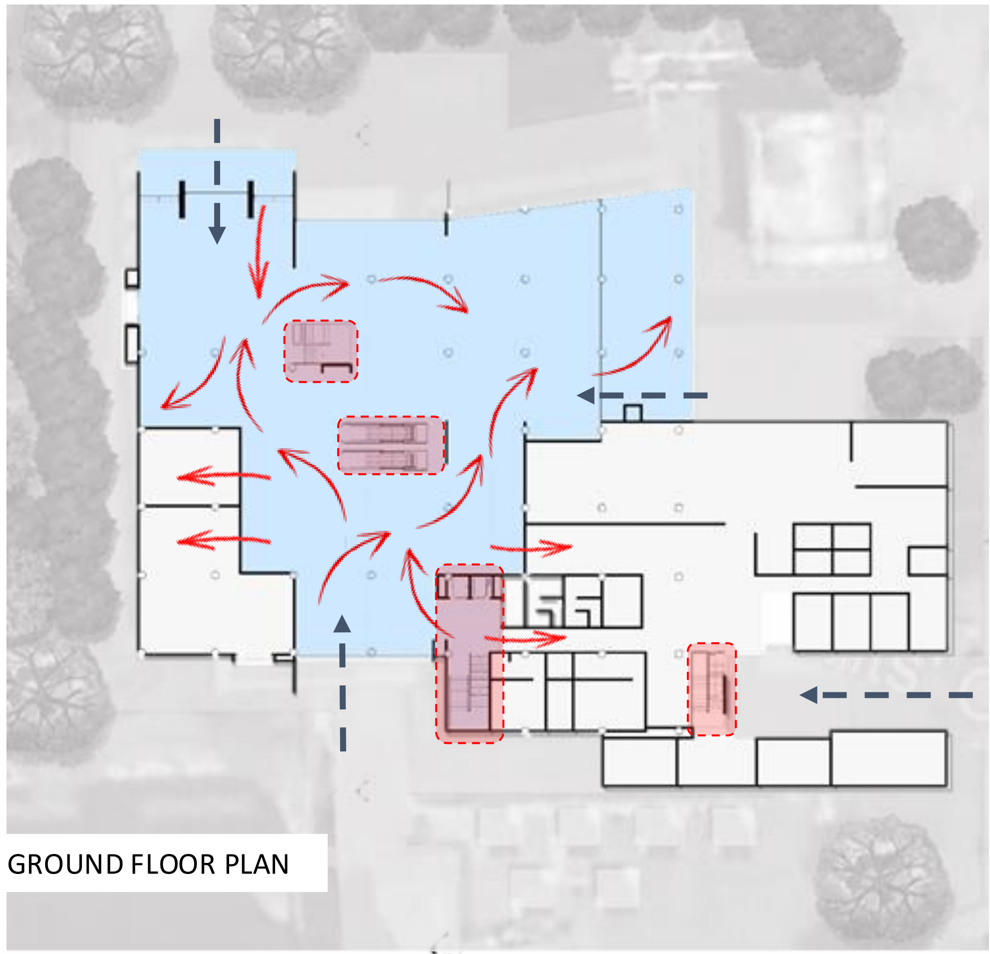
Privacy Gradient

Public: Cafeteria + Outdoor Terrace

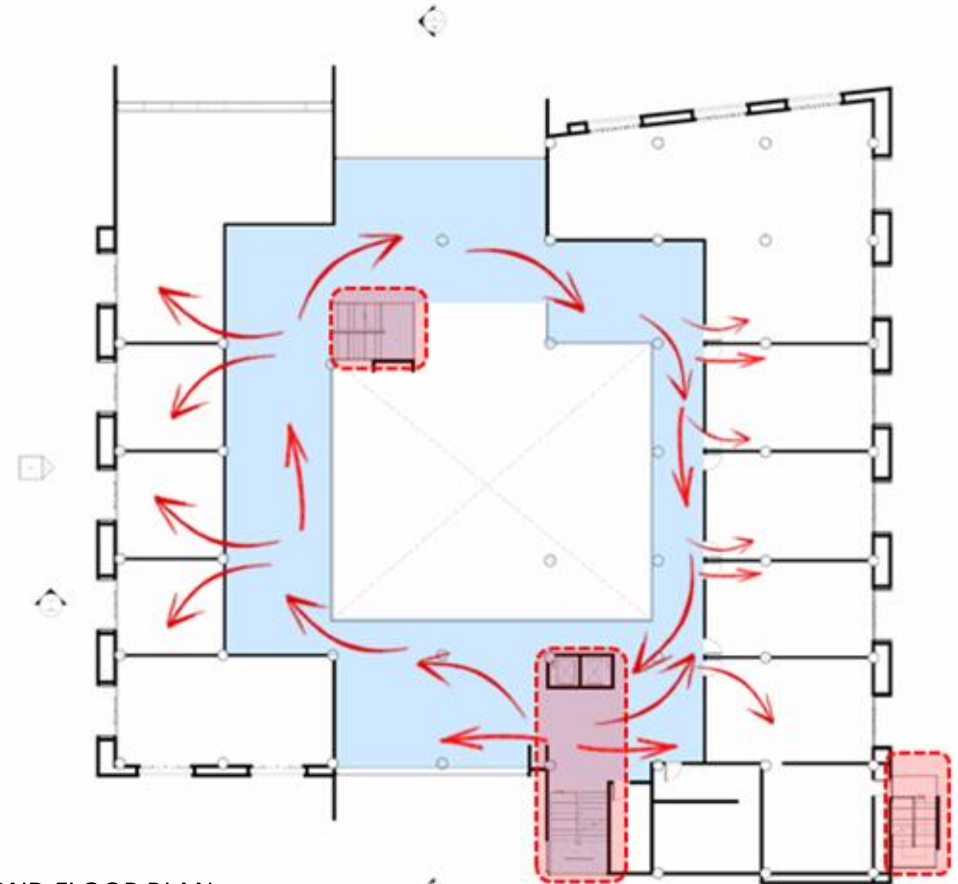
Semi-public: Shared circulation, informal seating areas

Private: Labs (buffered from noise, restricted entry)

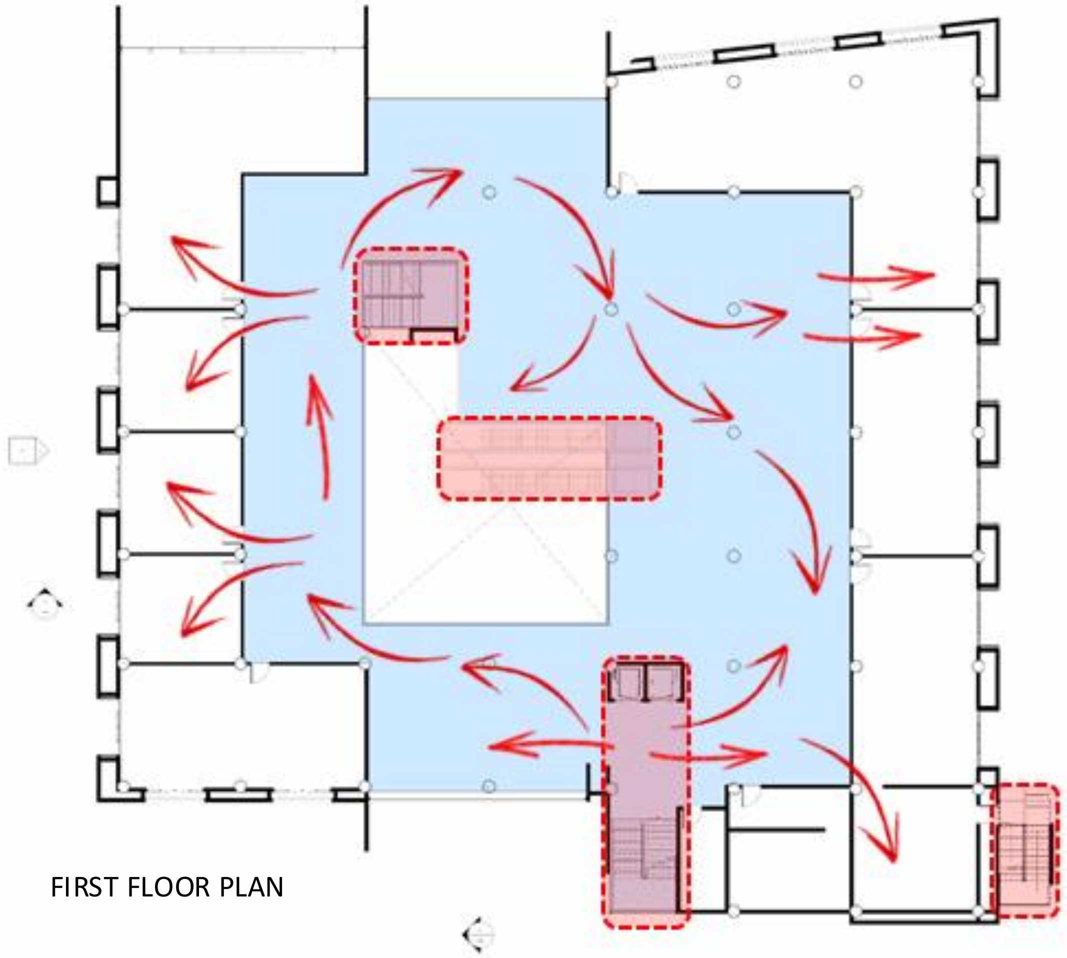
DESIGN ANALYSIS – HORIZONTAL AND VERTICAL CIRCULATION



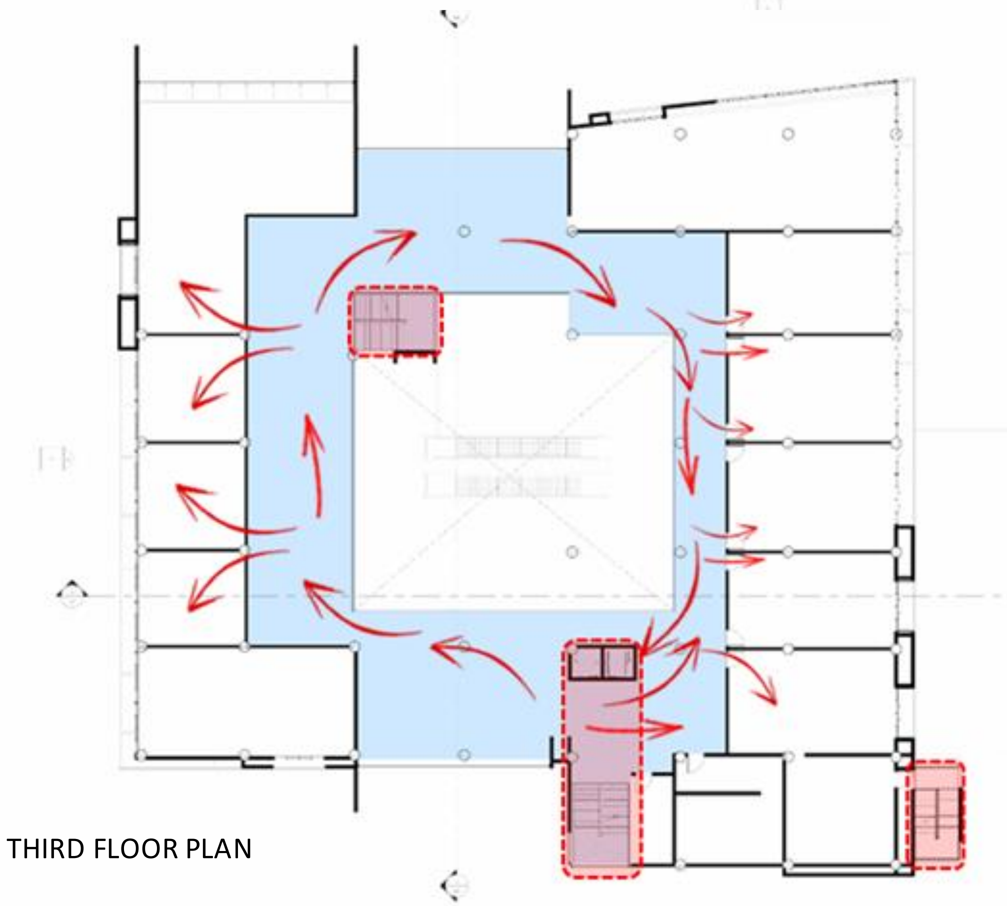
GROUND FLOOR PLAN



SECOND FLOOR PLAN



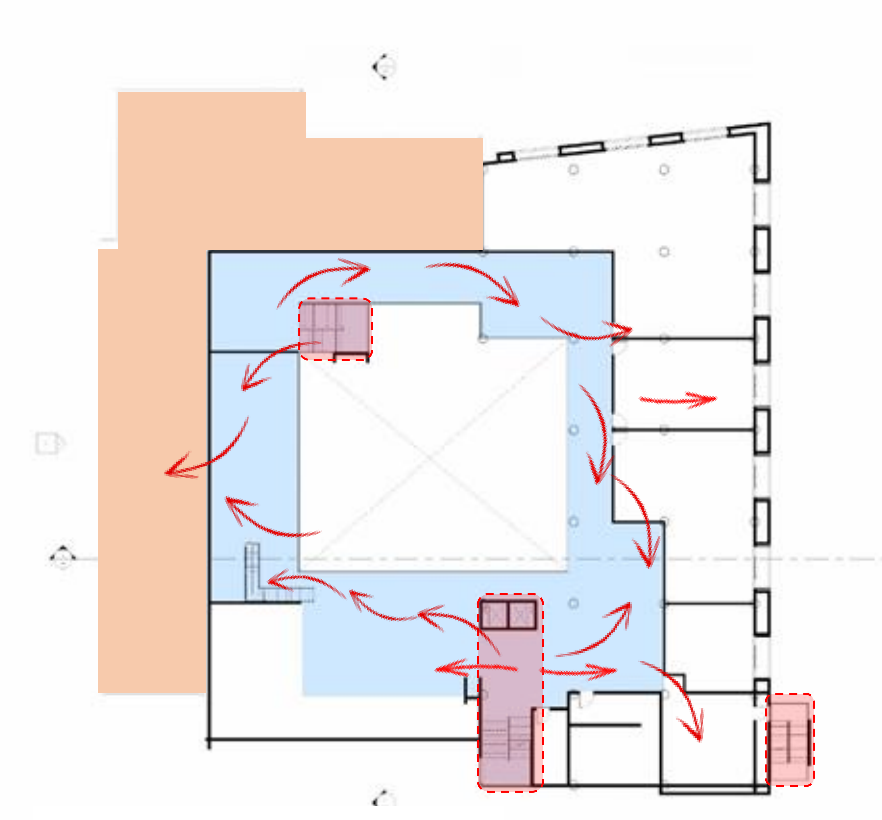
FIRST FLOOR PLAN



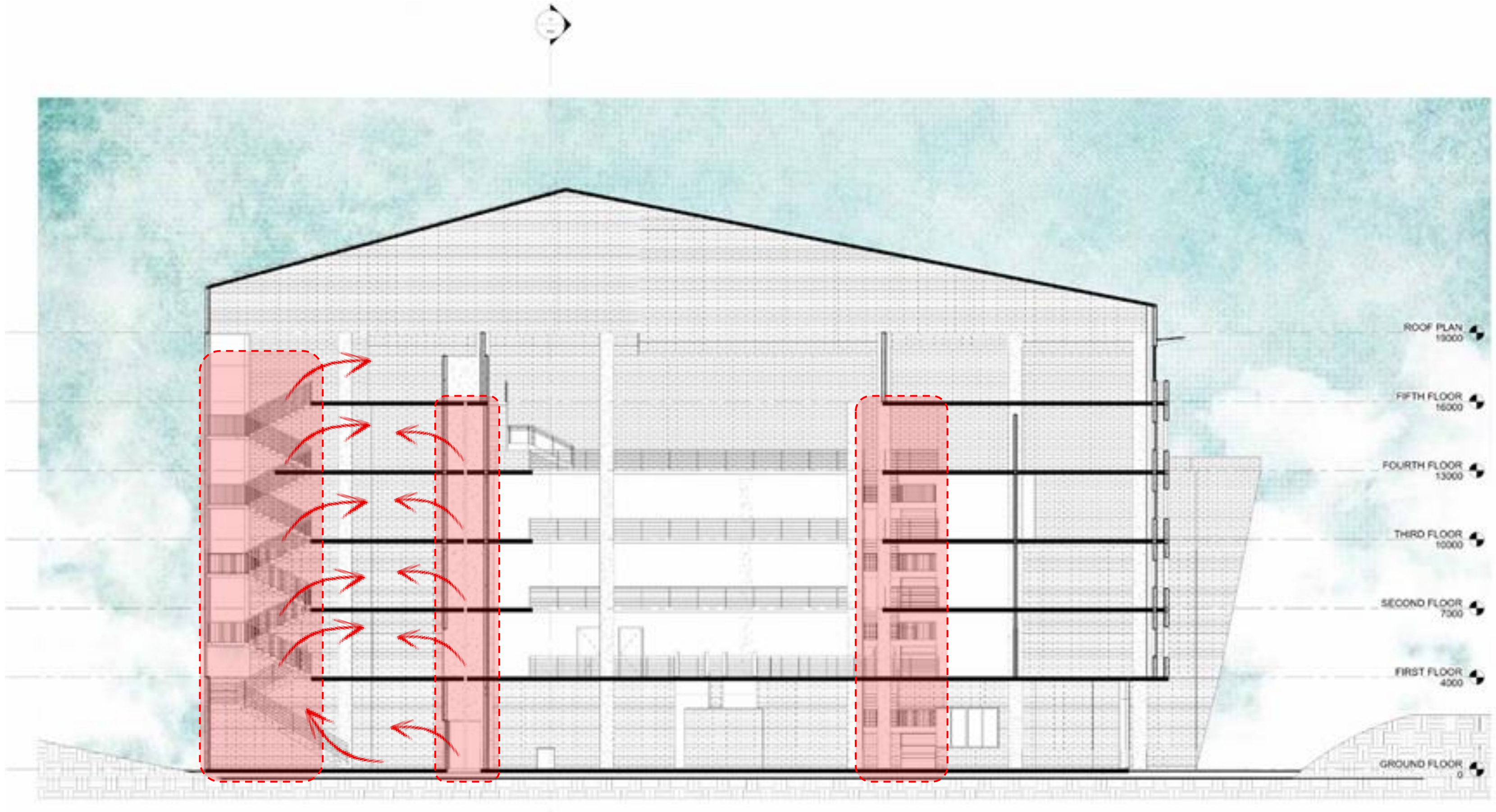
THIRD FLOOR PLAN

CIRCULATION ROUTES

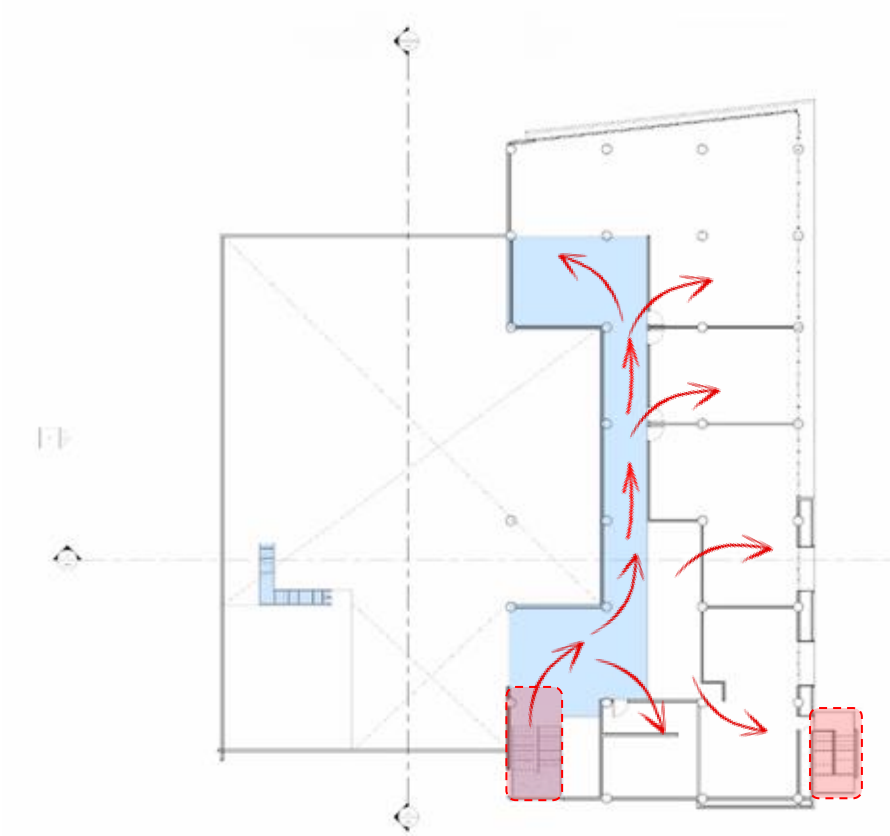
DESIGN ANALYSIS – HORIZONTAL AND VERTICAL CIRCULATION



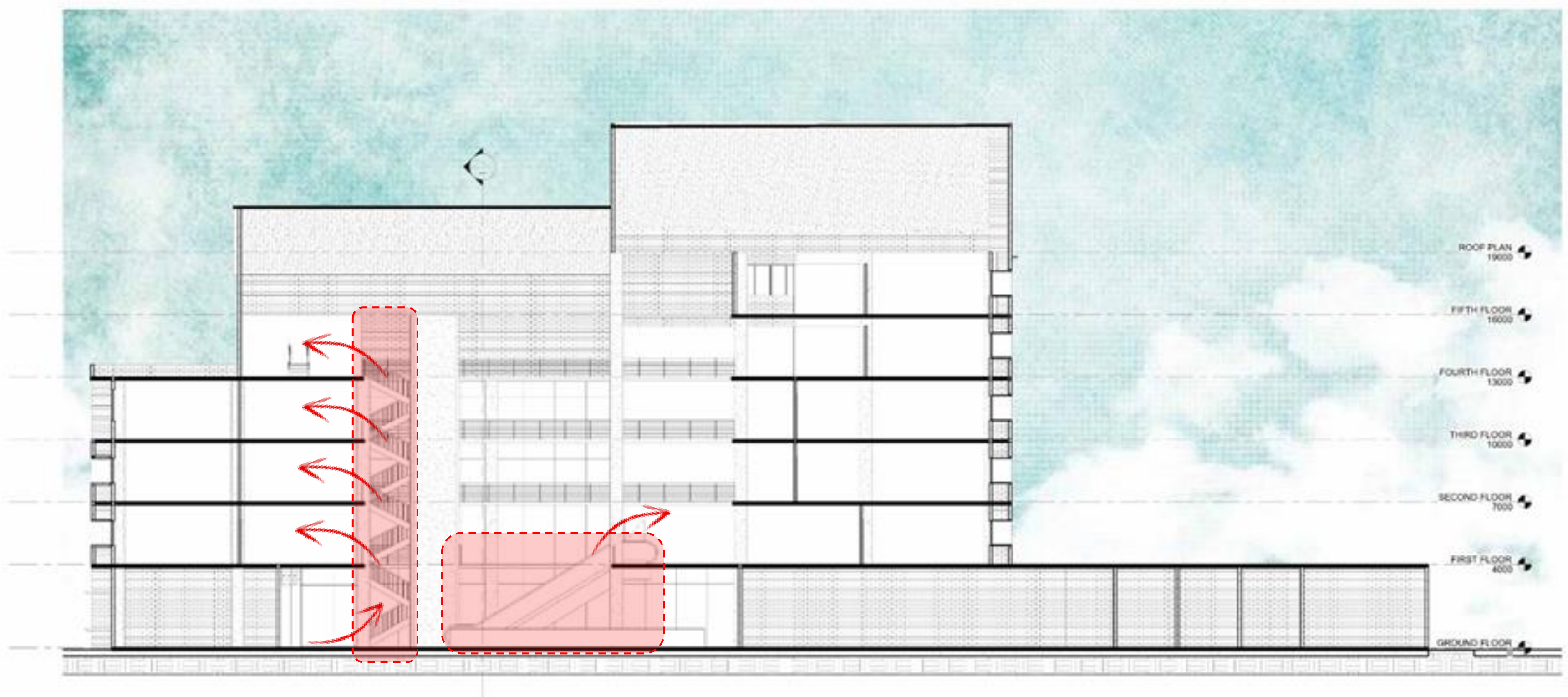
FOURTH FLOOR PLAN



Vertical circulation



FIFTH FLOOR PLAN



CIRCULATION ROUTES

BUILDING SERVICES – VENTILAT HVAC

Image of indoor seating area
Source: Happiness N. (2025)

The student centre integrates a Combination of passive and Active systems for thermal Comfort. Natural ventilation is Prioritized through the use of The central atrium, operable Windows, and tall volumes that Encourage the stack effect. Warm air rises and is expelled
Through clerestory openings, While cooler air is drawn in at Lower levels.

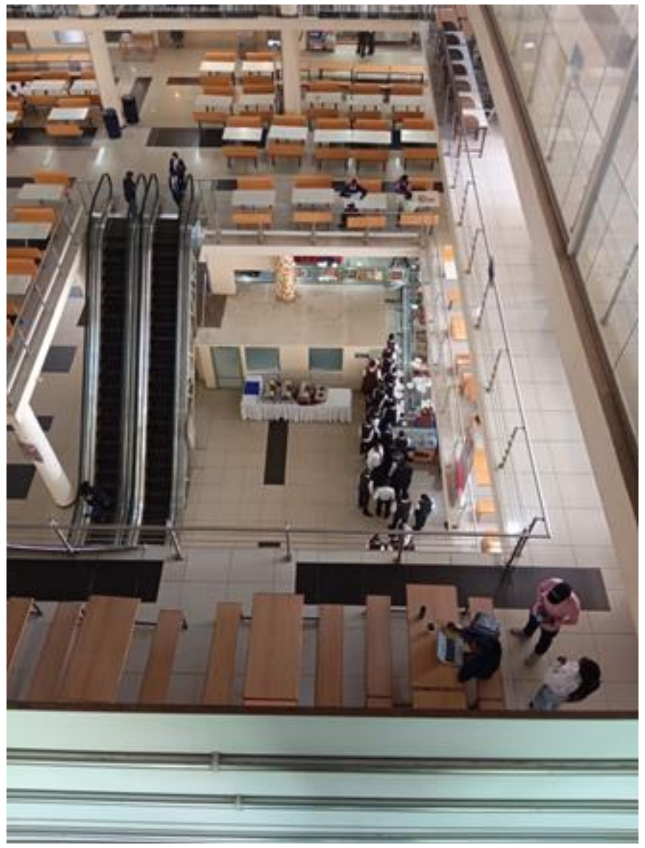


Image of air conditioner on exterior wall
Source: James K. (2025)

Passive shading devices include Overhangs, recessed windows, And the extended entrance Canopy. These reduce glare and Cooling loads while allowing Abundant natural light.

Mechanical air-conditioning is Applied selectively in high-load Spaces such as it labs, kitchens, And large halls.

EVAPORATIVE/ ADIABATIC COOLING WALL..

Water from a top tank flows Down the textured stone, cooling The it by conduction .The stone Becomes a heat sink that absorbs Latent heat from adjacent air. The cooled air is drawn into Circulation, lowering temperatures in the atrium.

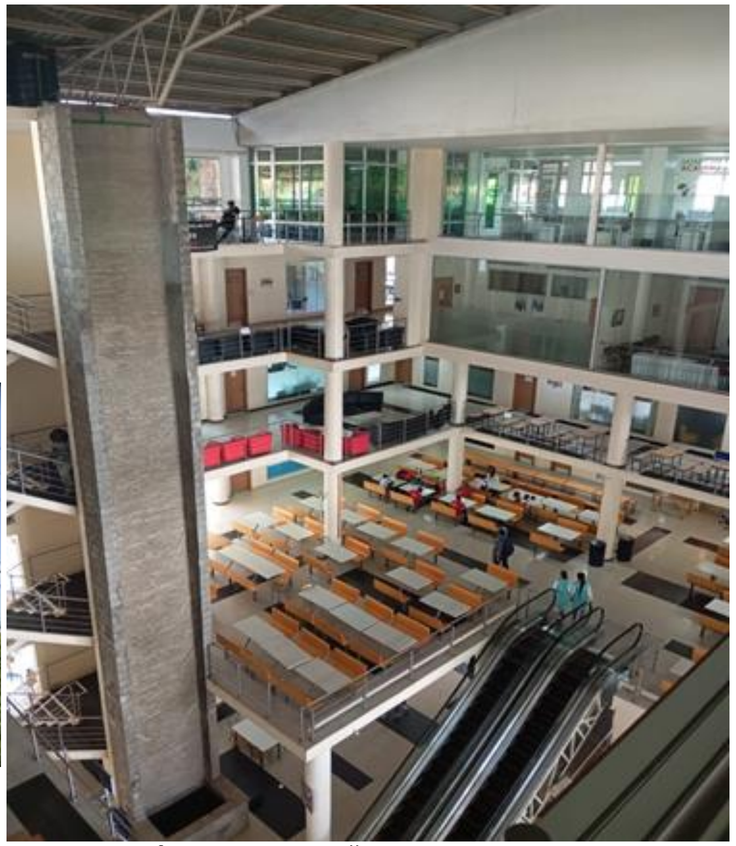


Image of evaporative wall
Source: James K. (2025)

ACOUSTICS

Image of indoor seating area
Source: Happiness N. (2025)

The atrium and cafeteria Createlively but acoustically Challenging spaces.

Suspended acoustic baffles (red & blue to match the University colours) — Modular absorptive clouds That break up the reverberant Volume of the cafeteria and Improve speech clarity.

Sealed door & window gaskets; Laminated glass in it labs to Limit structure-borne noise Are used.

Image of glass partition of Safaricom Academy
Source: Clara K. (2025)

FIRE SAFETY

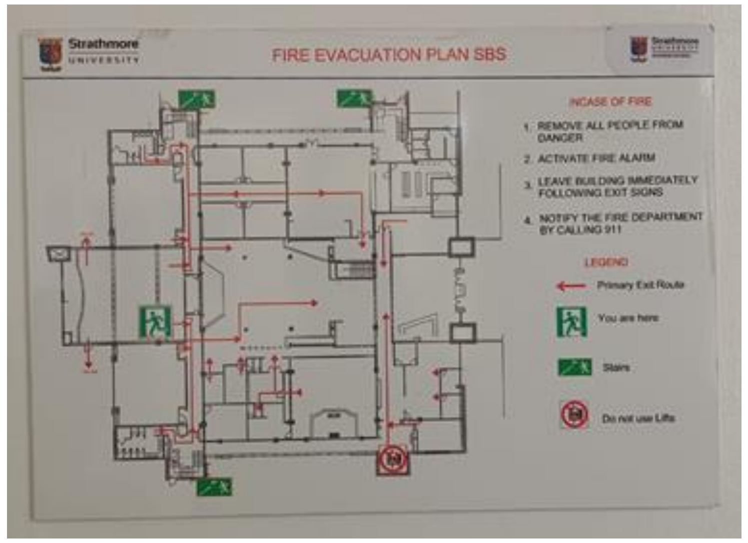
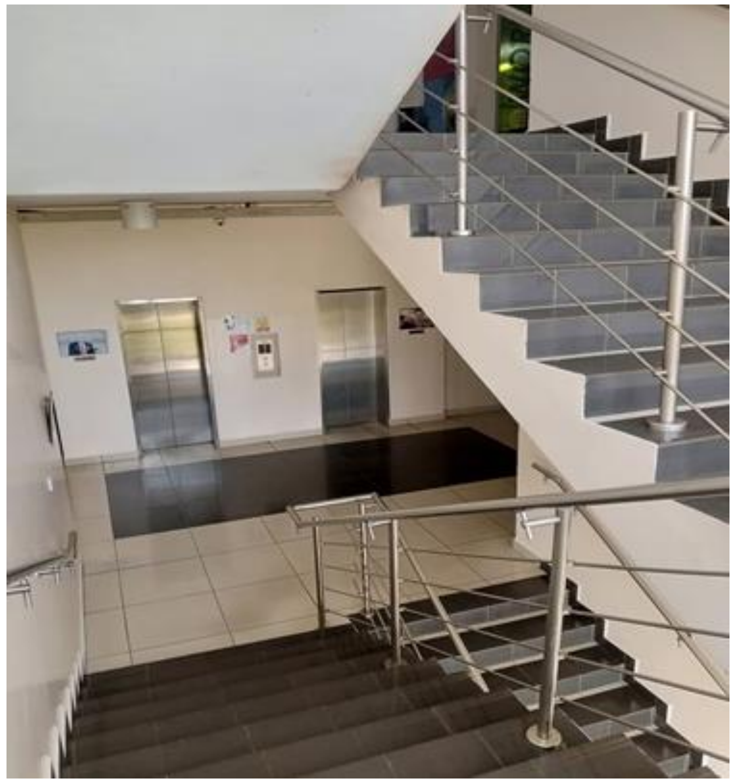


Image of fire evacuation plan
Source: Clara K. (2025)

FIRE SAFETY MEASURES ARE INTEGRATED THROUGHOUT THE STUDENT CENTRE. ON EVERY FLOOR THERE ARE MOUNTED FIRE EVACUATION PLANS WHICH ORIENT BUILDING USERS, SHOW PRIMARY/SECONDARY ESCAPE ROUTES, LOCATE LIFE-SAFETY EQUIPMENT, AND DIRECT EVERYONE TO THE EXTERNAL ASSEMBLY POINT



MULTIPLE PROTECTED STAIR CORES PROVIDE SAFE EGRESS,IN CASE OF EMERGENCY FIRE OUTBREAKS.

AN ADDRESSABLE FIRE DETECTION SYSTEM INCLUDES SMOKE AND HEAT DETECTORS, MANUAL CALL POINTS, AND VOICE-ENABLED ALARMS.

AN EXTERNAL STEEL ESCAPE STAIR ADDS TO FIRE SAFETY. EXIT SIGNAGE AND EMERGENCY LIGHTING ARE BACKED BY INDEPENDENT CIRCUITS, ENSURING VISIBILITY DURING POWER OUTAGES.

SUPPRESSION IS PROVIDED BY HOSE REELS AND SPRINKLERS WHICH ARE PLACED CLOSE TO THE VERTICAL CIRCULATION CORES,AS WELL AS IN HIGH-RISK AREAS SUCH AS KITCHENS AND IT ROOMS.

EXIT WIDTH PLANNING BY OCCUPANT LOAD; IMPLEMENTED ACROSS THE STUDENTS CENTRE.

BUILDING TECHNOLOGY – ASSEMBLY & MATERIAL SYSTEMS

CONSTRUCTION IS LARGELY CAST-IN-PLACE REINFORCED CONCRETE WITH CONCRETE BLOCK INFILL. STRUCTURAL BAYS ARE SIZED FOR LARGE SPANS (ENABLING OPEN COMMUNAL FLOORS).

THE ATRIUM CURTAIN WALL USES POINT-FIXED STAINLESS STEEL SPIDER FITTINGS (MULTI-ARM SPIDERS) BOLTED THROUGH TOUGHENED/LAMINATED GLASS. THIS DETAIL SIGNALS A STRUCTURAL GLAZING APPROACH (HIGH VISIBILITY, MINIMAL MULLIONS) AND REQUIRES CAREFUL DETAILING FOR GLASS EDGE LOADS, WEATHERING AT THE GLASS–FITTING INTERFACE, AND CORROSION PROTECTION OF BOLTS.

ENERGY-SAVING TECHNOLOGIES & DETAILING:

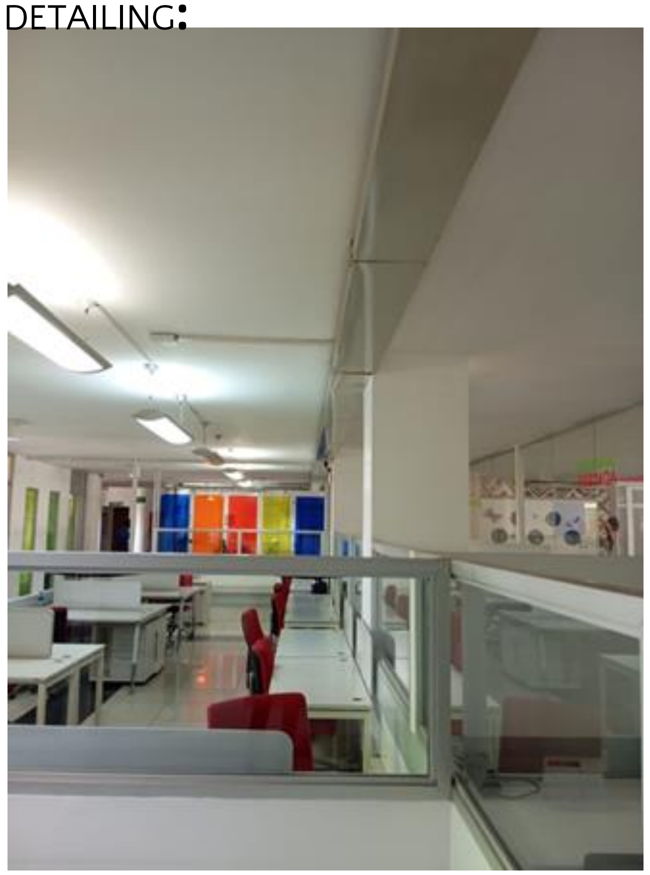


Image showing acoustic panels on the fourth floor
Source: Benson T. (2025)

HIGH-EFFICIENCY LED LIGHTING WITH OCCUPANCY/DAYLIGHT SENSORS AND AUTOMATED CONTROLS (THE STUDENT CENTRE USES ~67% AUTOMATED LIGHTING SYSTEMS, PER CAMPUS REPORTS)

METAL ROOF TRUSSES AND CORRUGATED SHEETING OVER SERVICE ZONE.

THE EXPOSED STEEL-TRUSS AND CORRUGATED METAL ROOF PROVIDES A LIGHTWEIGHT, FAST-TO-ERECT COVER BUT REQUIRES A DELIBERATE THERMAL AND ACOUSTIC STRATEGY. TO AVOID EXCESSIVE HEAT GAIN AND RAIN NOISE THE PROFILE MUST BE COMBINED WITH CONTINUOUS INSULATION (OR A VENTILATED CAVITY WITH VAPOUR CONTROL) AND AN ACOUSTIC LINING OR SUSPENDED ABSORPTIVE CEILING;

TECH PARTNERSHIPS & DIGITAL INFRASTRUCTURE

Image showing technological partnerships in Strathmore
Source: Benson T. (2025)

THE STUDENT CENTRE HOSTS AN INDUSTRY-ACADEMIC TECHNOLOGY ECOSYSTEM: CORPORATE PARTNERS (GOOGLE, INTEL, ORACLE, SAMSUNG, ERICSSON, IBM RESEARCH, SAFARICOM) SUPPORT ILAB AFRICA AND THE SAFARICOM ACADEMY THROUGH EQUIPMENT DONATIONS, SOFTWARE CREDITS, TECHNIC MENTORSHIP AND RESEARCH COLLABORATION.

THESE PARTNERSHIPS DIRECTLY SHAPE THE BUILDING TECHNOLOGY REQUIREMENTS — HIGHER-CAPACITY NETWORK BACKBONES, DEDICATED IDF ROOMS, UPS-BACKED POWER, COOLING FOR RACK EQUIPMENT, AND MANAGED AV/LEARNING SYSTEMS — AS WELL AS GOVERNANCE FOR MAINTENANCE, TRAINING AND CYBERSECURITY.

Image showing computer lab on the fourth floor
Source: Benson T. (2025)

THE LAB USES INTEGRATED BENCH TROUGHS AND CONCEALED CEILING SUPPORT RAILS TO PROVIDE POWER, DATA, AND AV SERVICES TO EACH WORKSTATION. UPS PROTECTION, DEDICATED LAB COOLING AND PROPERLY SIZED CABLE TRAYS ARE IMPLEMENTED TO ENSURE RELIABILITY AND FUTURE CAPACITY.

THE FAÇADE IS DEFINED BY THE INTERPLAY OF SOLID STONE MASSES [ASHLAR STONE] AND VOIDS CREATED BY RIBBON WINDOWS AND CURTAIN WALL ZONES.
.

Image showing stone walled façade of the students' centre
Source: Benson T. (2025)

PRIMARY STRUCTURAL/CLADDING MATERIALS: THE MASS OF THE BUILDING IS CARRIED ON REINFORCED CONCRETE SLABS AND COLUMNS, WITH EXTERIOR WALLS CLAD IN STONE VENEER. THE STONE USED IS ASHLAR (REGULAR BLOCK SHAPE) LAID WITH TIGHT JOINTS, GIVING A TEXTURED, NON-REFLECTIVE SURFACE.

FENESTRATION ARTICULATION: THE PATTERN OF SOLID WALL VERSUS GLASS IS CAREFULLY BALANCED. NARROW HORIZONTAL RIBBON WINDOWS ALTERNATE WITH SOLID STONE PIERS, PRODUCING A STRONG RHYTHM. FLOOR SLABS PROJECT SLIGHTLY, CREATING SHALLOW LEDGES OR REVEAL AT EACH WINDOW HEAD, WHICH ACCENTUATES THE HORIZONTAL "BANDING

ELEVATION & FACADE DESIGN

MAIN ENTRANCE – STONE FRAME & CURTAIN WALL

Image showing building façade
Source:Ben Carson K.(2025)

THE COMBINED USE OF STONE, GLASS, AND EXPOSED CONCRETE CONVEYS A BALANCE OF PERMANENCE AND TRANSPARENCY, ALIGNING ENVIRONMENTAL PERFORMANCE WITH ARCHITECTURAL EXPRESSION

SOLID–VOID COMPOSITION

STRONG SLAB BANDING EXPRESSES FLOORS; STONE PIERS ANCHOR CORNERS/CORES. RECESSED PUNCHED WINDOWS CREATE DEPTH/SHADOW; CONTINUOUS RIBBONS AT SELECT LEVELS.

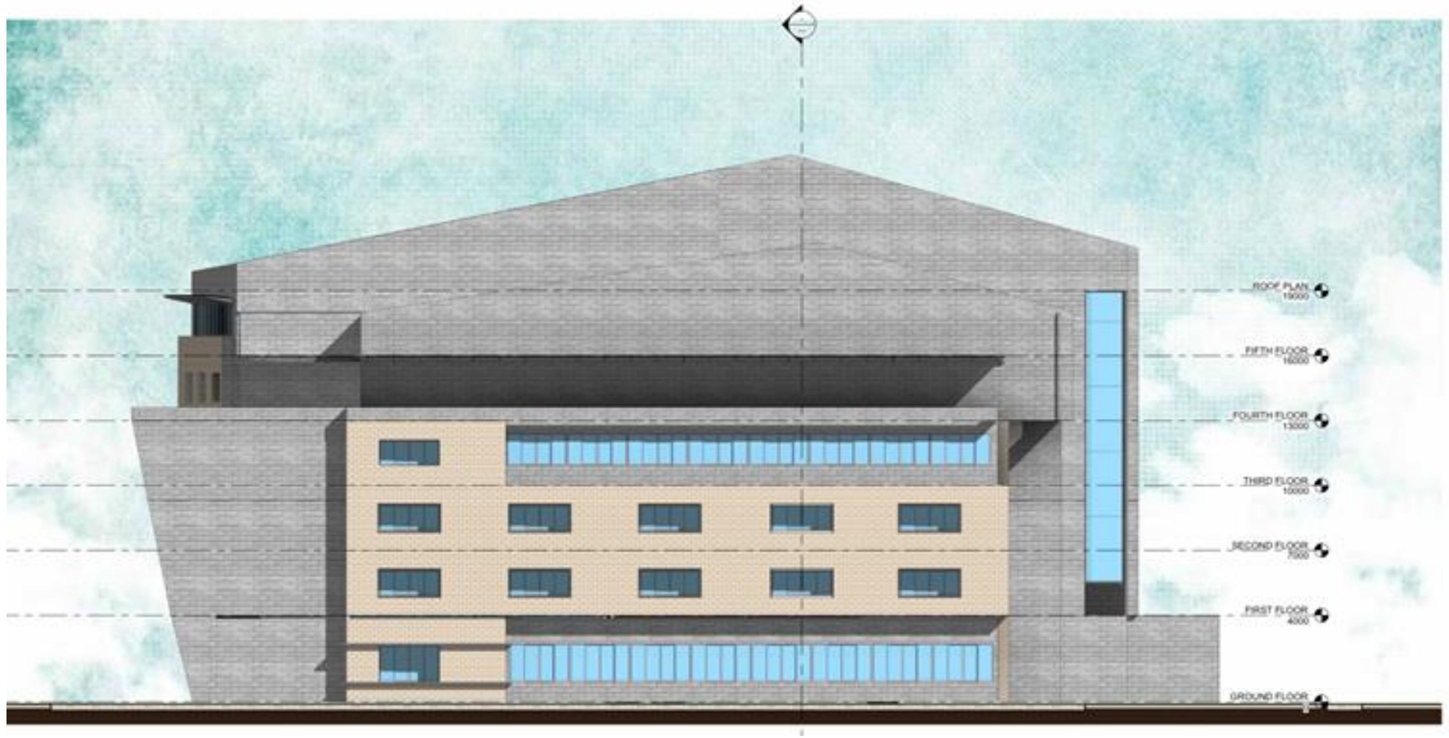
Image showing building façade
Source:Ben Carson K.(2025)

THE GLAZED STAIR TOWER (POINT-FIXED SYSTEM) AND THE CONTINUOUS ATRIUM EXPRESS PUBLIC TRANSPARENCY, WHILE SIDE WINGS ARE PREDOMINANTLY STONE WITH RIBBON WINDOWS – SHOWING A CLEAR DESIGN LANGUAGE

Image showing sun shading techniques
Source:Ben Carson K.(2025)

Image showing building façade
Source:Ben Carson K.(2025)

FRONT ELEVATION.

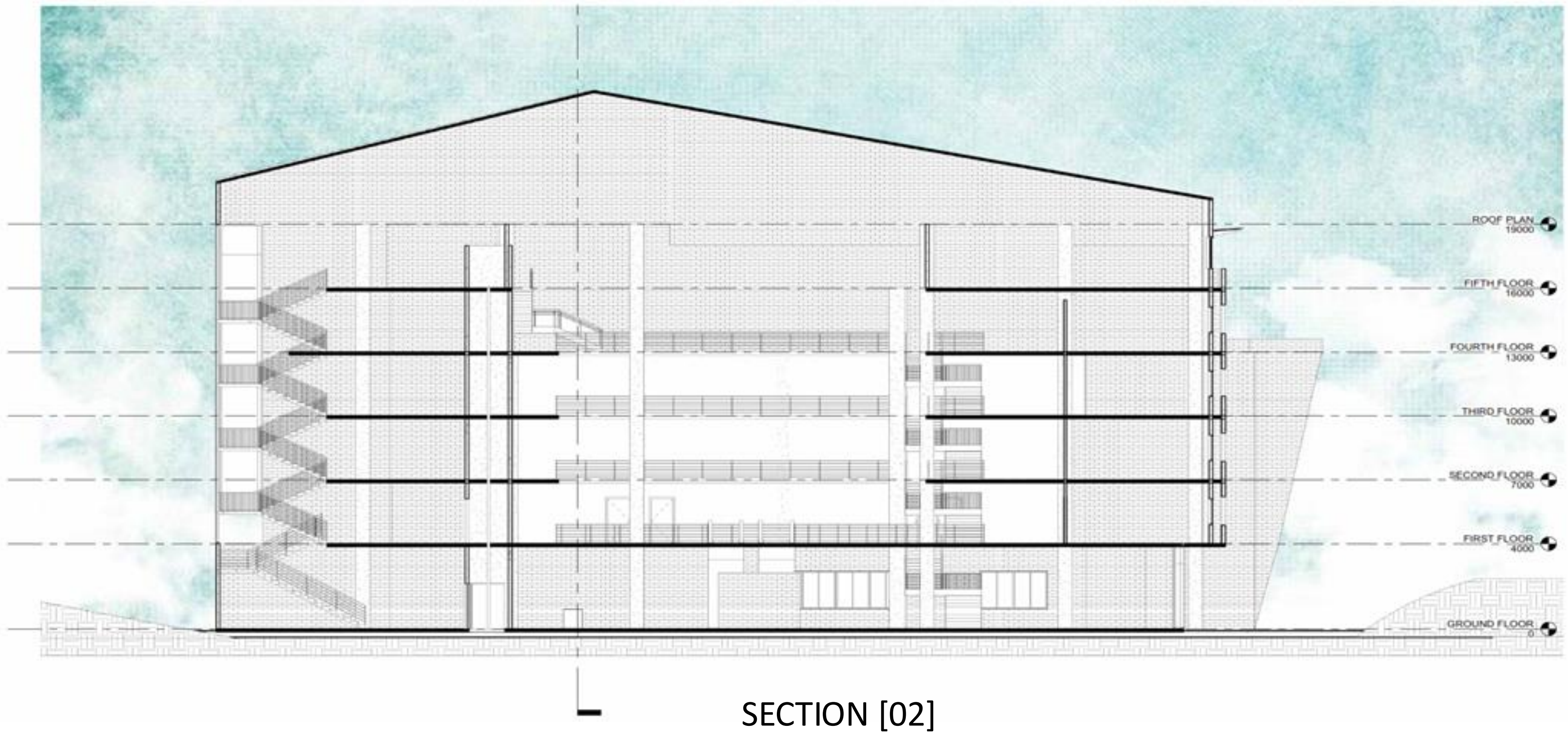


SIDE [2] ELEVATION

SIDE [1] ELEVATION.

REAR ELEVATION.

SECTION [01] SHOWING CROSS VENTILATION ACROSS THE ATRIUM.



SECTION [02]

MATERIALS PALETTE & CLADDING SCHEDULE (EXTERIOR)

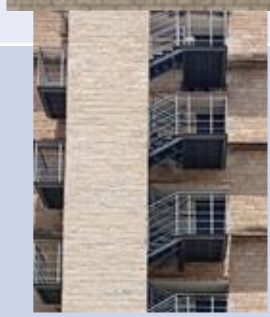
SYSTEM / ELEMENT	PRIMARY MATERIAL	FINISH	PERFORMANCE NOTES	PHOTO
WALL – STONE VENEER	LOCAL QUARRY STONE (ASHLAR COURSES)	EXPOSED, TOOLED JOINTS	HIGH DURABILITY & THERMAL MASS; PERIODIC REPOINTING	
WINDOWS – RIBBON & PUNCHED	ALUMINUM FRAMES + IGU GLAZING	ANODIZED; LOW-E COATING	SHADING BY RECESS/OVERHANG; TRICKLE VENTS POSSIBLE	
CURTAIN WALL – STAIR/ATRIUM	ALUMINUM STICK SYSTEM + LAMINATED IGU	CLEAR/SOLAR-SELECTIVE	DAYLIGHT + VISIBILITY; STRUCTURAL SILICONE AT JOINTS	
OVERHANGS & CANOPIES	RC SLAB EDGES CANOPY	FAIR-FACED / PAINT TO SPEC	FIXED SHADING; DRIP EDGES FOR RUNOFF	
EXTERIOR STAIRS/RAILS	GALVANIZED STEEL	POLYURETHANE PAINT	FIRE EGRESS; MESH TREADS FOR DRAINAGE	
PARAPET/ROOF EDGE	RC UPSTAND + METAL COPING	PAINTED/METAL FINISH	PROTECTS FAÇADE; ALLOWS PV MOUNTS	

PHOTO PLATE – EXISTING FAÇADES.

REAR FACADE

EAST-FACING FAÇADE

WEST-FACING FAÇADE

FRONT FAÇADE

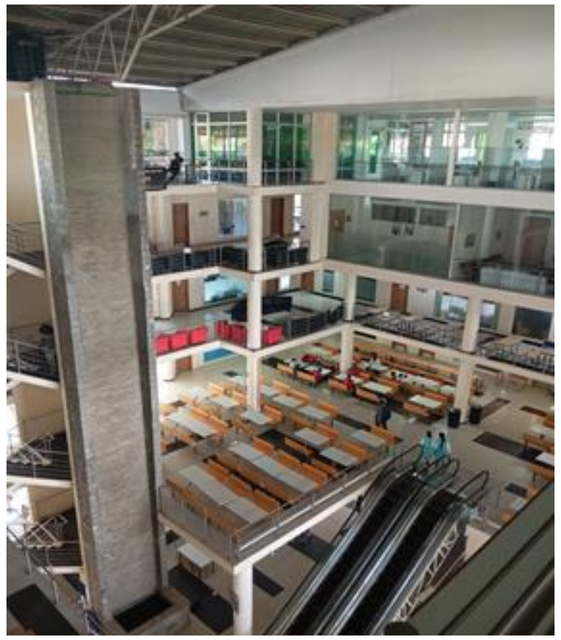
FORM AND MASSING.

Shape:
The massing is largely rectilinear, with interlocking blocks organized along a grid structural system (C–K horizontally, 2–8 vertically). Terraces, voids(Atrium)break the rigid geometry, giving rhythm to the overall mass.

Proportion:
Long spans (6,000–30,000 mm) are visually countered by vertical columns.
The building's 5 story level aligns With the campus's skyline with Low rise buildings occupying the Landscape. This is due to the close proximity to Wilson airport.

Scale & Size:
Medium scale, rising five level (Ground to Roof)
The proportions balance between large-span interiors (canteens, courts) and smaller ancillary spaces (offices, stores).

Arrangement & Orientation:
The building is north–south oriented, with a glass façade to maximize daylighting and cross-ventilation. Circulation (escalators, lifts, staircase) are centrally placed for accessibility.



Source: Arch Felix Lati

Source: Arch Felix Lati

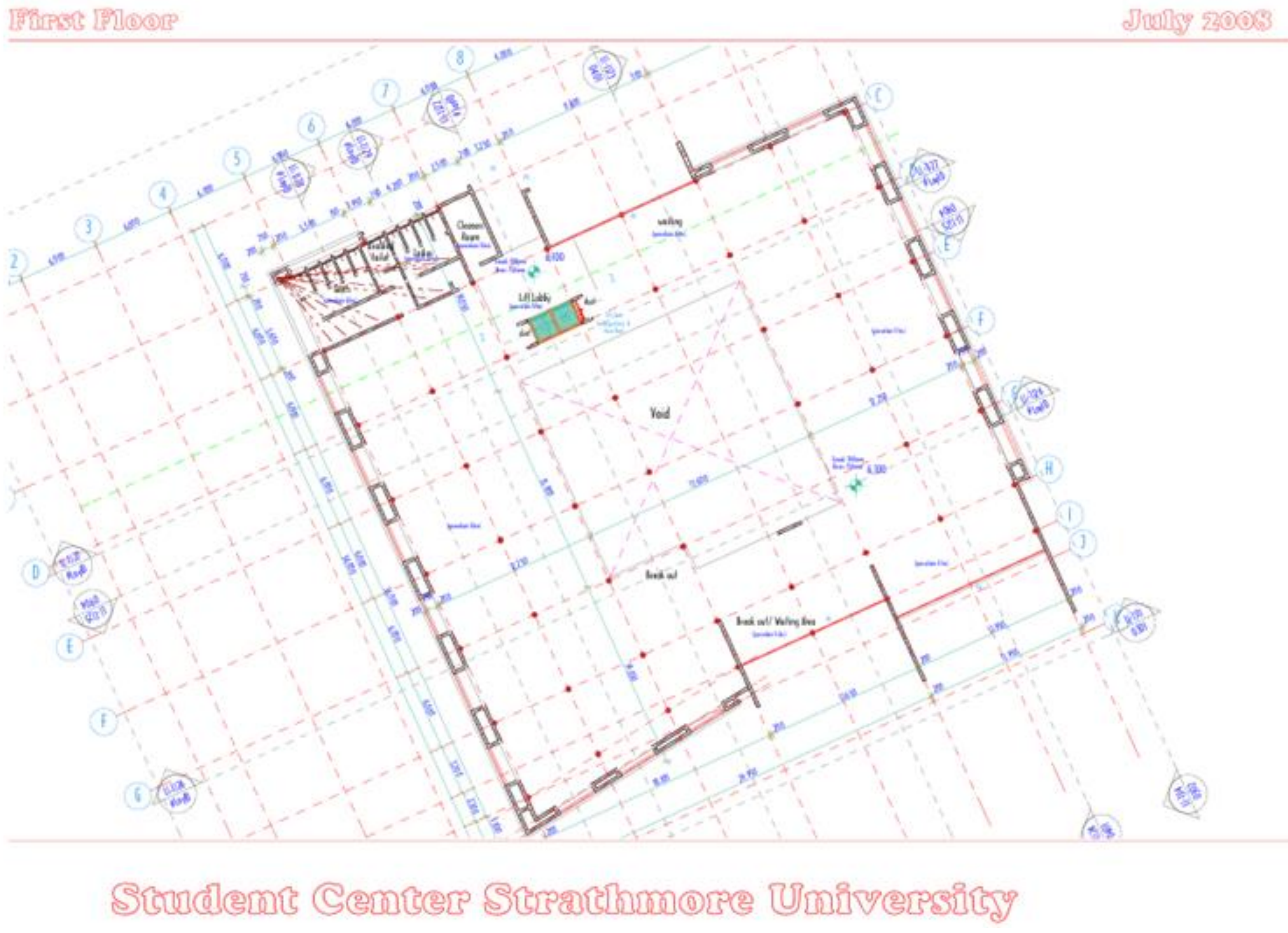
Visual Inertia:
The form is dynamic rather than static: voids, terraces, and projecting canopies soften the block-like mass and create visual lightness.

Solids & Voids:
Solid cores(service blocks)contrast with large glazed voids, terraces and outdoor seating areas.
These breaks in mass provide visual relief and social gathering points.

Surface Treatment (Colour & Texture):
Walls: Neutral tones (cream/off-white) for institutional calmness.
Floors: Porcelain tiles (interior).
Texture: Smooth plastered walls with intermittent rough finishes for articulation.

Exterior Walls: Masonry stone yellow And grey stone

Glazing: tempered glass for facades.



Source: Arch Felix Lati

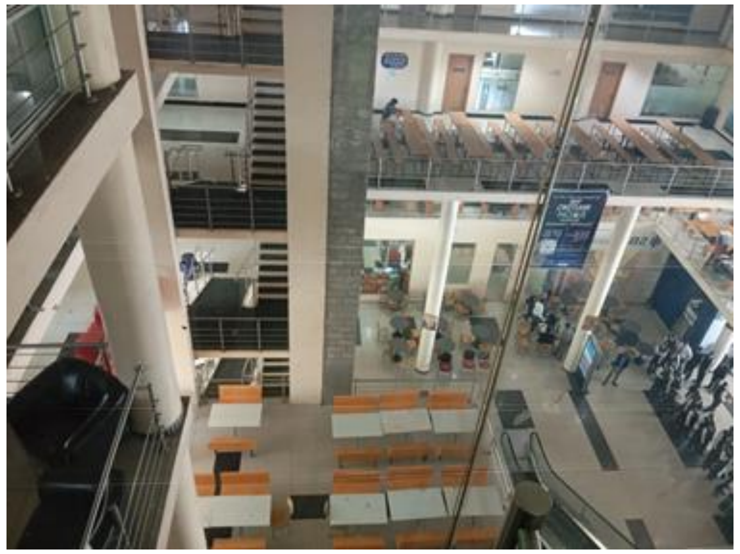
Source: Arch Felix Lati

STRUCTURAL ORDER.

Structural Materials:

- Concrete: Columns, beams, slabs.
- Steel: Roof trusses, pergolas
- Stainless steel: staircase railing
- Glazing & Aluminum frames: In façades for transparency.
- Masonry stone: yellow and grey Stone.

I.Concrete: Columns , beams and slabs



II.Steel trusses and parasols.

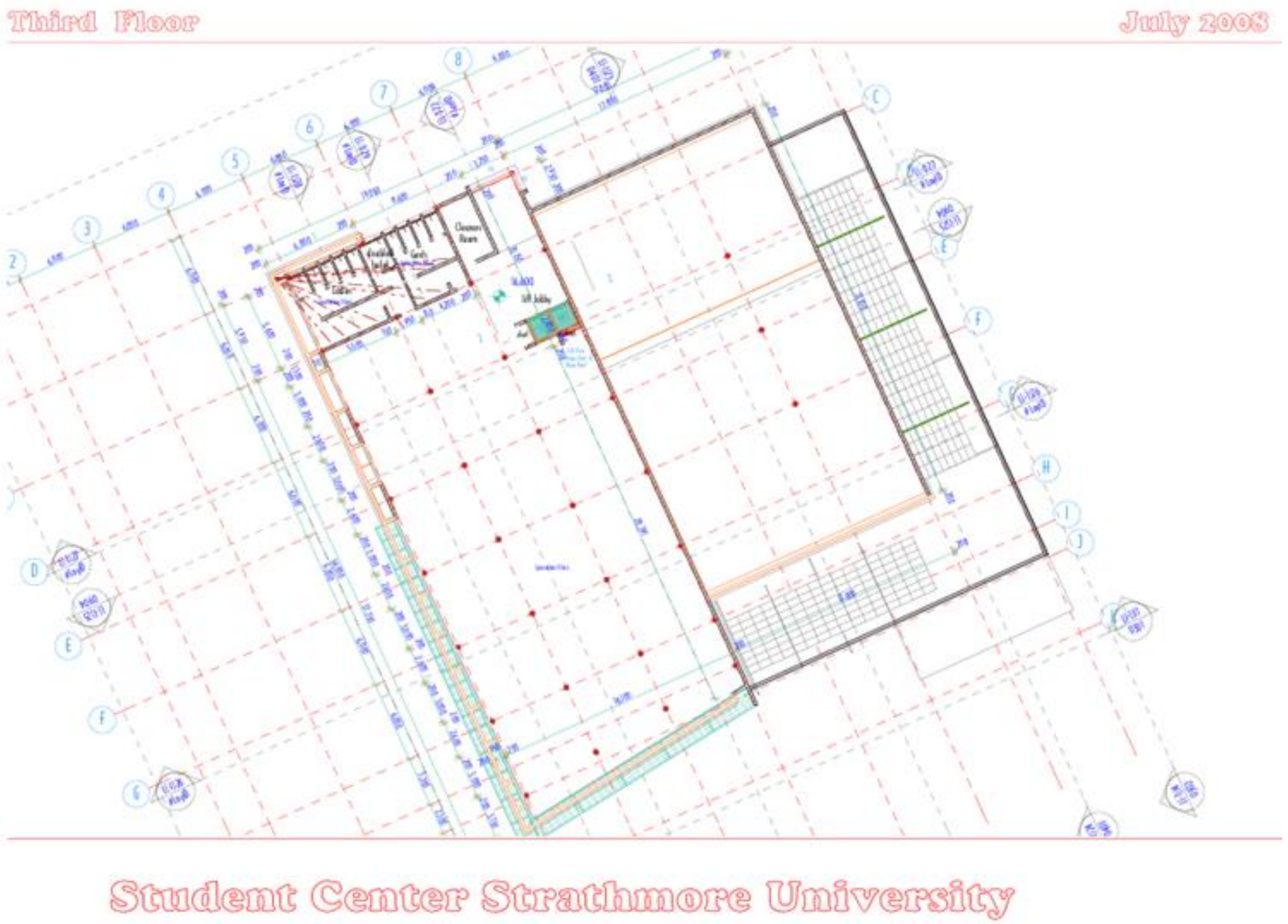
III.Tempered glass fixed with aluminium frames.

IV.Masonry stone:Yellow and grey Stone.

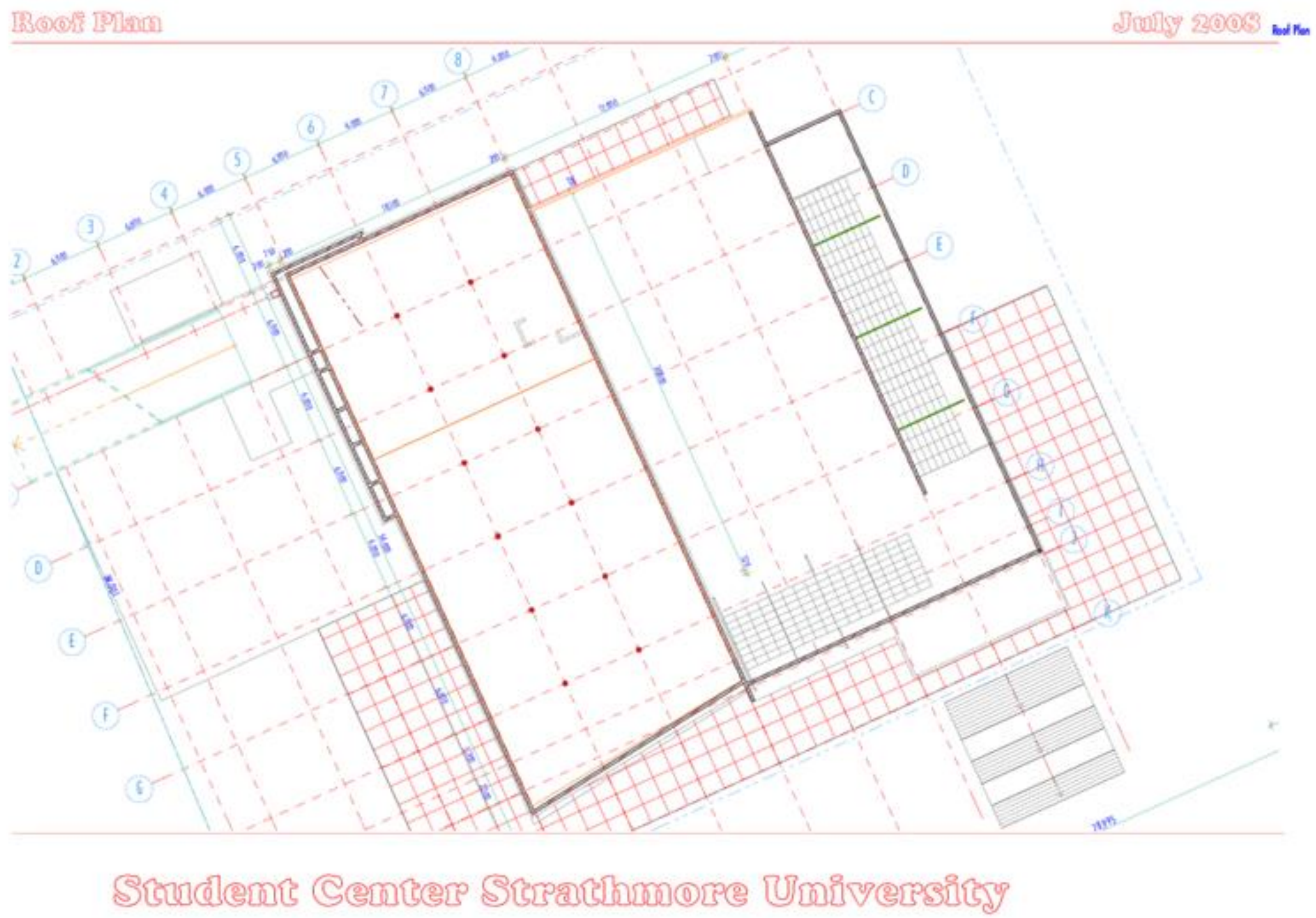
Framed Structures:
Grid layout (6,000 mm modules) ensures clarity in beam and column placement.

Post and Lintel System:
Clearly evident through concrete columns(posts) and beams(lintels) forming the basic load-bearing logic.

Tectonics:
repetitive verticals (columns) and horizontal beams/slabs. Terraces and voids reveal how structure defines space.



Source: Arch Felix Lati



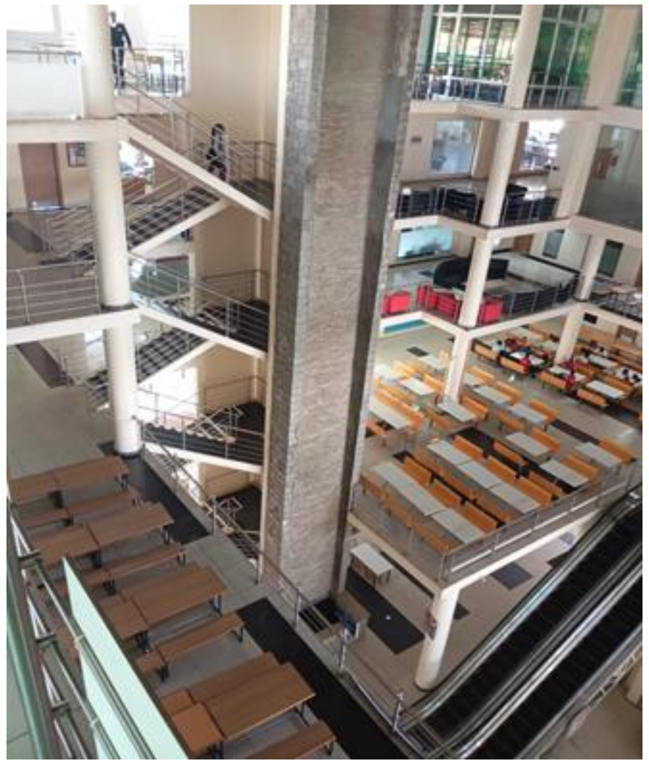
Source: Arch Felix Lati

INTERIOR DESIGN.

Colours & Hues:

- Walls: Light neutrals(white, cream)for brightness.
- Accents: Bold secondary Colours in furniture with blue, red and yellow as dominant colors for Strathmore and signage for vibrancy.
- Ceilings: White for reflectivity.

I. Bold secondary colors in furniture



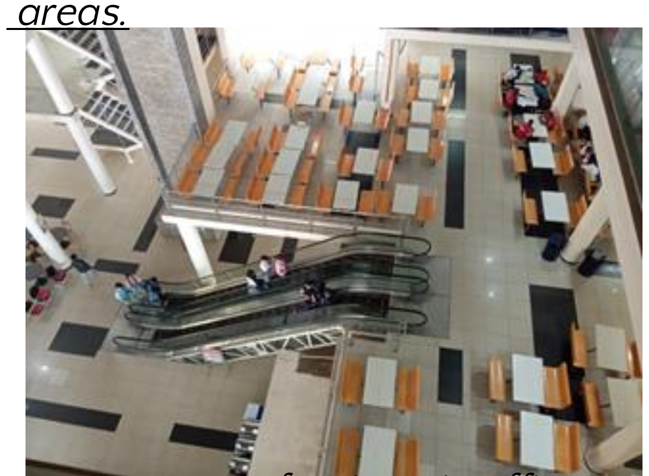
II.Walls white and ceilings white For reflectivity.

Furniture:

- Flexible seating (movable chairs/ tables) for food courts.
- Built-in benches in breakout/ waiting areas.
- Ergonomic furniture in offices and lounges.

I. Movable chairs/tables for food Courts.

II.Built in benches in breakout areas.



III.Ergonomic furniture in offices and special rooms.

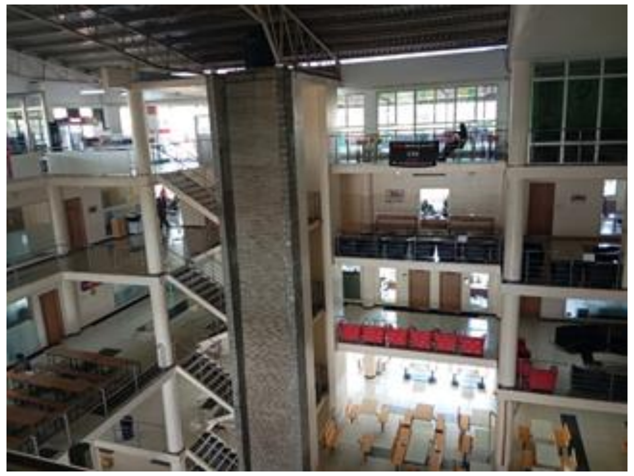
Safaricom Office space

Volumes & Levels:

- Double-height food courts.
- Split levels at terraces and break-out spaces create dynamism.
- Vertical connections (escalators, Lifts and staircases) provide fluid transitions.

Escalator.
Split level at break out spaces

Staircase.
Split level at break out space



Lifts.

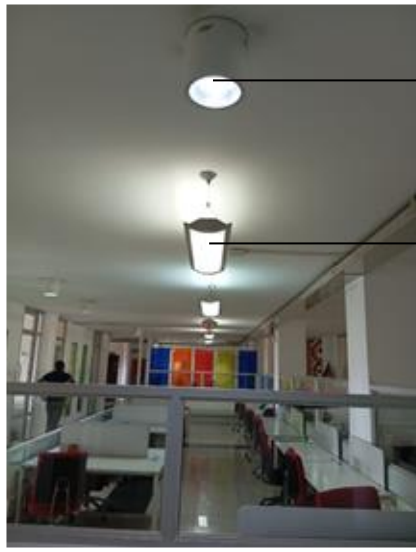
Lighting & Ambience:

- Natural lighting through the glass façade and strategically placed fenestrations.
- Artificial lighting: surface Mounted and pendant LED linear light.
- Ambience: Bright, open, and energetic — matching student activity.

I.Natural lighting.

Curtain wall Tempered Glass facade

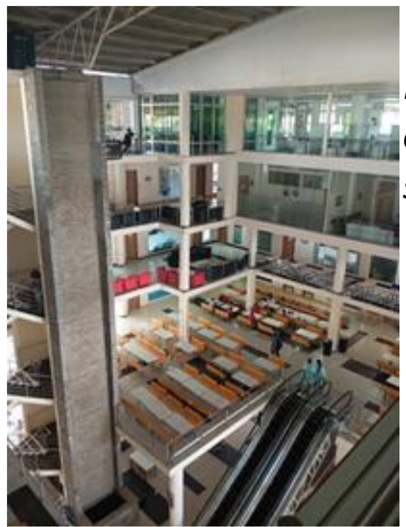
II.Artificial lighting.



Surface Mounted lighting

Pendant LED Linear light.

III.Ambience



Bright, open and energetic space

Materials:

- Floors: Porcelain tiles.
- Walls: gypsum board
- Ceilings: Suspended acoustic boards.

Floors: Porcelain tiles.

Porcelain tiles

Walls: Gypsum board

Gypsum board

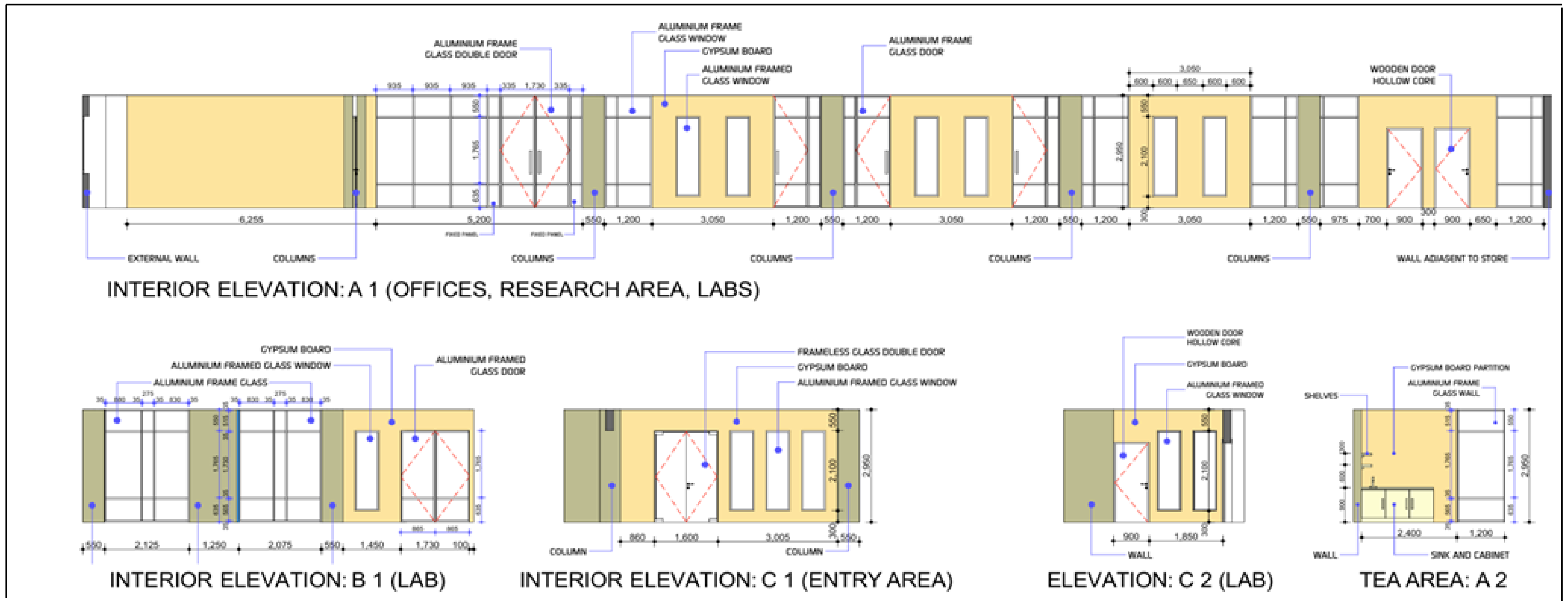
Ceiling (ground floor) Suspended acoustic panels.

Acoustic panels

4TH FLOOR

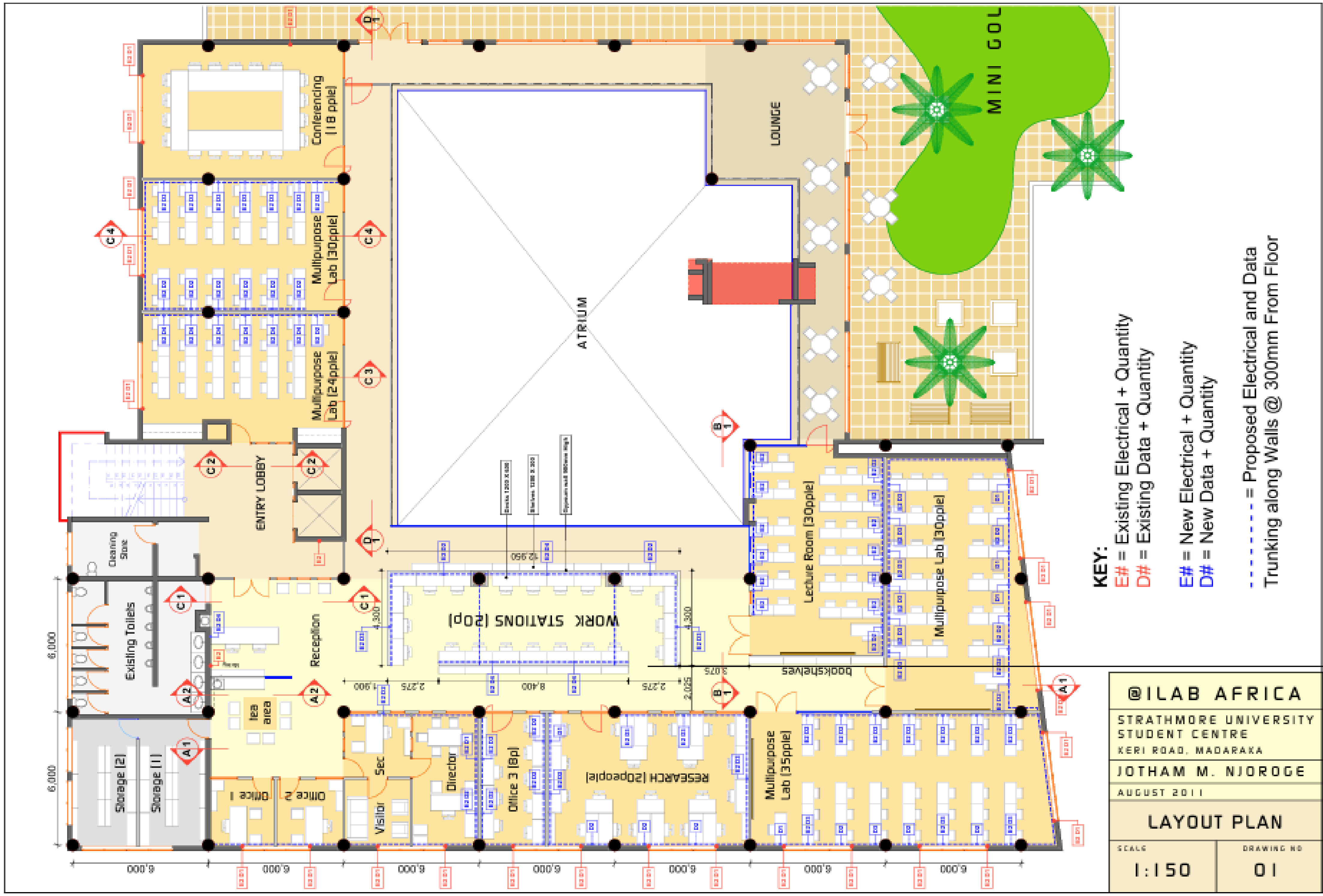
Source: Dr Jotham Njoroge

INTERIOR ELEVATIONS

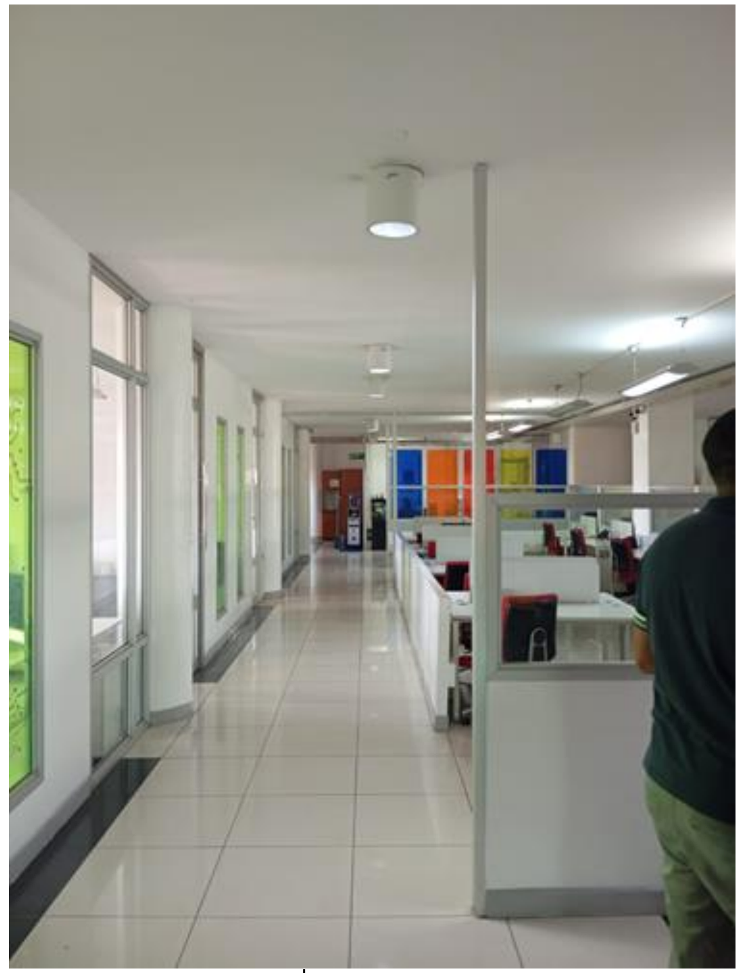


Source: Dr Jotham Njoroge

4TH FLOOR PLAN

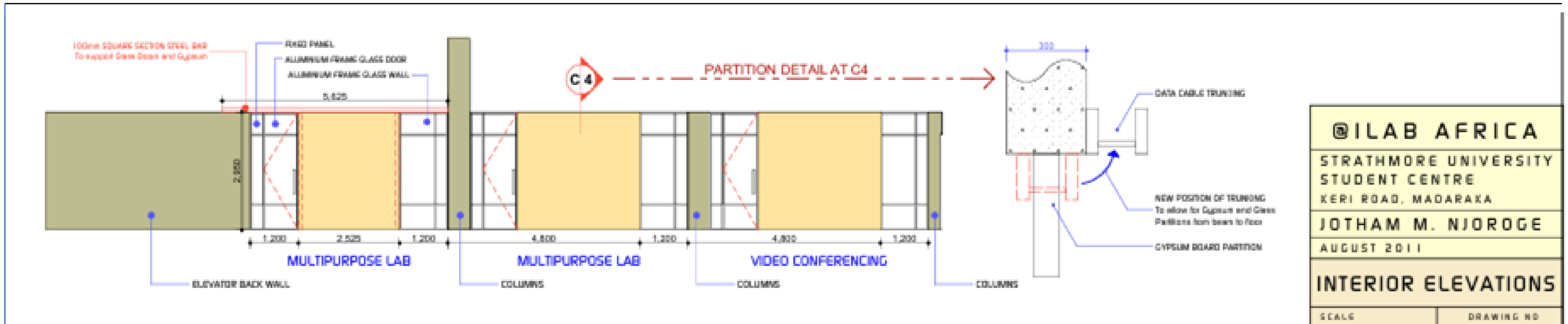


3D PERSPECTIVE



Source:Dr Jotham Njoroge

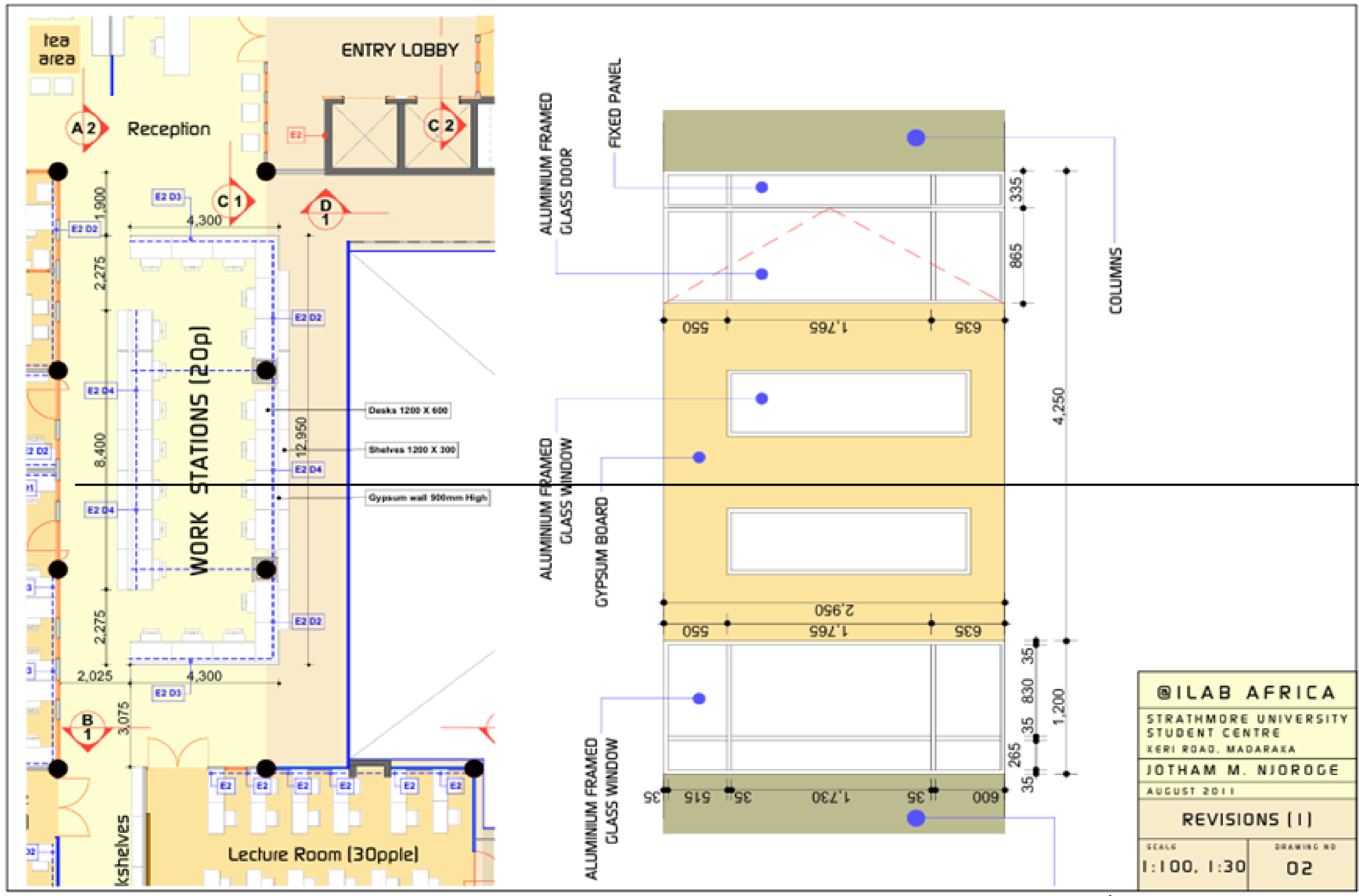
INTERIOR ELEVATION



INTERIOR ELEVATION: D 1 (LABS, VIDEO CONFERENCING)

Source:Dr Jotham

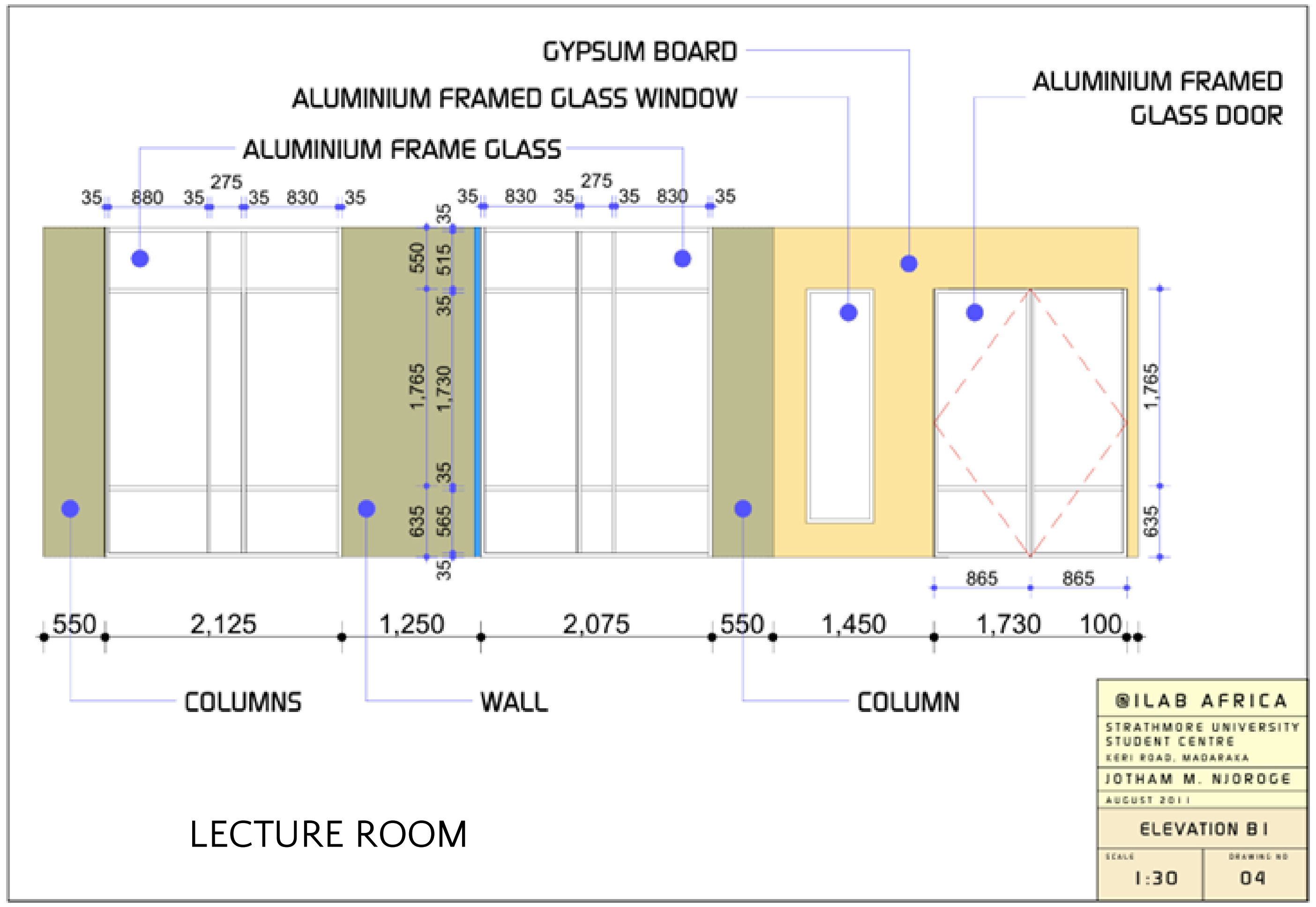
PART OF THE 4TH FLOOR



Source:Dr Jotham Njoroge

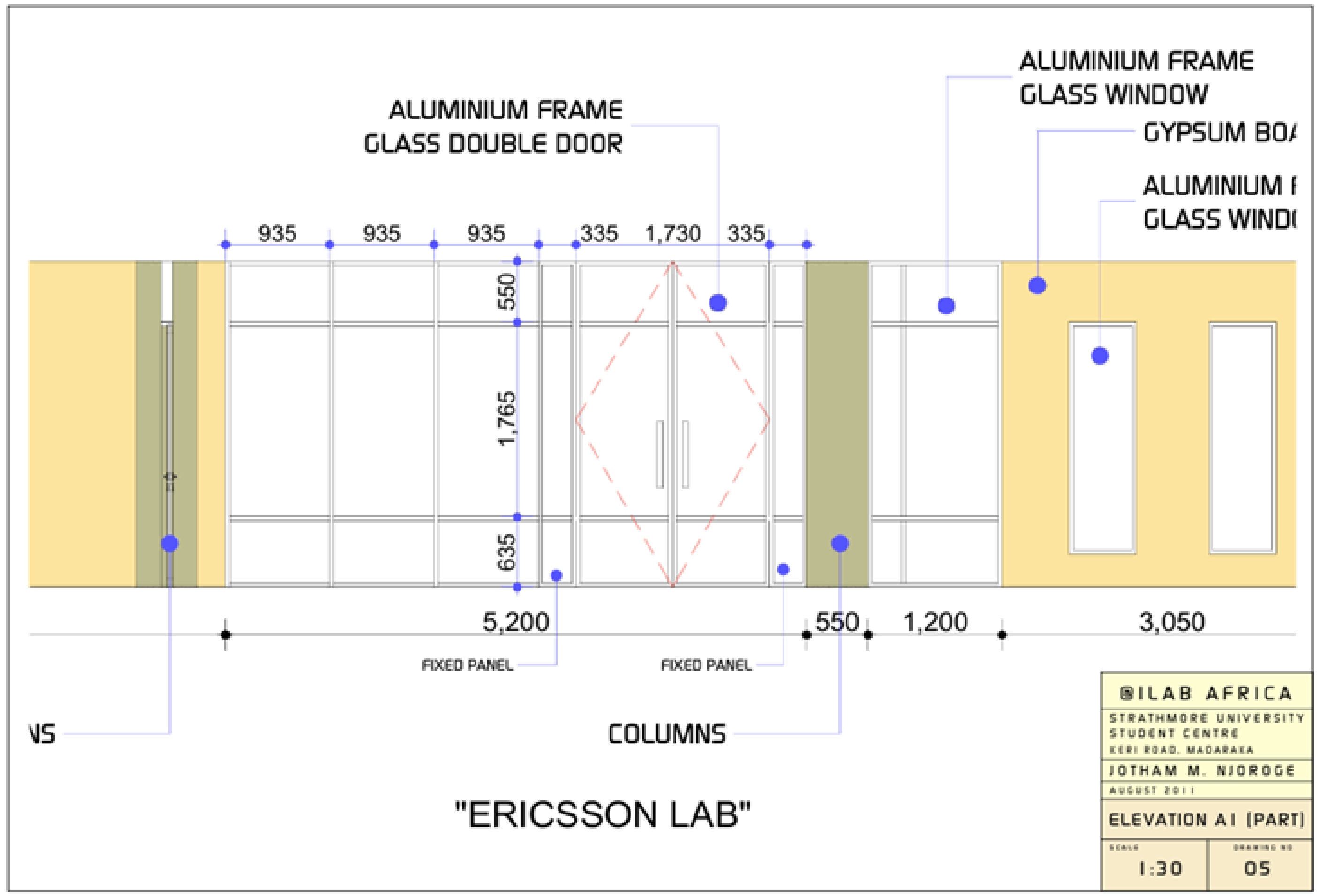
ERICSSON LAB

INTERIOR ELEVATION



Source:Dr Jotham Njoroge

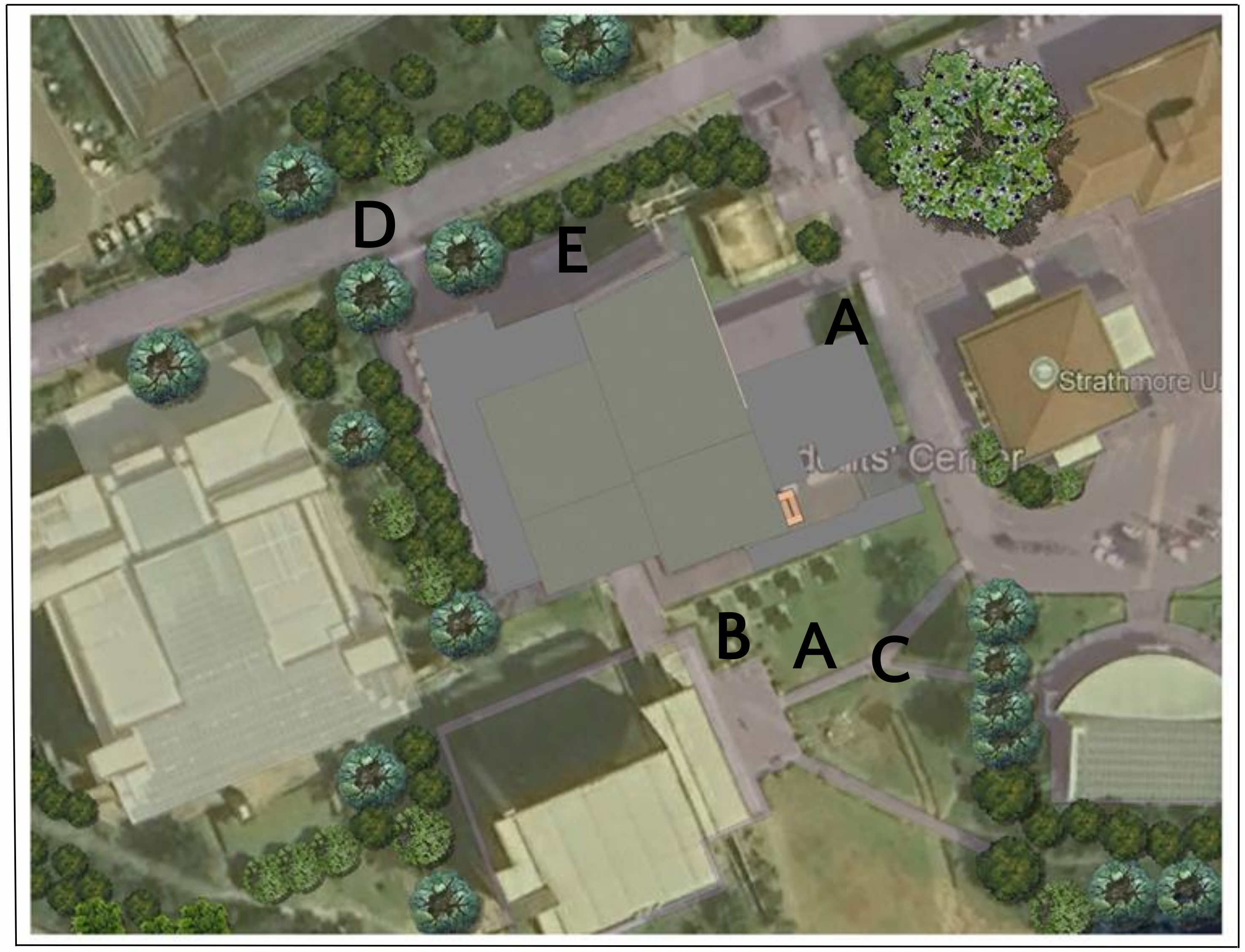
INTERIOR ELEVATION



Source:Dr Jotham Njoroge

LANDSCAPING

SITE PLAN



Greenery: A
Soft landscaping with lawn patches and potted plants soften the hard edges of the structure.

Boulevard D
a wide, landscaped street, usually designed for pedestrian comfort, circulation, and aesthetics.
wider than a normal path
Tree-lined edges or planted strips.
The boulevard-like paths provide clear, direct links from entrances and parking areas into the Student Centre, making navigation intuitive.

E

The level of the main access road is higher compared to the ground floor level and hence the slope.

A

Greenery:
Soft landscaping with lawn Patches soften the hard edges of the structure.

Open Spaces: B
Plazas and terraces act as outdoor extensions of indoor social spaces.

Parasols.
Lightweight roof coverings in terraces provide shaded outdoor gathering areas

Pathways. C
Direct pedestrian routes connect the Student Centre with surrounding campus nodes.
Pavement is tiled with durable stone.
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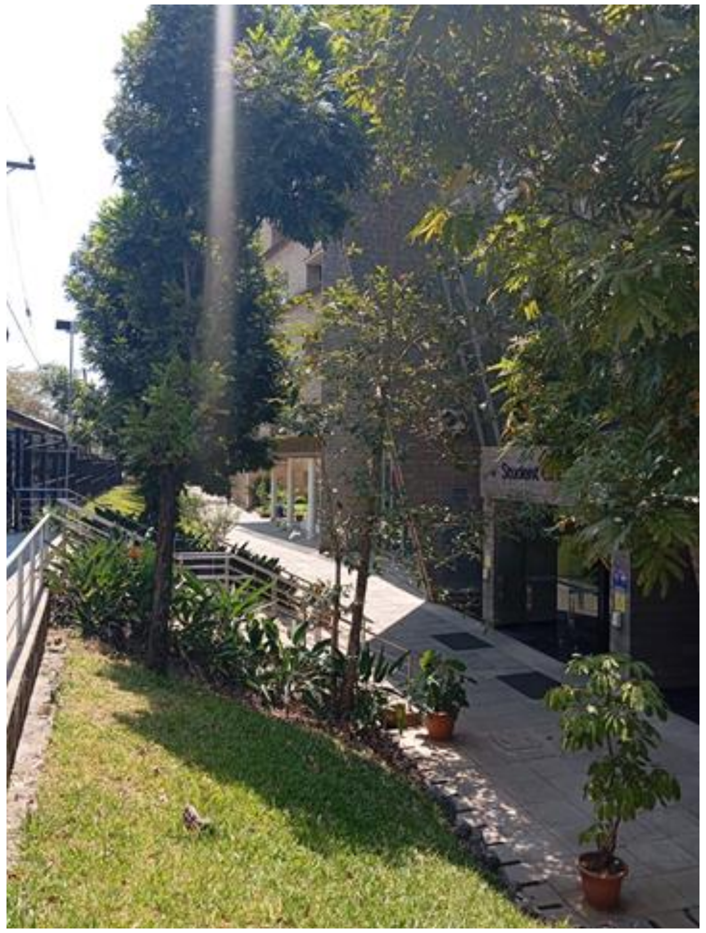

SUSTAINABILITY AND INNOVATION
-ORIENTATION, SUN SHADING & THERMAL MASS
THE BUILDING IS ORIENTED ALONG THE N-S AXIS, MINIMIZED SOLAR HEAT GAIN WHILE MAXIMIZING DAYLIGHT. ON THE WESTERN FACADE THE WINDOWS ARE RECESSED AND WALLS HAVE A HIGHER THERMAL MASS.
-DAYLIGHTING
TENSILE GLASS ROOFS, AND CURTAIN WALLS ENSURE ABUNDANT DAYLIGHT CUTTING DOWN ON ARTIFICIAL LIGHTING NEEDS

A photo showing glass curtain wall.
Source: Vivienne O.(2025)

NATURAL VENTILATION
COOLING TOWER FROM THE FOURTH FLOOR ALLOWED FRESH AIR TO CIRCULATE NATURALLY. THIS REDUCES O THE ENERGY LOAD ON THE HVAC

RENEWABLE ENERGY INTEGRATION
THE STUDENT CENTRE IS PART OF STRATHMORE PIONEERING SOLAR INITIATIVE. THE CAMPUS INSTALLED A 600KW SOLAR SYSTEM, WHICH POWERS MOST OF THE UNIVERSITY'S OPERATIONS. EXCESS ENERGY IS FED BACK TO THE GRID, GENERATING REVENUE

Photo showing solar panels on Strathmore buildings
Source: Vivienne O. (2025)

BIOPHILIC INTEGRATION:DESIGN FEATURES SUCH AS WATER FOUNTAINS NOT ONLY IMPROVE COOLING AND AIR QUALITY BUT ALSO ENHANCE STUDENT WELLBEING BY CREATING A REFRESHING, NATURE-LIKE ATMOSPHERE.

FLEXIBILITY: SPACES WITHIN THE CENTRE ARE DESIGNED TO ADAPT OVER TIME TO ACCOMMODATE FUTURE CHANGES IN LEARNING, SOCIAL, AND CULTURAL NEEDS WITHOUT REQUIRING MAJOR STRUCTURAL CHANGES.

INNOVATION IN GREEN BUILDINGS, THE STUDENT CENTRE WAS AMONG THE FIRST IN AFRICA TO ACHIEVE LEED CERTIFICATION AND RECEIVED THE BEST GREEN BUILDING DEVELOPMENT IN AFRICA AWARD (2012).

Photo showing LEED certificate awarded to the students' centre
Source: Ben Carson K. (2025)

WATER HARVESTING & RECYCLING: THERE IS A RAINWATER HARVESTING AND TREATMENT SYSTEM WHICH MEETS UP TO 90% OF THE BUILDING'S WATER NEEDS (TOILETS, CLEANING). THIS REDUCES PRESSURE ON MUNICIPAL WATER SUPPLIES AND SAVES ON MONEY.

USER FEEDBACK
COMFORT AND ENVIRONMENTAL QUALITY
THE INTERIORS WERE BRIGHTLY LIT. THE GLASS WALLS ON THE WHICH BRING IN A LOT OF LIGHT. IT REDUCED THE DEMAND FOR ARTIFICIAL LIGHTING DURING THE DAY
THE TEMPERATURES WERE OKAY. RECESSED WINDOWS AND THERMAL WALLS ON THE WESTERN FACADE
FUNCTIONALITY AND SPACE USE
LAYOUT IS VERY FLEXIBLE, THERE WERE GROUPS WORKING ON A PROJECT, OTHERS JUST HANGING OUT - IT FELT LIKE THE HEART OF STUDENT LIFE
OPEN PLAN LAYOUT ALSO MEANS NOISE IS CARRIED ACROSS. DURING PEAK HOURS ONE HAS TO SHOUT.
ACCESSIBILITY AND CIRCULATION
MOVING THROUGH THE BUILDING IS EASY WITH MOST ACCESSES LOCATED AT THE ATRIUM.
STILL WE ACKNOWLEDGED THAT FOR A NEW COMER PHYSICALLY CHALLENGED ON A WHEELCHAIR, FINDING THE ELEVATOR ACCESS FROM THE MAIN ENTRANCE MAY BE CHALLENGING.
ALSO BOTTLENECKS AT THE BUFFET AREA WHERE IT FEELS A BIT CRAMPED
AESTHETICS AND ATMOSPHERE
ATMOSPHERE INSPIRING, WITH THE BLUE, RED AND GOLD COLORS OF THE STRATHMORE COURT OF ARMS, THE WEST AFRICAN PAINTINGS, BREEZE FROM THE FOUNTAIN ADDING A REFRESHING TOUCH.
MAINTENANCE
MAINTENANCE IS SOMETHING THEY TAKE SERIOUSLY IN STRATHMORE SO MOST OF THE THINGS WORK PERFECTLY AS INTENDED LIKE THE FLAT ROOF THAT IS BEING USED AS A TERRACE, IT IS ADMIRABLE

STRENGTHS

1.CLEAR CAMPUS HUB FOR STUDENT LIFE. THE CENTRE CONCENTRATES SOCIAL, STUDY AND SUPPORT SPACES (CAFETERIAS, INFORMAL STUDY AREAS, STUDENT SERVICES, ENTREPRENEURSHIP HUBS LIKE @IBIZAFRICA ON THE 5TH FLOOR), WHICH STRENGTHENS COMMUNITY AND DAILY FOOTFALL.
2.DAYLIT, MULTI-STOREY ATRIUM. A TALL, "LIGHT-FLOODED" CENTRAL SPACE IMPROVES VISUAL CONNECTIVITY, PASSIVE SURVEILLANCE AND WAYFINDING, WHILE CREATING A MEMORABLE IDENTITY FOR THE BUILDING.
3. GREEN-BUILDING ORIENTATION. STRATHMORE'S NEWER BUILDINGS—INCLUDING THE STUDENT CENTRE—WERE CONSTRUCTED TO LEED-ALIGNED STANDARDS AND SIT WITHIN A CAMPUS KNOWN FOR SUSTAINABILITY (SOLAR PV, WATER RECYCLING, ETC.), WHICH REDUCES OPERATIONAL IMPACT AND SUPPORTS INSTITUTIONAL SUSTAINABILITY GOALS.
4.ENVELOPE FEATURES THAT LEVERAGE DAYLIGHT. CAMPUS BUILDINGS FEATURE TENSILE/GLAZED WALL/ROOF SYSTEMS TO MAXIMIZE NATURAL LIGHTING AND REDUCE DAYTIME ELECTRIC LIGHTING LOADS—AN APPROACH CONSISTENT WITH THE STUDENT CENTRE'S BRIGHT INTERIORS.
5.STRATEGIC SITING AND ACCESSIBILITY WITHIN CAMPUS. LOCATED ON OLE SANGALE ROAD (MADARAKA) AMONG KEY ACADEMIC BLOCKS, THE CENTRE ACTS AS A NATURAL CROSSROADS FOR STUDENTS MOVING BETWEEN CLASSES AND SERVICES.

LIMITATIONS

1.PEAK-TIME CONGESTION. AS THE PRIMARY SOCIAL/FOOD/STUDY NODE, THE CENTRE EXPERIENCES HEAVY DEMAND AT MEAL TIMES AND BETWEEN CLASSES; CROWDING AND QUEUES CAN DEGRADE USER COMFORT.
2.SECURITY BOTTLENECKS.STRONG PERIMETER AND BUILDING ACCESS CONTROL—WHILE BENEFICIAL—CAN SLOW FLOWS AT ENTRANCES DURING RUSH PERIODS;QUEUE MANAGEMENT ARE ESSENTIAL.
3.GLARE/THERMAL CONTROL IN GLAZED ATRIA. THE GENEROUS GLASS AND SKYLIGHTS THAT ENABLE DAYLIGHT CAN ALSO INTRODUCE HEAT GAIN AND GLARE IN NAIROBI'S CLIMATE WITHOUT ROBUST SHADING, FRITTING AND STACK-EFFECT VENTILATION STRATEGIES.
4.MAINTENANCE BURDEN FOR HIGH-PERFORMANCE FEATURES. LEED-TYPE SYSTEMS (E.G., RAINWATER TREATMENT, ADVANCED GLAZING, PV INTEGRATION) REQUIRE CONSISTENT O&M BUDGETS AND SKILLED FACILITIES STAFF TO SUSTAIN PERFORMANCE OVER TIME.
5. LIMITED PUBLISHED TECHNICAL DOCUMENTATION. THERE'S SPARSE PUBLICLY AVAILABLE DETAIL ON THE STUDENT CENTRE'S ARCHITECT, DETAILED SECTIONING, MEP STRATEGIES AND MEASURED PERFORMANCE, WHICH CAN HINDER BENCHMARKING IN ACADEMIC CASE STUDIES.

SUMMARY & LESSONS LEARNED

THE STRATHMORE UNIVERSITY STUDENT CENTRE DEMONSTRATES HOW ARCHITECTURAL DESIGN CAN INTEGRATE BUILDING SERVICES, TECHNOLOGY, AND ENVIRONMENTAL STRATEGIES INTO A COHERENT WHOLE.
KEY LESSONS INCLUDE THE IMPORTANCE OF MATERIAL HONESTY (STONE AND CONCRETE AS ENDURING ELEMENTS)
INTEGRATION OF PASSIVE STRATEGIES WITH MODERN TECHNOLOGY
FAÇADE DESIGN THAT BALANCES SOLID AND VOID.
. HUMAN-CENTERED DESIGN ENRICHES CAMPUS LIFELOUNGES, DINING HALLS, AND SOCIAL SPACES FOSTER INTERACTION.HOLISTIC STUDENT GROWTH HAPPENS OUTSIDE CLASSROOMS.
2.CRITICAL REGIONALISM WORKSMODERN TECHNIQUES ADAPTED TO LOCAL CLIMATE AND CULTURE.BALANCES GLOBAL STANDARDS WITH AFRICAN IDENTITY.
3. ARCHITECTURE EXPRESSES INSTITUTIONAL IDENTITYTHE STUDENT CENTRE EMBODIES STRATHMORE'S VALUES: EXCELLENCE, INCLUSIVITY, INNOVATION.ARCHITECTURE BECOMES A LIVING STORY OF THE INSTITUTION
SOLAR INTEGRATION IS SCALABLE: THE CAMPUS-WIDE SOLAR PV SYSTEM DEMONSTRATES HOW RENEWABLE ENERGY CAN REDUCE OPERATIONAL COSTS AND EVEN GENERATE INCOME THROUGH GRID EXPORT.
FLEXIBILITY IN THE LAYOUT IS KEY
IT ENSURES THAT THE BUILDING REMAINS RELEVANT AS STUDENT NEEDS EVOLVE

Kenyatta University

Kenyatta University continues to stand at the forefront of higher education in Africa, driven by its commitment to excellence in teaching, research, and community engagement. Over the past year, the University has expanded its investment in infrastructure and digital learning platforms to enhance both in-person and remote study experiences. This focus has ensured that students benefit from world-class academic programmes delivered in an environment that promotes creativity, innovation, and collaboration. As of April 2025, Kenyatta University maintained its high global standing, ranked among the top institutions in Africa for research output, industry partnerships, and alumni impact. The University's emphasis on practical, hands-on training remains central to its mission, enabling graduates to seamlessly integrate into the workplace with industry-ready skills. Strong links with corporate partners, NGOs, and government agencies have led to expanded internship and employment opportunities for students, ensuring that they remain competitive in the global job market.

The Department of Architecture & Interior Design (DAID) has strengthened its role as a leader in sustainable design education, responding to emerging trends and global environmental priorities. In partnership with the School of Engineering and Architecture, the Department has introduced new courses in advanced building technologies, smart city planning, and climate-resilient design, equipping students to address modern urban and rural challenges. The curriculum continues to integrate sustainability principles into every stage of the design process, with an emphasis on energy efficiency, renewable materials, and community-focused development. The department's project-based learning model remains a core feature, giving students real-world problem-solving experience through studio-based projects, industry collaborations, and fieldwork. DAID's faculty—comprising experienced academics and practitioners from Kenya and abroad—have enhanced research and innovation output through collaborative projects, exhibitions, and publications. The Department's modern facilities, including design studios, workshops, laboratories, and digital fabrication labs, have been upgraded to support advanced learning needs. This environment nurtures a new generation of architects and interior designers who are equipped to contribute meaningfully to the evolving built environment, both locally and internationally.

THE TEAM

Dr. Rehab Hamdi Elnaggar (PHD), EEE-EES

Rehab Hamdi Elnaggar is a lecturer, architect and urban designer with 25 years of academic and professional experience. She has been a lecturer at Kenyatta University since 2021. Dr. Elnaggar began her academic journey by earning a Bachelor's degree (BSc Hons) in Architecture and Urban Design from Ain Shams University in 1997. She furthered her education by obtaining a Master's degree (MSc) from the same institution in 2007 and a PhD from Cairo University in 2015.

Dr. Elnaggar's teaching career spans nearly two and a half decades, including her tenure at Arab Academy for Science, Technology and Maritime Transportation (AASTMT) from 2000 to 2019 and at AI Shorouk Academy from 2016 to 2019. Throughout these years, she has demonstrated an unwavering commitment to education and the advancement of architectural knowledge. In parallel with her academic endeavours, Dr. Elnaggar has developed a robust professional practice. Since her graduation, she has designed and supervised the implementation of numerous significant and specialized projects, ranging from hospitals and residential towers to resorts, schools, private residences, showrooms and a variety of interior design projects. Her dual career as an educator and practicing architect highlights her dedication to both the academic and practical dimensions of architecture and urban design.

Prof. Arch. Paul Mwangi Maringa (PHD), CBS, FAAK, MKIP

He is an Adjunct Professor of Architecture and Planning at KU, with 40 years of experience in academics, professional practice and administration management and policy implementation. He has taught various courses, published widely, and served as a referee & editor for academic journals, and research books. Maringa has also worked as a consulting architect/planner for government and private firms in various countries. He is a registered architect and member of several professional bodies. Additionally, he has held senior expatriate roles in Kigali, Rwanda, serving as Ag., Deputy Vice Chancellor AA in KIST; technical expert & master trainer, associate project team leader (SCE) & Senior Expert project management and planning in WDA. He was a long serving State Officer - Principal Secretary in Kenya's Ministry of Transport, Infrastructure, Housing, Urban Development, and Public Works, in three of its five state departments (Public Works, Transport & Infrastructure). He has considerable expertise in sustainable planning & development, urban growth management, and TVET planning.

Google Scholar: https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Paul+Mwangi+Maringa&oq=

Orcid: https://orcid.org/0009-0007-3471-8028.

ResearchGate: https://www.researchgate.net/profile/Paul-Maringa-2/publications

Academica.Edu: https://jkuat.academia.edu/PaulMwangiMaringa

Amazon: https://www.amazon.com/Books-Prof-Paul-Mwangi-Maringa/s?rh=n%3A283155%2Cp_27%3AProf%2BPaul%2BMwangi%2BMaringa

Arch. Noel Onyango Makaguta

He is an architect with 15 years of experience in design and project management. He holds a bachelor's degree in architecture from the University of Nairobi and a master's in Urban Management. He is currently a PhD candidate in Project Planning and Management. His interests are in Building Information Modelling and Project Management. Makaguta has also worked with AIA Architects and has been involved in several architectural projects including Manda and Malindi Airports for Kenya Airports Authority, Biosafety Level 2 & 3 Laboratory for the Federal Government of Somalia, several branches for Standard Chartered Bank, various residential and hospitality projects, and schools. Other work assignments include site surveys, building audits and document reviews for UNICEF. Additionally, in collaboration with the University of Nairobi Enterprise Services, he has served as the project architect for the KoTDA conference centre and was part of the team that developed the building code for the technopolis. He has presented academic papers at international conferences such as the International Accreditation Conference, Business Technology Conference and ORSEA. He has also reviewed conference submissions for the Academy of Management conference.

Arch. Dr.-Ing. Joseph Kedogo

Arch. Dr.-Ing. Joseph Kedogo is a Registered Architect in Kenya with over 20 years' experience in Professional Practice, Research and Academia in Africa and Europe. He holds a Doctorate in Architecture from the Technical University of Berlin Germany, Masters in Architecture and Planning from the Cologne University of Technology Germany (TH Cologne), Postgraduate Certificate in Planning from KU Leuven Belgium, and Bachelor of Architecture from the University of Nairobi Kenya.

He is the Chairman of the Department of Architecture, Design and Planning in the Faculty of Engineering and the Built Environment of the Technical University of Kenya (TUK), visiting professor or external examiner with TH Cologne, and a Consulting Architect and Director at ComArch Consortium, Nairobi, Kenya. He also serves as an external examiner, visiting professor or advisor with THA Augsburg and TU Berlin in Germany; University of Brasilia, Brazil; Jomo Kenyatta University of Agriculture and Technology and Kenyatta University in Kenya; as well as the UN Habitat and Slum Dwellers International. He has published several scholarly works and supervised and mentored several Bachelors, Masters and PhD students. His research interests are in Sustainable and Inclusive Architecture and Planning that encompasses: Housing and Governance, Urbanism, Community and Humanitarian Architecture, Environmental Design, Policy and Development, History and Theory of Architecture, and Qualitative Research Methods.

Arch. Dr.-Ing. Kedogo is a Corporate Member of Architectural Association of Kenya (AAK) where he belongs to both the Architects and the Environmental Design Consultants Chapter. He is a Corporate Representative and a member of the Governing Council of the AAK. He also serves the Board of registration of Architects and Quantity Surveyors (BORAQS) in the Research and Publication Committee as member, as well as the Architects and Quantity Surveyors Education Board (AQSEB) as an examiner, trainer and mentor. His other mentorship roles include being the Patron of Architectural Students Association of the Technical University of Kenya (ASA TUK), the Patron of Slum Architects of Kenya (SAK), and the Patron of the Association of Engineering Construction and Architecture Students (AESEC). He draws his inspiration from the deep-seated desire to see positive change a more meaningful life for the future generations through good and sustainable architecture and education.

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