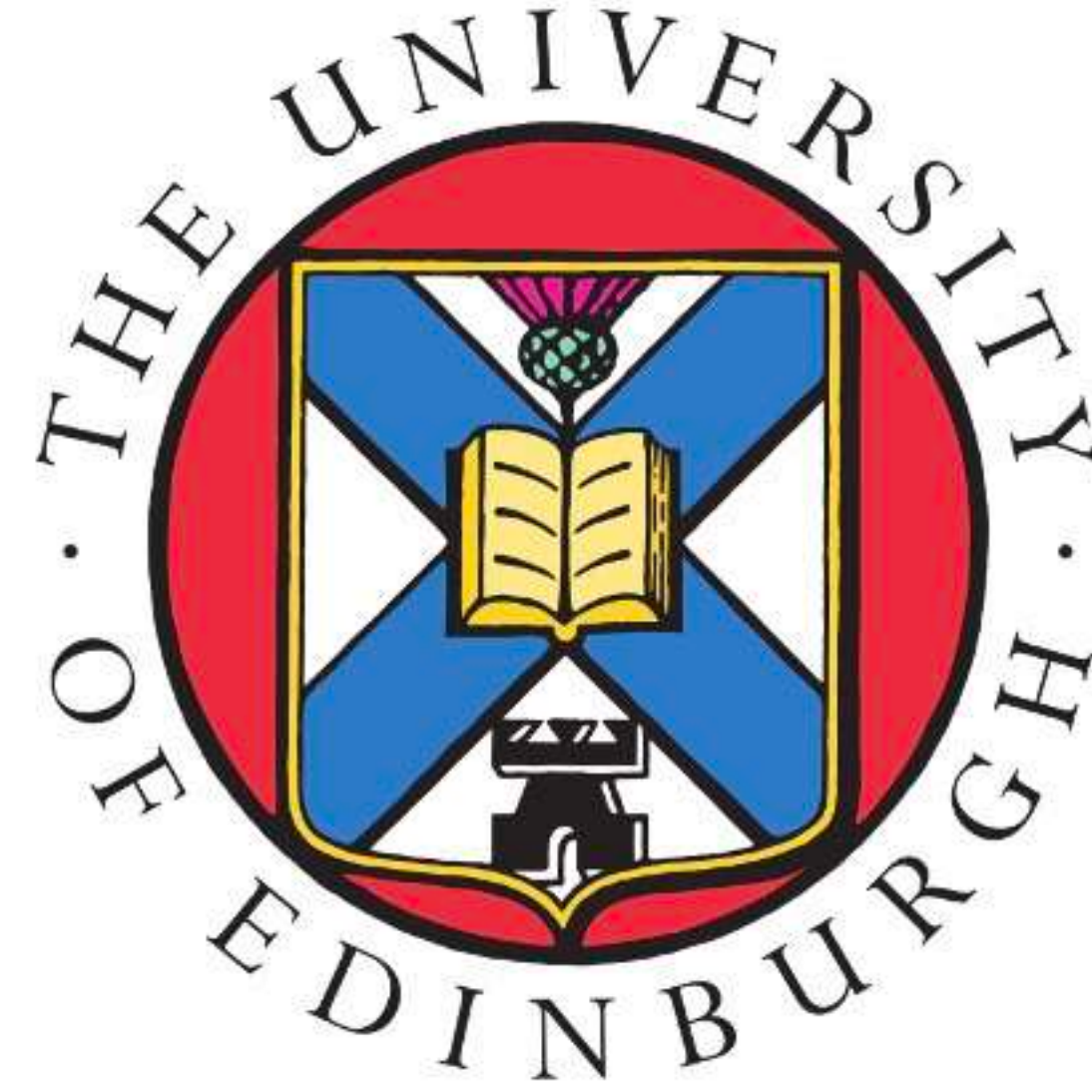


TEACHING AND PROFESSIONAL PORTFOLIO

Dr. Ernesto Valero Thomas



University of Edinburgh
United Kingdom
2013–2016



Shanghai Institute of Visual Arts
China
2017–2021



**National Autonomous
University of Mexico**
Mexico
2021–2025



University of
Edinburgh

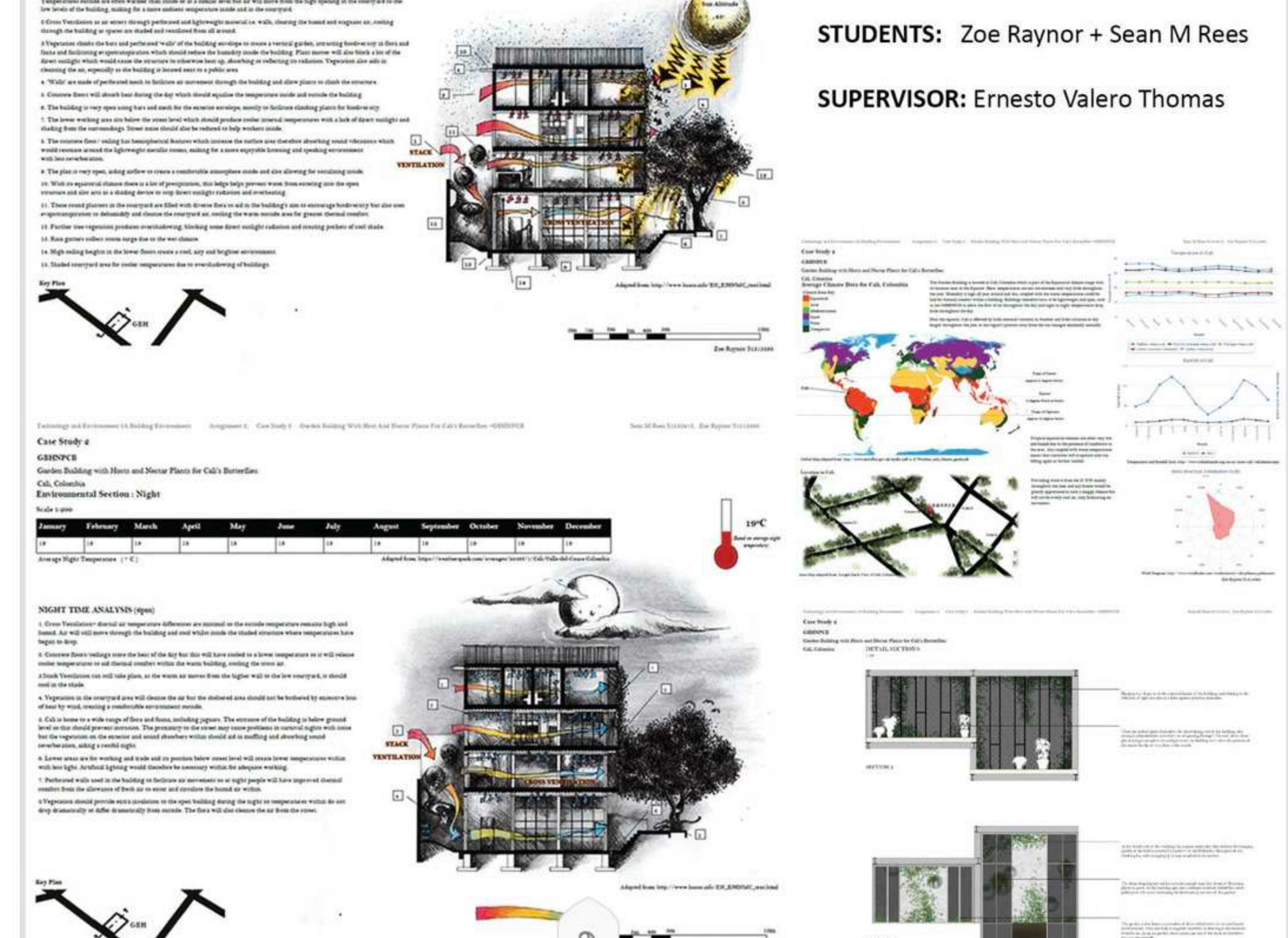
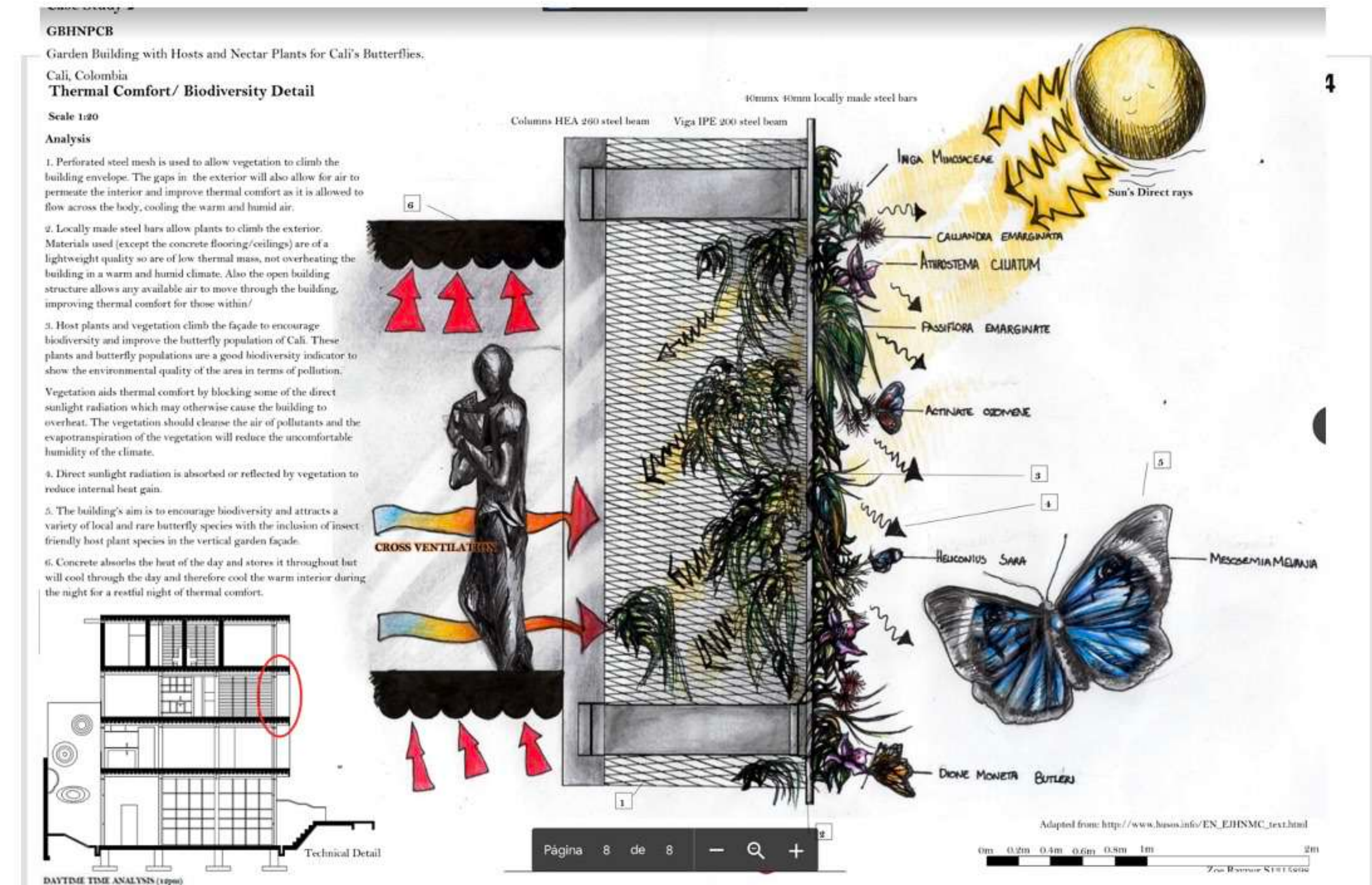
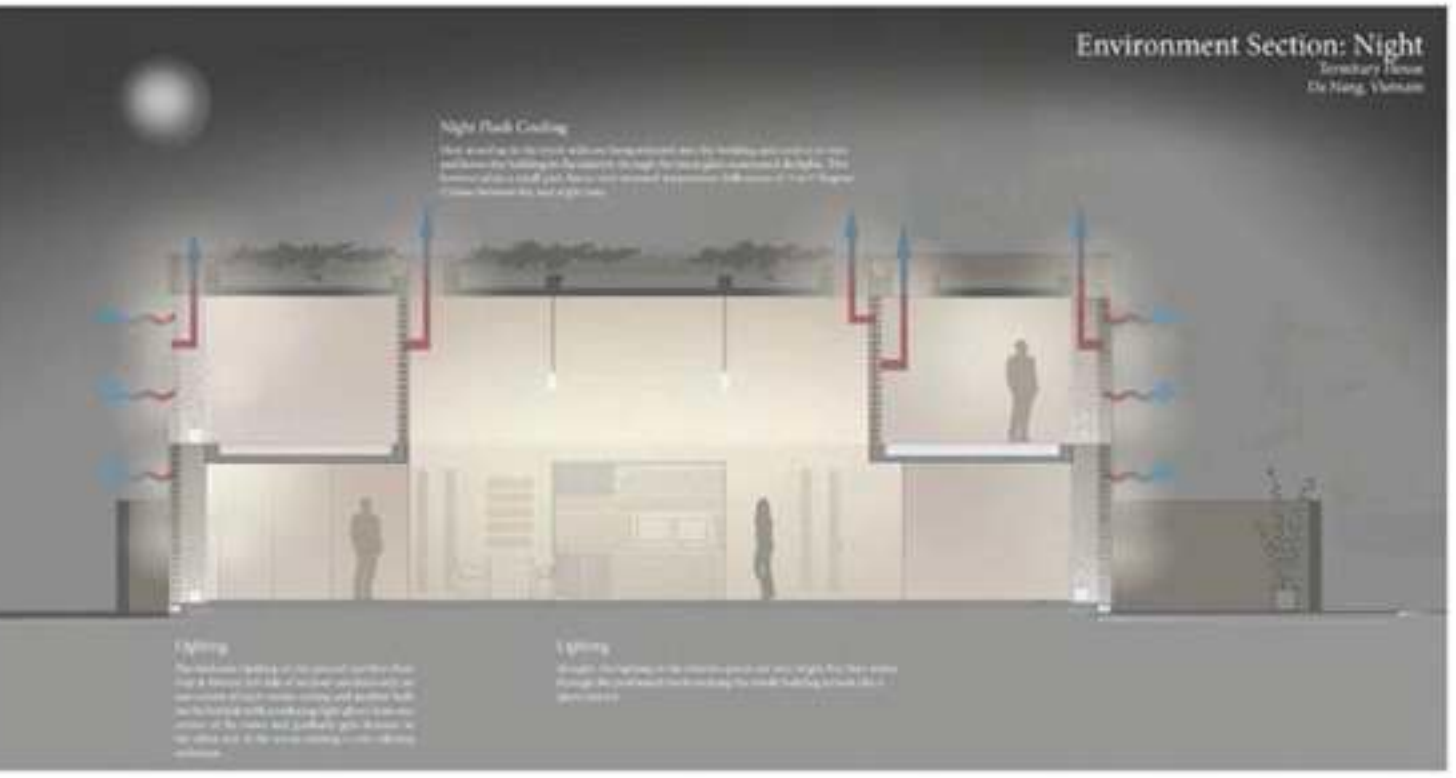
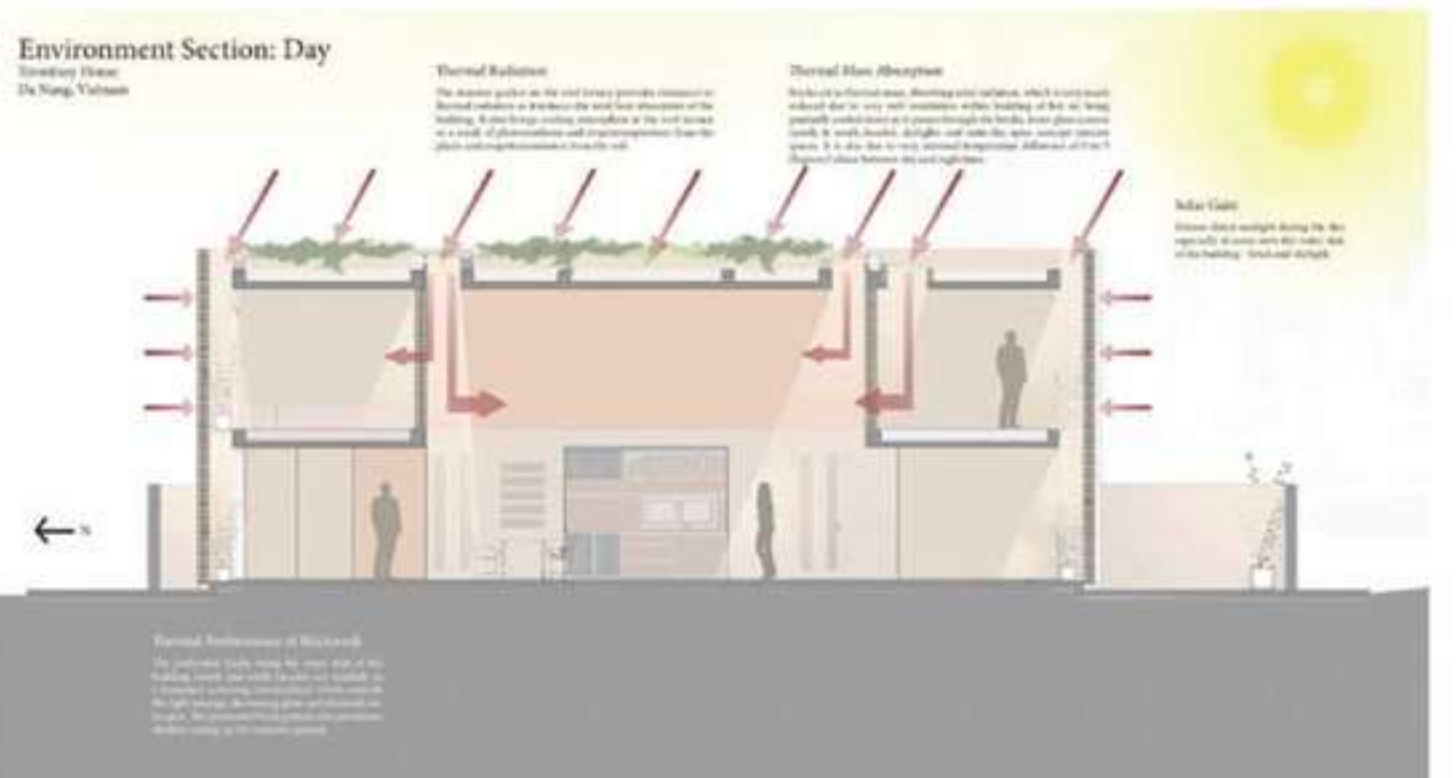
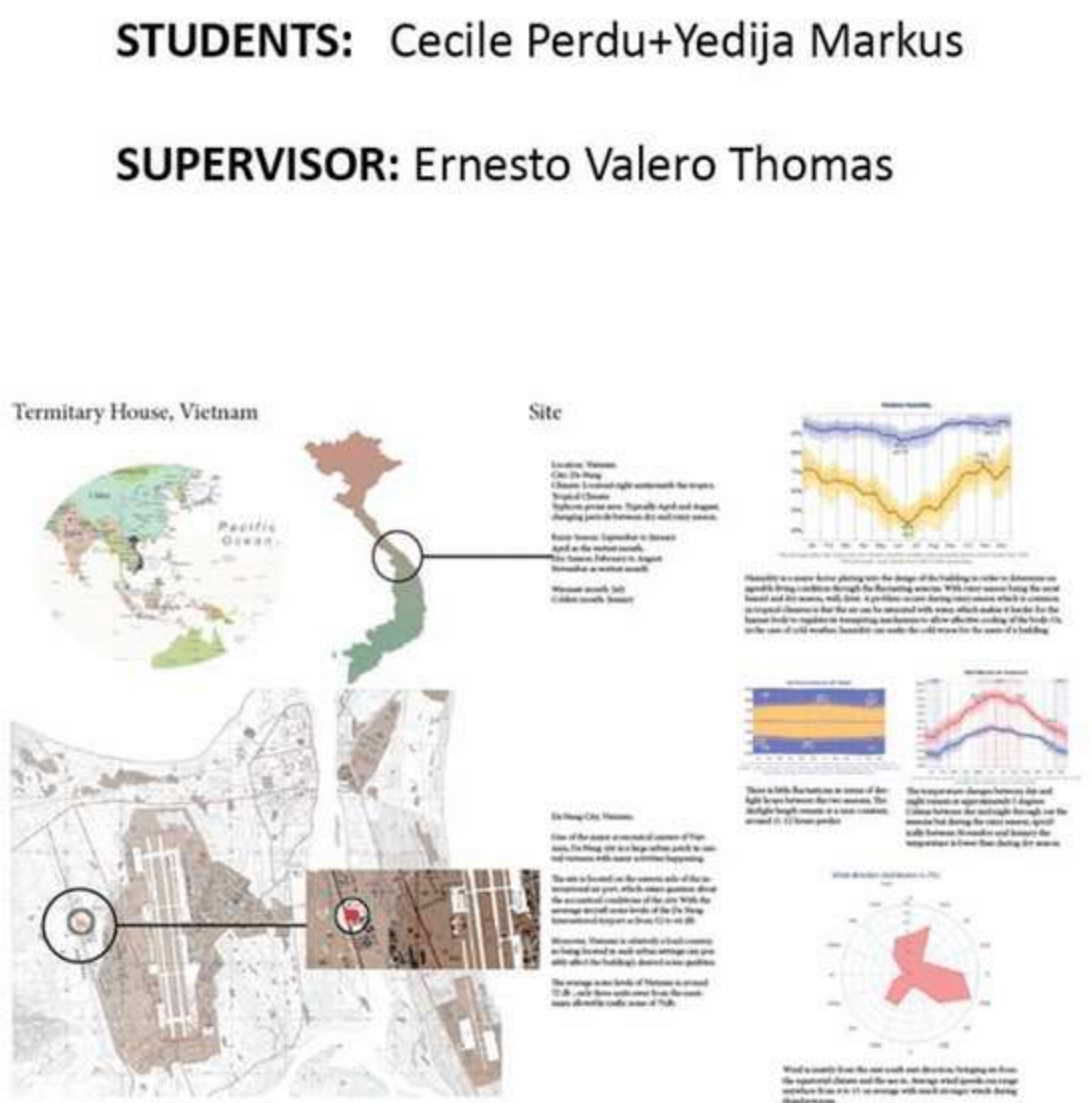
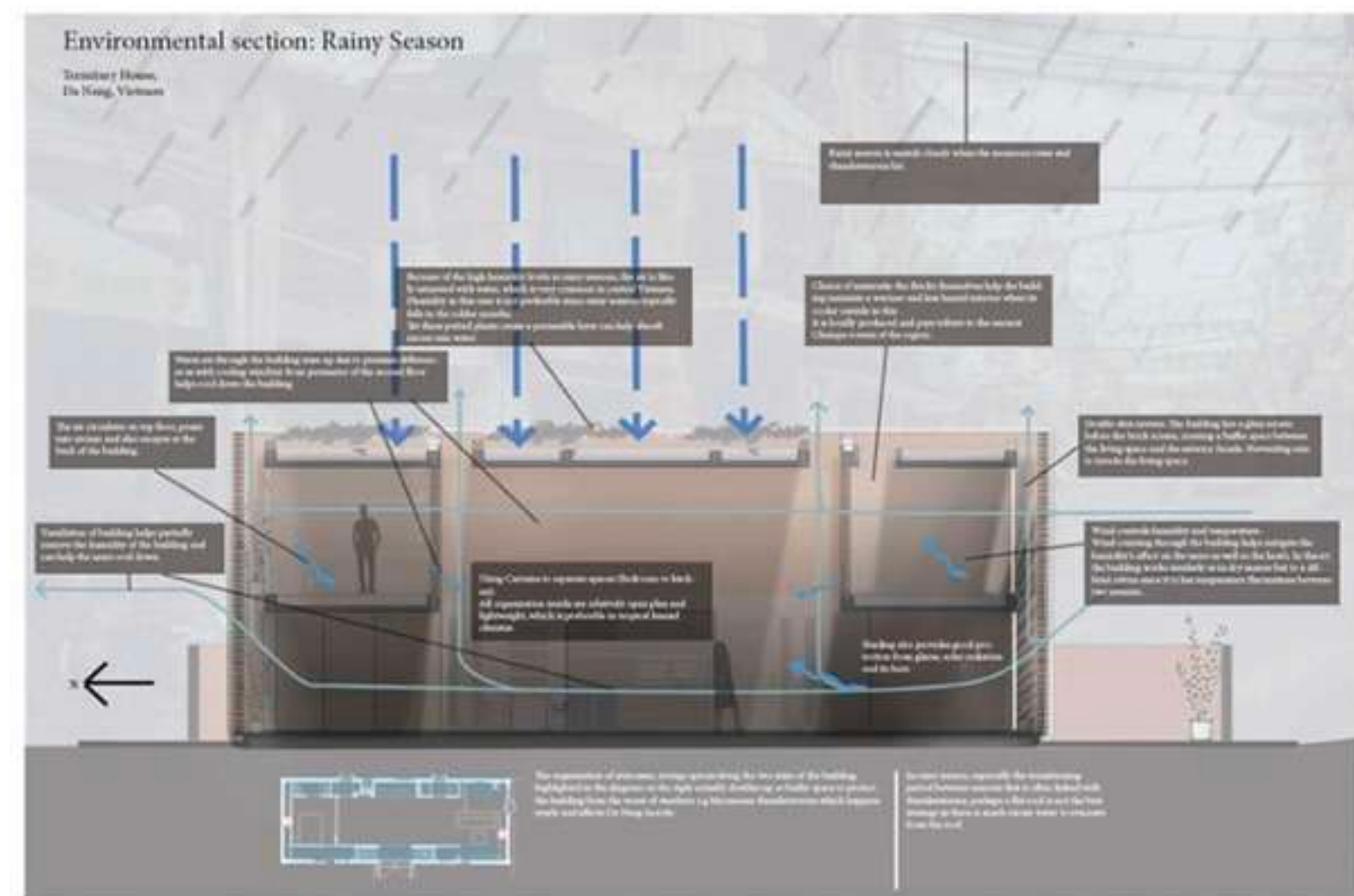
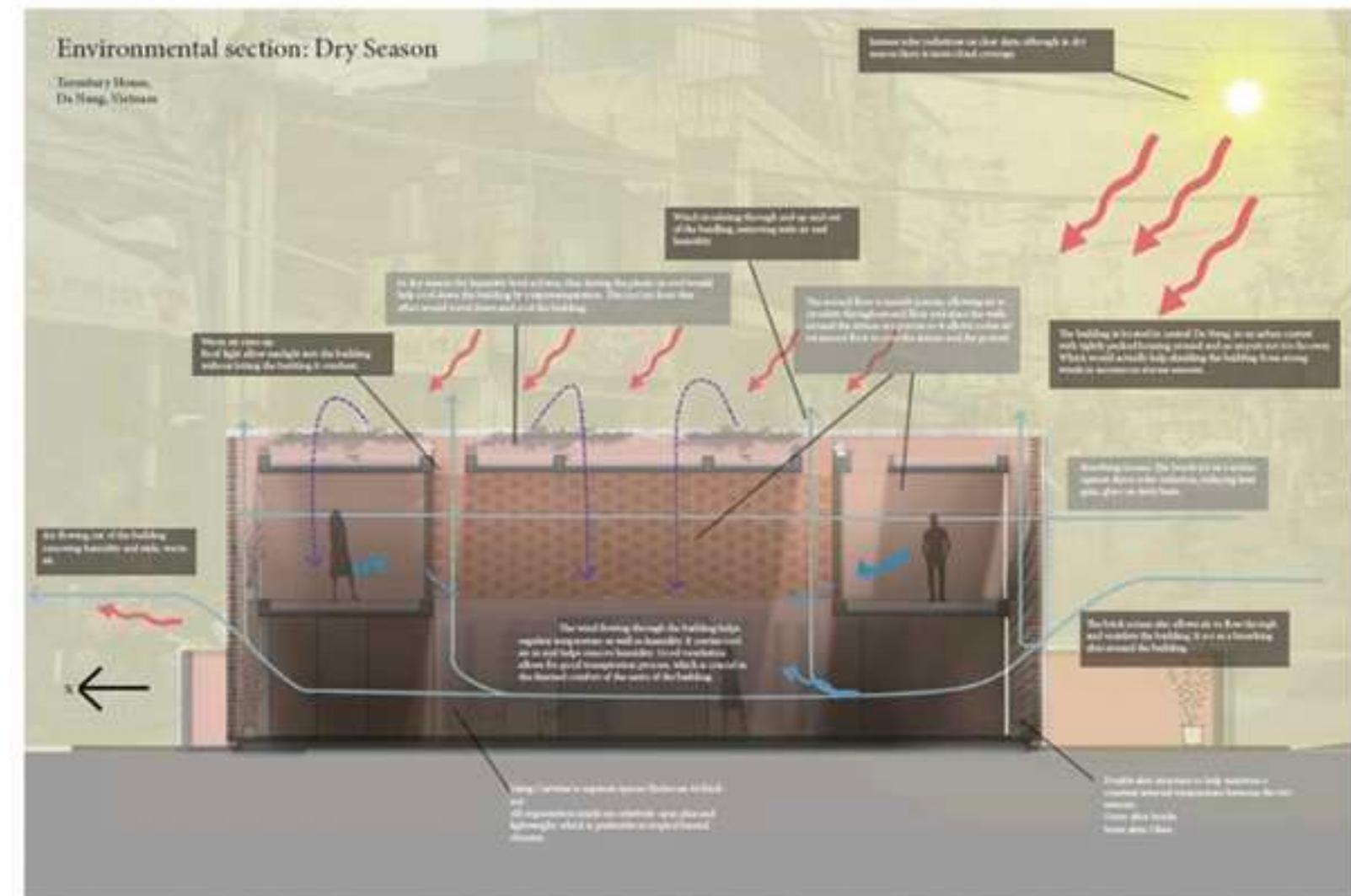
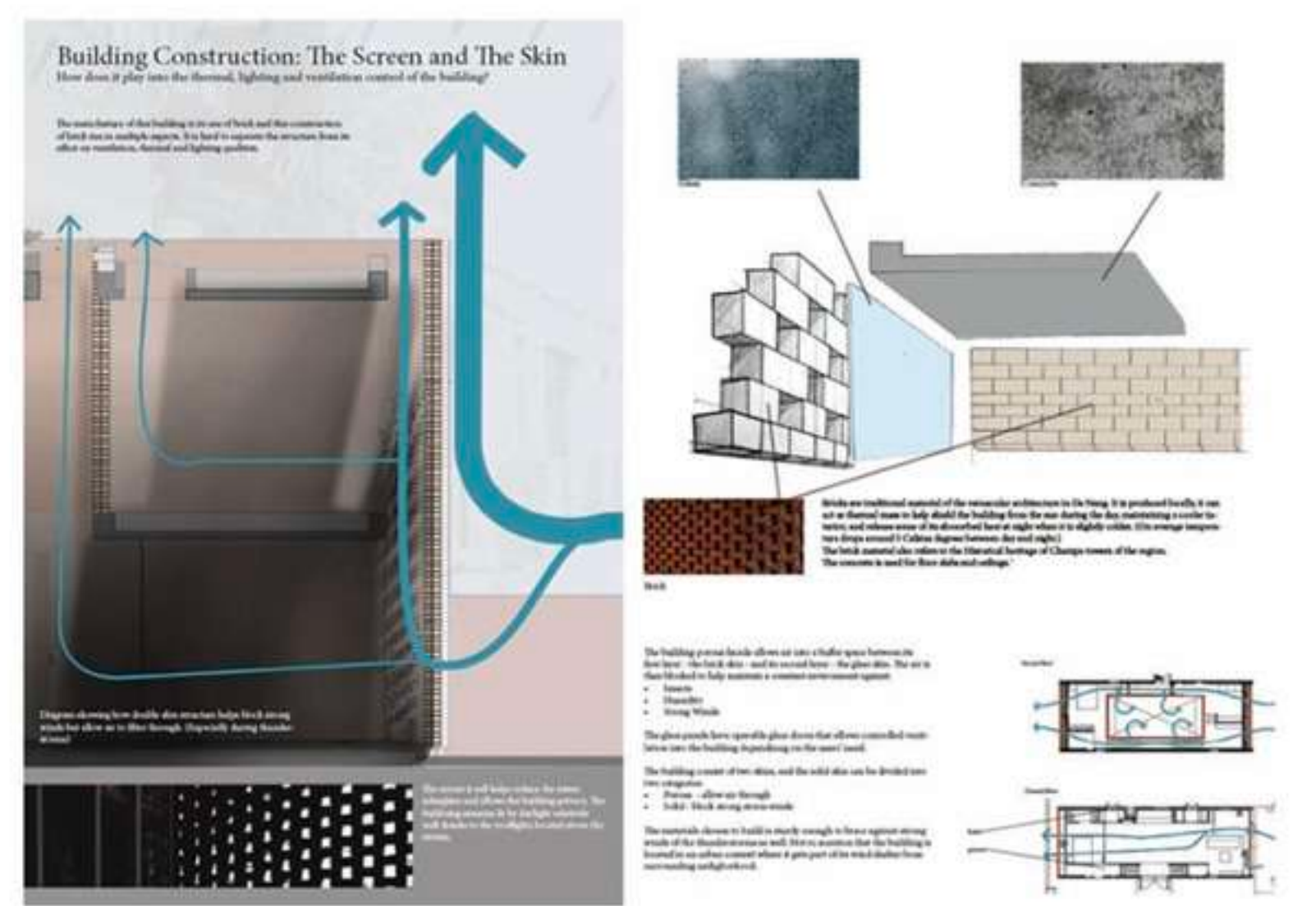
United Kingdom
2013-2016

Tutor

Courses:

• Technology and
Environment:
Principles

• Technology and
Environment:
2A





University of
Edinburgh

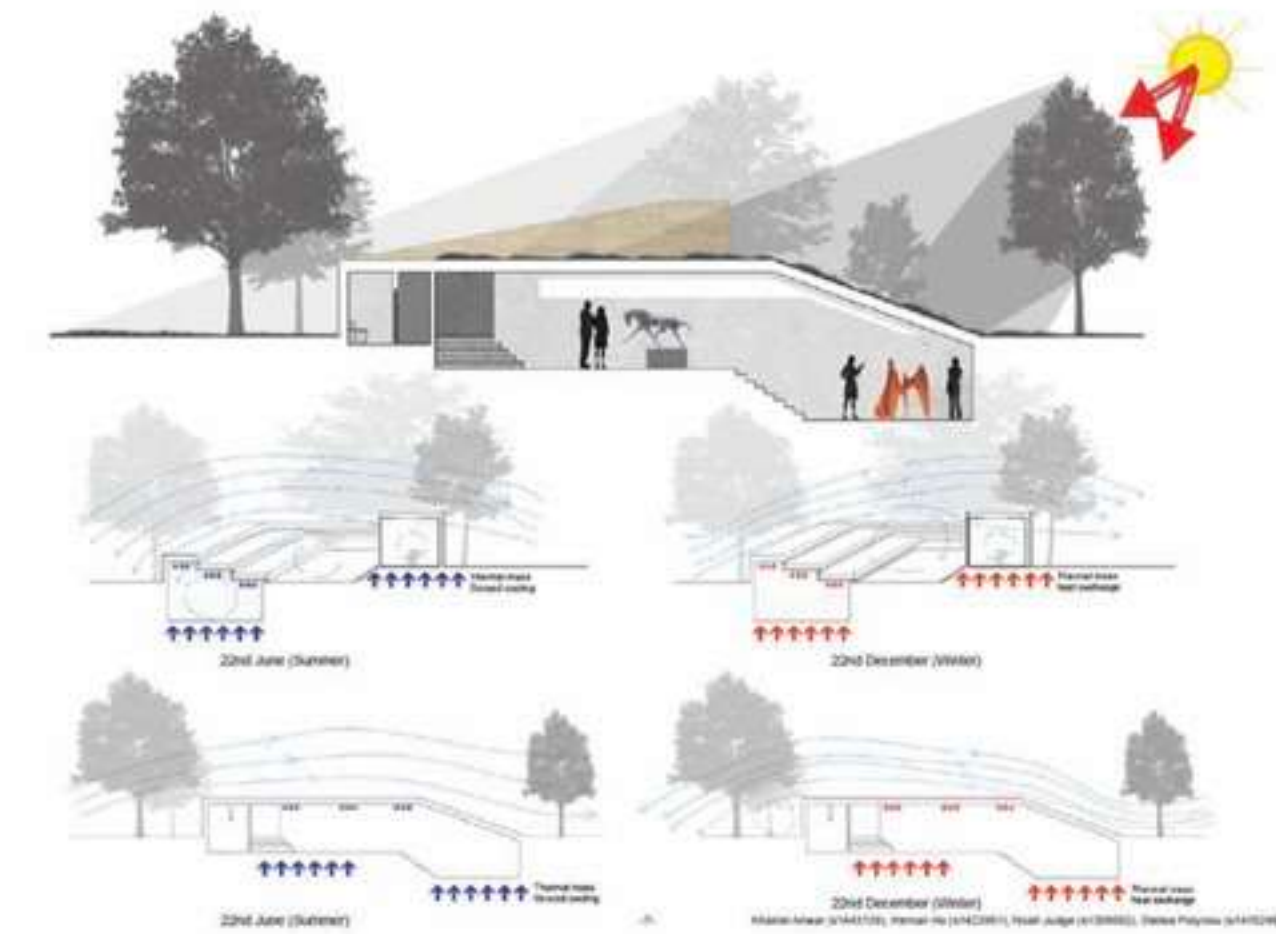
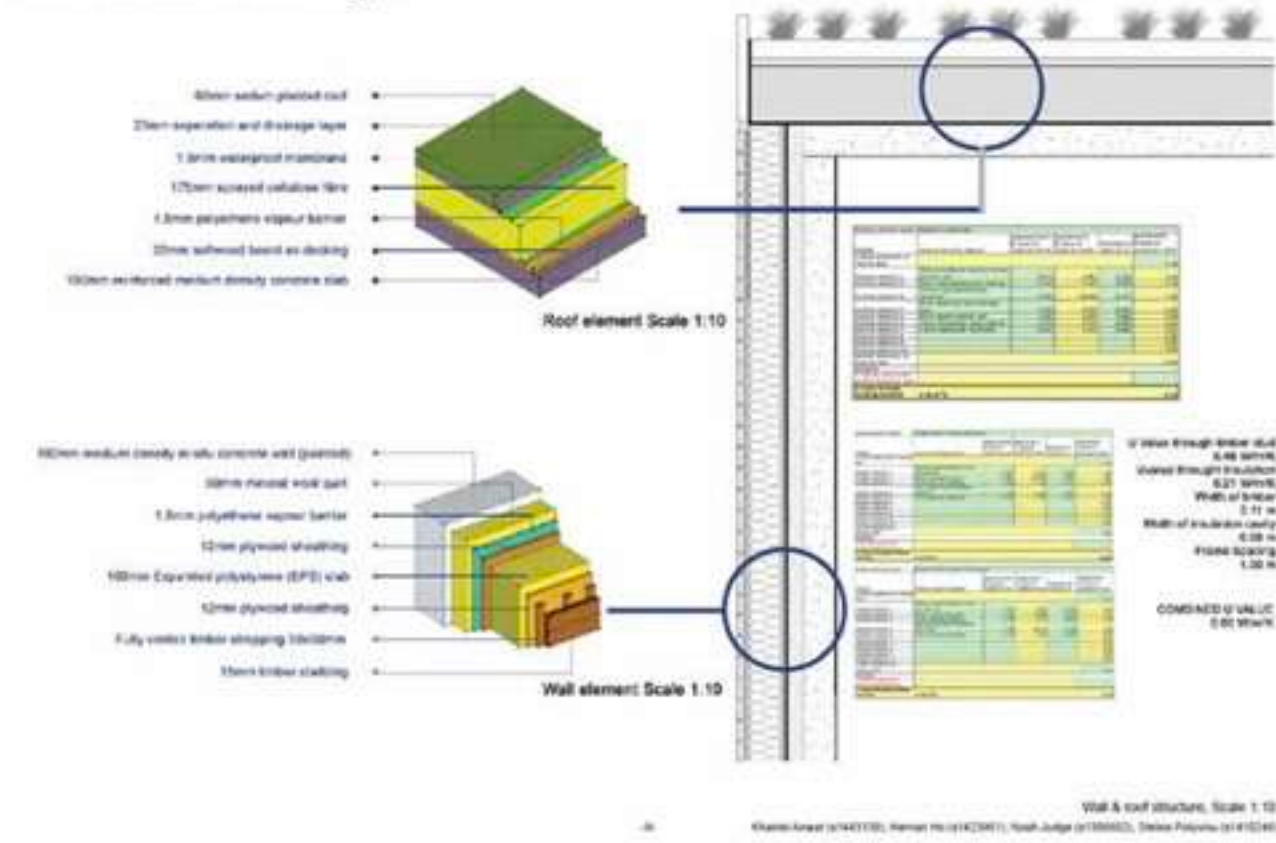
United Kingdom
2013-2016

Tutor

Courses:

- Technology and Environment: Principles
- Technology and Environment: 2A

Construction Drawings



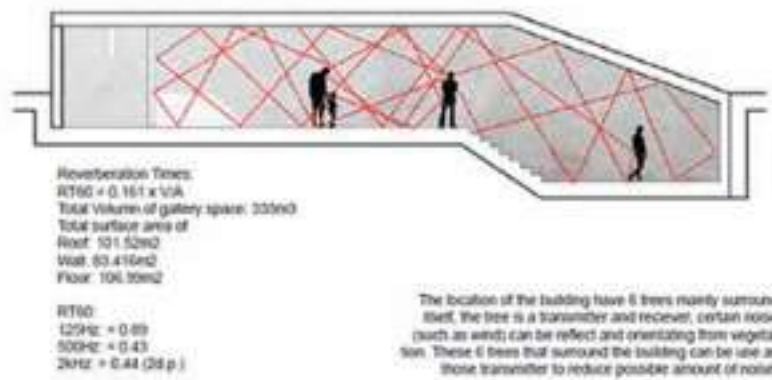
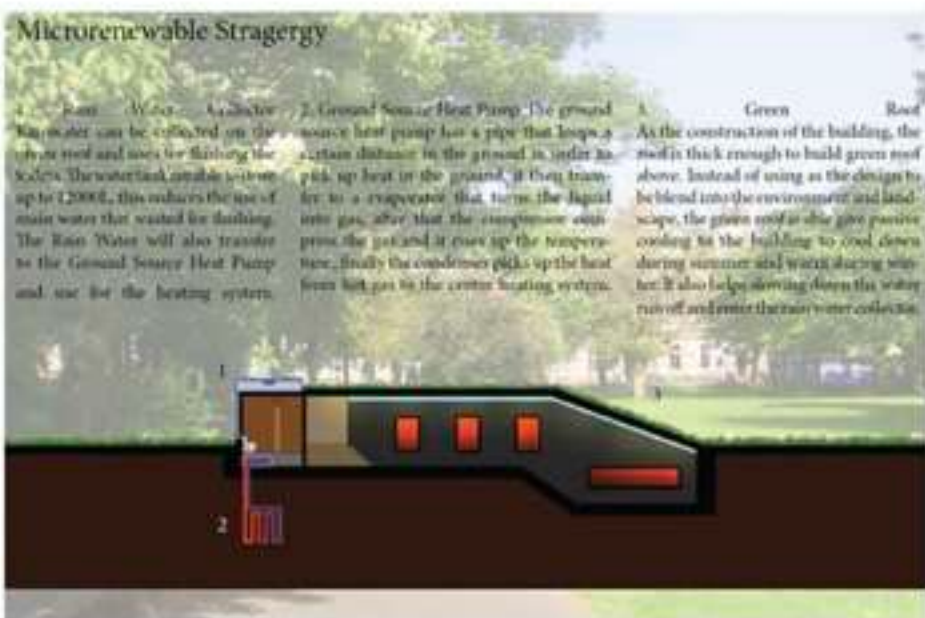
References:
NSteven, V. S. 2014, *Introduction to Architectural Science: The Basis of Sustainable Design*, Third Edition, Oxfordshire: Routledge.
Thomas, R. 2003, *Environmental Design: An introduction for architects and engineers*, London: Spon.

Stelios Polyviou: Climate Analysis, renderings and layout
Herman Ho: Drawings, acoustics and micorenrenewable strategy
Khairiel Anwar: Thermal control and construction drawings
Noah Judge: Site analysis and internal light



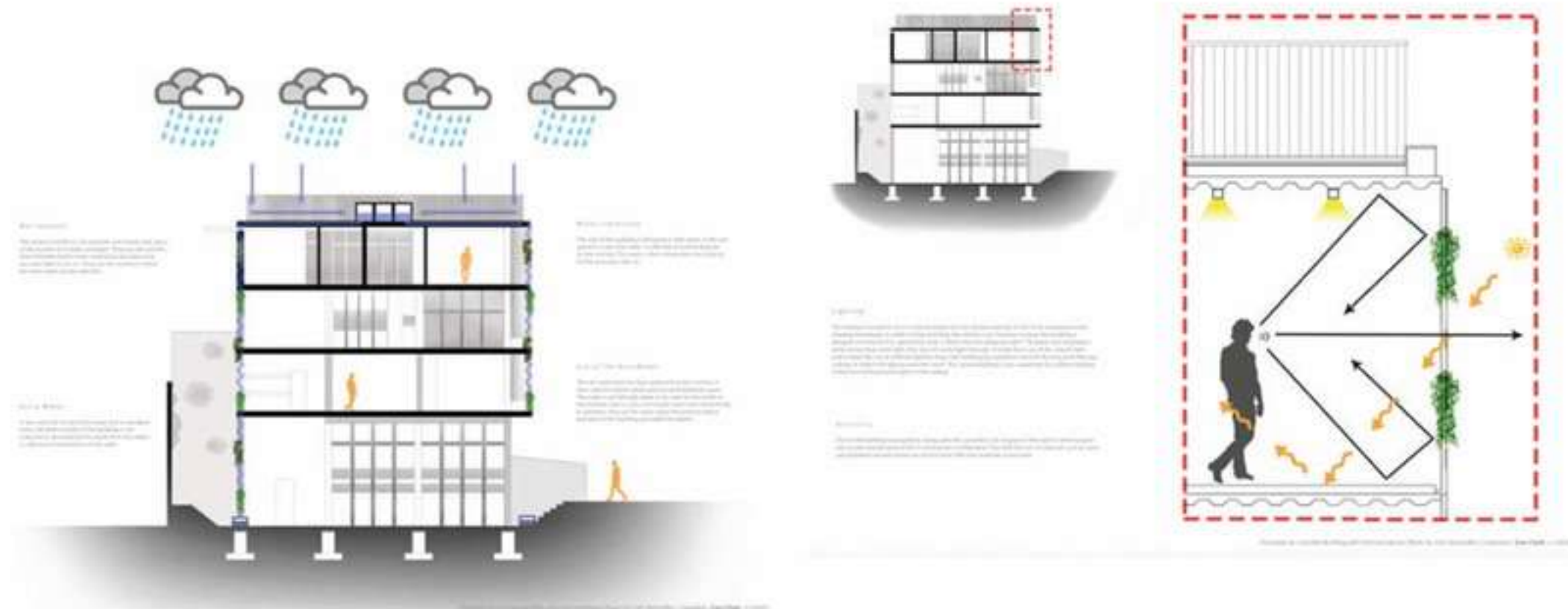
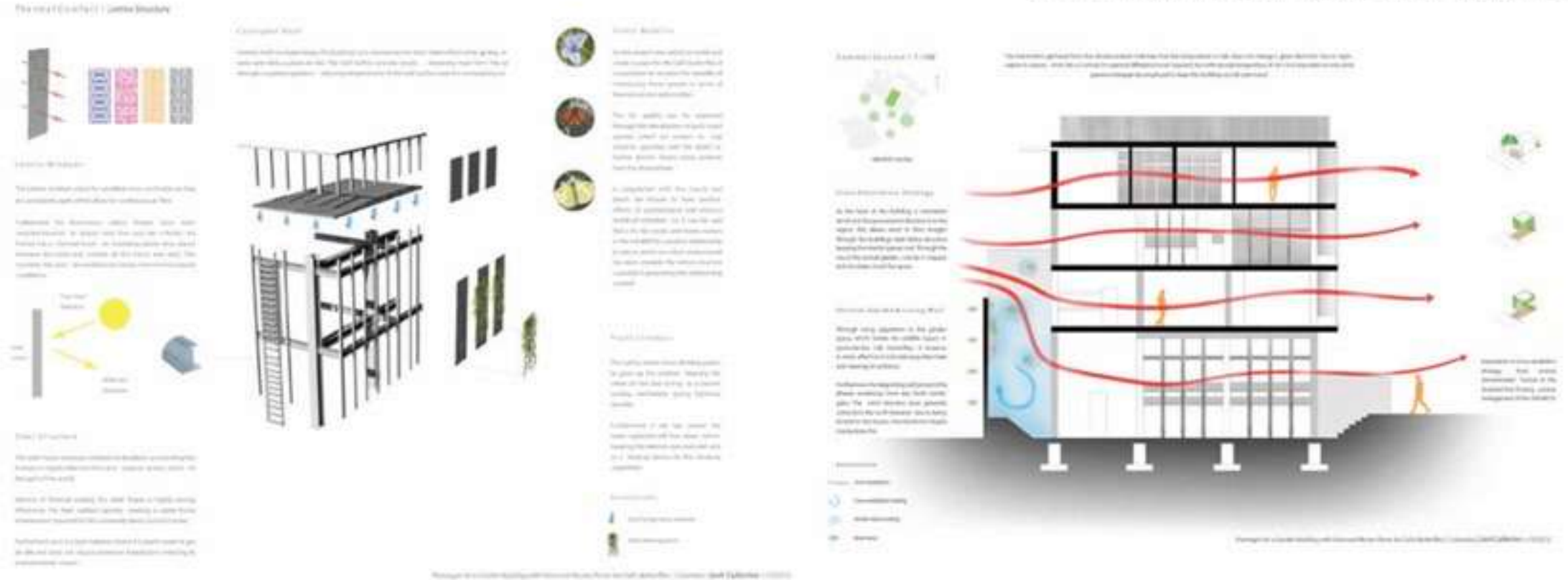
STUDENTS:
Herman Ho+Stelios Polyviou+Noah Judge+Khairiel Anwar

SUPERVISOR: Ernesto Valero Thomas

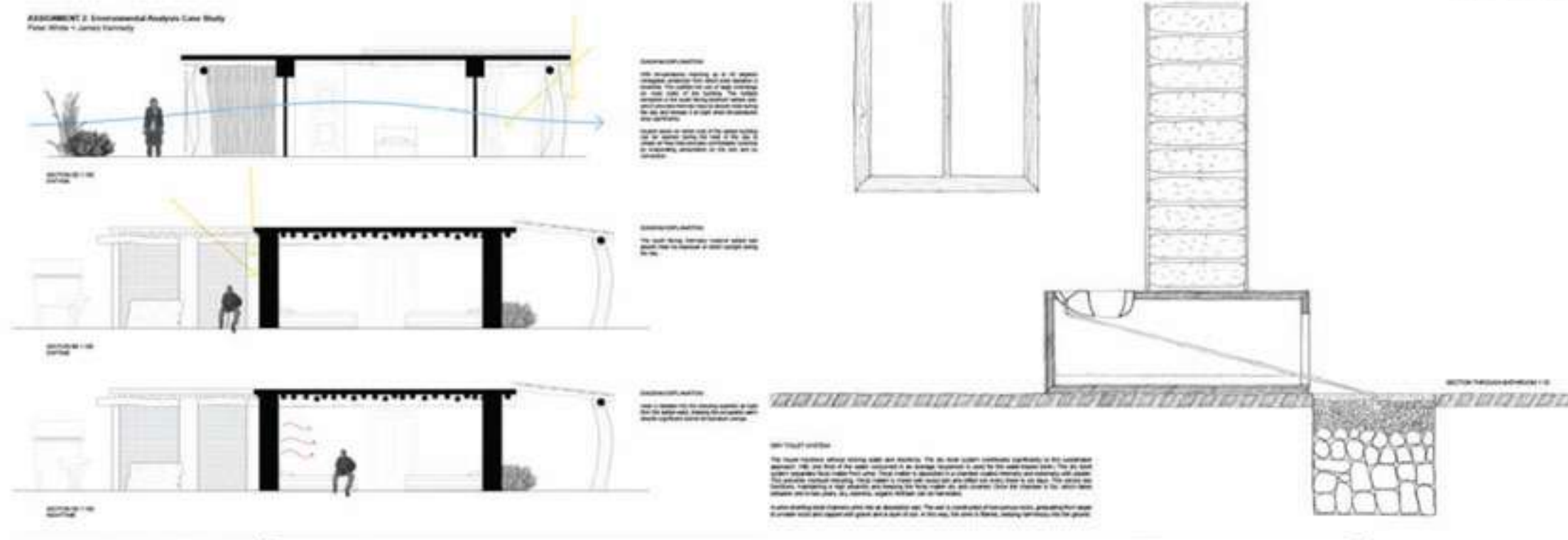
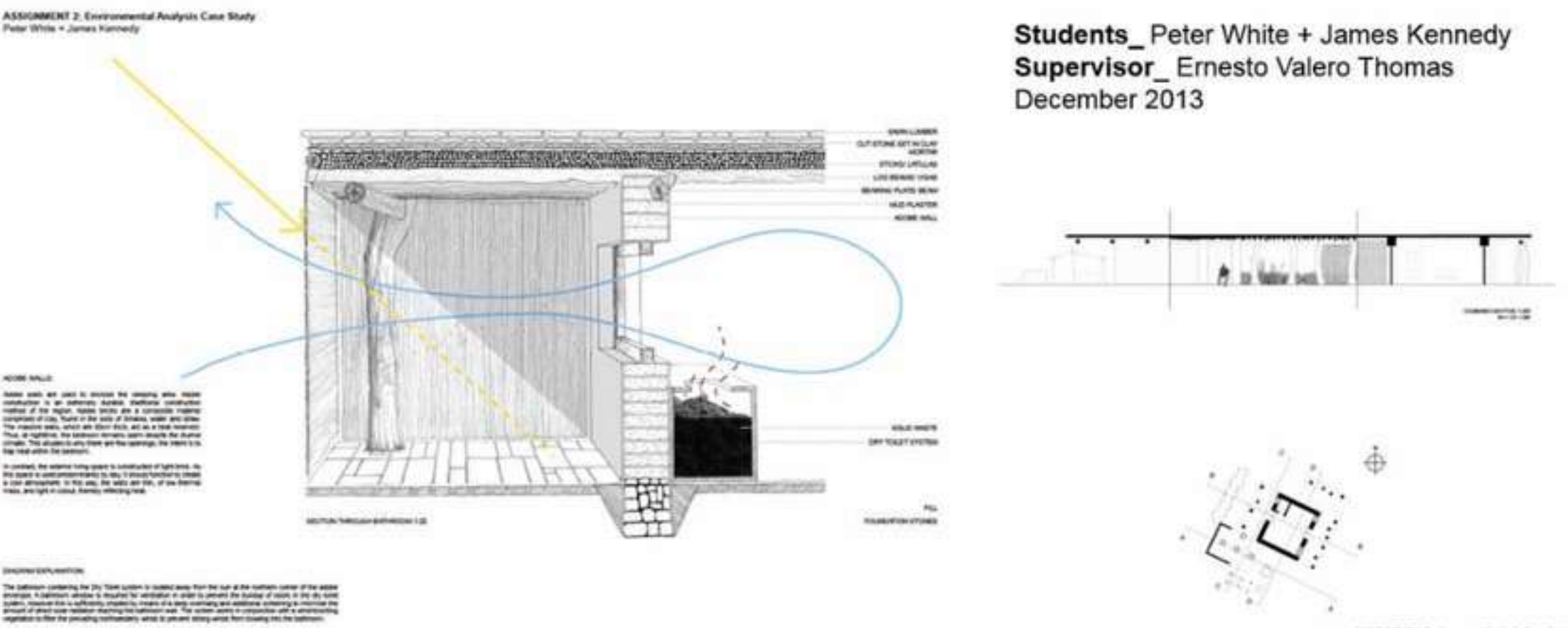


STUDENTS: Josh Cullerton + Sam Clark

SUPERVISOR: Ernesto Valero Thomas



STUDENTS: Peter White + James Kennedy
SUPERVISOR: Ernesto Valero Thomas





University of
Edinburgh

United Kingdom
2013-2016

Tutor

Courses:

- Technology and Environment: Principles
- Technology and Environment: 2A

The effect of vegetation: Lighting, accoustic and cooling

1:20 Isometric

Plants evaporatively cool, reducing summer cooling loads on buildings, and bringing the interior temperature closer to the thermal comfort.

The butterflies house being in the urban part of Cali and facing the street, it is therefore exposed to noise. However, the vines covering the street facade work as acoustic buffer, and isolate the house from noise pollution.

Vines also work to keep the building cool, not only through evaporation, but also by working like a Mashrabiya, and preventing from glazing, especially high there, near the equator.

Water System

1:20 Isometric

Rain water collecting roof
Rain water deposits
Water distribution pipes
Water sprinkler
Moveable, extensible ladders to help aid the adaption and maintenance of the climbing plants

The building utilises a rainwater harvesting system. The storage tanks are located up high to avoid use of pumps and the pipes are easily accessible for repair work.

Minimum treatment is required for the water: just UV treatment. Then the water is used for non-potable uses such as flushing the toilets and watering the plants.

Courses:

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- 2) Urban Mobility and
Architecture,
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Infrastructures in Rural &
Urban Contexts,
- 4) Thesis Project
Principles
- 5) Thesis Project
Completion

Program Philosophy & 4-Year Curriculum 教学理念 & 四年教学大纲



Dr Ernesto Valero Thomas

Academic leader of Fourth Year
Senior Lecturer
PhD, MSc, BArch
The University of Edinburgh, UK
National University of Mexico



Teacher Xiaoshi Zhao

Academic leader of Third Year
Lecturer
Dipl. Ing, BArch
Karlsruhe Institute for Technology, Germany
Tongji University



Teacher Zhe Zhang

Academic leader of Second Year
Lecturer
Master in Architecture
Regio Politecnico di Torino,
Italy



Teacher Bin Wang

Master in Architecture
Bauhaus Uni-Weimar, Germany



Teacher Zhao Lan

Master in Architecture
Architectural Association School of
Architecture, London



Teacher Song Gao

PhD, Master in Architecture
The University of Hong Kong



Teacher Yan Zhuang
Design Fundamentals
and Studio Project



Teacher Yuehao Chen
Introduction to
Ecological Design



Teacher Dun Hou
History of Architecture
and studio Project



Teacher Hang Yang
Computer Design Fundamentals



Teacher Dequn Zhang
Art Fundamentals



Teacher Jian Zhu
Structure Engineering

Shanghai Institute of
Visual Arts

China
2017-2021

Senior Lecturer

Academic coordinator

Courses:

- 1) Ecological Studio VII-
*Ecological Restoration &
Public Space,*
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- 5) Thesis Project
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2 Teaching Team 教学团队



Courses:

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*Ecological Restoration &
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Architecture,
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Infrastructures in Rural &
Urban Contexts,
- 4) Thesis Project
Principles
- 5) Thesis Project
Completion

Fourth Year Thesis Project Theme:

*'Designed in China: Ecological Guidelines for Sustainable Projects in Architecture and
Urban Design'*

大四毕业设计主题:

中国设计: 建筑和城市设计可持续项目的生态指南



Professor Alexander J
Schmidt



Professor Haim
Dotan



Dr. Ernesto Valero
Thomas

Courses:

- 1) Ecological Studio VII-
Ecological Restoration & Public Space,
- 2) Urban Mobility and
Architecture,
- 3) Ecological
Infrastructures in Rural &
Urban Contexts,
- 4) Thesis Project
Principles
- 5) Thesis Project
Completion

ECOLOGICAL ARCHITECTURE DESIGN CURRICULUM											
EAD: 27 courses in 8 categories											
15 core courses + 6 eco-studio projects + 4 workshops + 1 internship project + 1 thesis project											
September 2019/Proposed & Reviewed by Professor Dotan, Professor Schmidt, Dr. Thomas, VP Jenny, Sun Dongmei, and Teaching Team of EAD											
Curriculum Coordinator: Dr. Ernesto Valero Thomas											
YEAR	1		2		3		4				
SEMESTER	1	2	3	4	5	6	7	8	NUMBER OF CREDITS PER AREA	NUMBER OF CREDITS PER AREA	
THESIS RESEARCH							RSCH. METHODS IN ECO. DESIGN	THESIS PROJECT COMPLETION	8	16	
BRANDING, MANAGEMENT & PORTFOLIO						PROF. PORTFOLIO & PRE. TECHNIQUES	INTERNSHIP		6	10	
THINKING IN SYSTEMS					PROF. ENGLISH IN ECO DESIGN		ECO-URBAN DESIGN		2	8	
				HUMAN FACTORS IN ENVL. DESIGN	ECO-LANDSCAPE DESIGN	ECO-MOBILITY			2		
STRUCTURES & ECOSYSTEMS						ECO-INFRASTR. IN RURAL & URB. CONTEXTS			2		
					ECO-CONSTRUCTION & BLDNG. MATERIALS				2	8	
			ECO-SYSTEMS PRINCIPLES	LOW-CARBON ARCHITECTURE					2		
VISUAL NARRATIVES				VISUAL REPRESENTATION II					2	4	
			VISUAL REPRESENTATION I						2		
HISTORICAL THINKING				THEORY AND HISTORY OF ARCH. & CITIES					2	4	
			THEORY AND HISTORY OF ARCH						2		
ECO-STUDIO PROJECTS		EAD EXPERIENCE PROJECT Eco-Flower	FIELDTRIP 1	FIELDTRIP 2	FIELDTRIP 3	FIELDTRIP 4	FIELDTRIP 5				
			ECO-STUDIO I: Eco-Room & Eco-Apartment	ECO-STUDIO II: Eco-House & Eco-Village	ECO-STUDIO III: Eco-Apt Building & Eco-Public Bldg	ECO-STUDIO IV: Ecological Neighborhood	ECO-STUDIO V: Ecological Restoration & Public Space		50	50	
EAD MASTERS LECTURES & VERTICAL WORKSHOPS			Form, Function & Emotion WORKSHOP	Learning and Designing with Nature WORKSHOP	Augmented Reality & Ecological Architecture WORKSHOP	Sustainable Cities & Ecological Design WORKSHOP			4	4	
ELECTIVES					*MANDATORY SELECTION OF 3 ELECTIVE COURSES IN OTHER DISCIPLINES				6	*6 to be organized by SIVA	
SIVA DETAO FOUNDATION YEAR	SIVA DETAO FOUNDATION YEAR										

4-YEAR CURRICULUM STRUCTURE

四年教学大纲

- 15 Core Courses
- 6 eco-studio projects
- 4 interdisciplinary workshops
- 1 internship project
- 1 thesis project

- Courses:

1) Ecological Studio VII-
Ecological Restoration & Public Space,

2) Urban Mobility and Architecture,

3) Ecological Infrastructures in Rural & Urban Contexts,

4) Thesis Project Principles

5) Thesis Project Completion

ECOLOGICAL ARCHITECTURE DESIGN CURRICULUM											
EAD: 27 courses in 8 categories											
15 core courses + 6 eco-studio projects + 4 workshops + 1 internship project + 1 thesis project											
September 2019/Proposed & Reviewed by Professor Dotan, Professor Schmidt, Dr. Thomas, VP Jenny, Sun Dongmei, and Teaching Team of EAD											
Curriculum Coordinator: Dr. Ernesto Valero Thomas											
YEAR	1		2		3		4				
SEMESTER	1	2	3	4	5	6	7	8	NUMBER OF CREDITS PER AREA	NUMBER OF CREDITS PER AREA	
THESIS RESEARCH							RSCH. METHODS IN ECO. DESIGN	THESIS PROJECT COMPLETION	8	16	
									8		
BRANDING, MANAGEMENT & PORTFOLIO							INTERNSHIP		6	10	
						PROFAL. PORTFOLIO & PRE. TECHNIQUES			2		
THINKING IN SYSTEMS					PROF. ENGLISH IN ECO DESIGN			ECO-URBAN DESIGN	2	8	
						ECO-MOBILITY			2		
STRUCTURES & ECOSYSTEMS					ECO-LANDSCAPE DESIGN				2	8	
				HUMAN FACTORS IN ENVL. DESIGN					2		
VISUAL NARRATIVES						ECO-INFRAST. IN RURAL & URB. CONTEXTS			2	4	
				LOW-CARBON ARCHITECTURE					2		
HISTORICAL THINKING					ECO-CONSTRUCTION & BLDNG. MATERIALS				2	4	
			ECO-SYSTEMS PRINCIPLES	VISUAL REPRESENTATION II					2		
ECO-STUDIO PROJECTS				VISUAL REPRESENTATION I					2	50	
				THEORY AND HISTORY OF ARCH. & CITIES					2		
EAD MASTERS LECTURES & VERTICAL WORKSHOPS				THEORY AND HISTORY OF ARCH					2	4	
			FIELDTRIP 1	FIELDTRIP 2	FIELDTRIP 3	FIELDTRIP 4	FIELDTRIP 5				
EAD MASTERS LECTURES & VERTICAL WORKSHOPS		EAD EXPERIENCE PROJECT Eco-Flower	ECO-STUDIO I: Eco-Room & Eco-Apartment	ECO-STUDIO II: Eco-House & Eco-Village	ECO-STUDIO III: Eco-Apt Building & Eco-Public Bldg	ECO-STUDIO IV: Ecological Neighborhood	ECO-STUDIO V: Ecological Restoration & Public Space		50	50	
			Form, Function & Emotion WORKSHOP	Learning and Designing with Nature WORKSHOP	Augmented Reality & Ecological Architecture WORKSHOP	Sustainable Cities & Ecological Design WORKSHOP			4	4	

Courses:

- 1) Ecological Studio VII-
*Ecological Restoration &
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- 3) Ecological
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- 5) Thesis Project
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STRUCTURES & ECOSYSTEMS

The goal of this module is to study and apply structural solutions in the built environment. The courses are focused -but not limited- on the impact of ecosystem services such as water, wind, gravity, and sunlight in the shape of architectural objects. The themes are designed to develop a systematic knowledge of the properties of low-impact construction materials and energy-efficient tectonic envelopes. Special attention will be put on the study of structural characteristics found in natural systems, chemistry and biology

CONSTRUCTION METHODS

4 COURSES

8 Credits



Courses:

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Public Space*,
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THINKING IN SYSTEMS

Ecological architecture and sustainable development are the result of collaborative solutions. The themes covered in this module include principles of landscape design, urban mobility, ergonometrics, environmental psychology, and urban studies. Cross-disciplinary collaborations are the base for a future-oriented sustainable design in China and the world

INTERDISCIPLINARITY

4 COURSES

8 Credits



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HISTORICAL THINKING

The mission of this module is to explore the correlation of historical thinking and its influence on ecological architecture. Course materials examine the diversity of architectural styles as a response to culture, politics, economy, and geographical location. East-West-South-North architectural styles are introduced and analyzed in these courses, from prehistory through the 21st Century

THEORY AND HISTORY

2 COURSES

4 Credits



Courses:

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VISUAL NARRATIVES

The module concentrates on the visual explanation of ideas and ecological concepts in architectural design. These courses are designed to apply software and visualization techniques that challenge the conventions of representation and architectural drawing. In addition, Performance Arts (theater, dance) will be incorporated to the methods of visual communication of architectural projects

VISUAL REPRESENTATION

2 COURSES

4 Credits



Courses:

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Completion

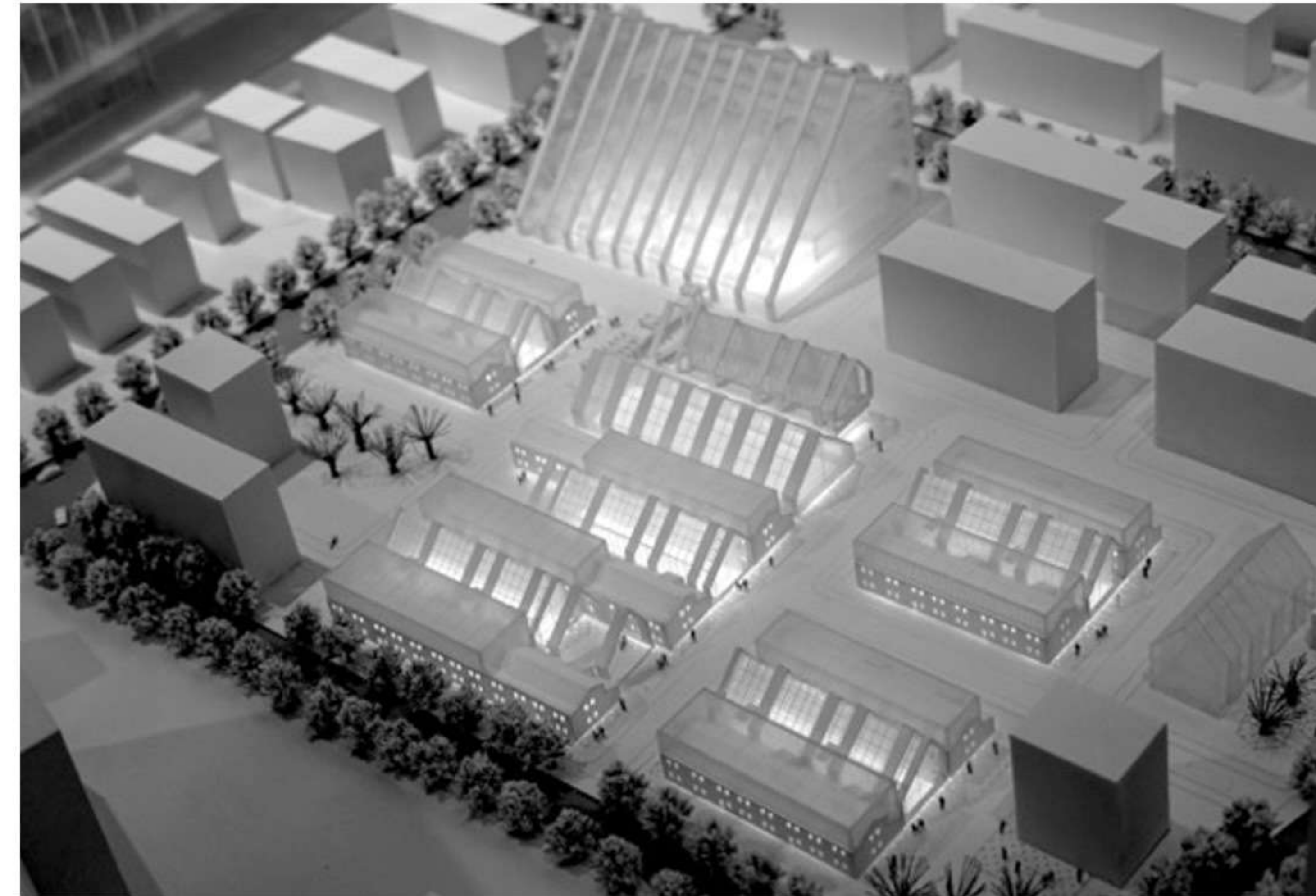
BRANDING, MANAGEMENT & PORTFOLIO

These three courses provide students with the knowledge and judgment needed to fit an architect for her/his professional experiences. To understand how an office organization and a design project are managed

PROFESSIONAL PRACTICE

3 COURSES

10 Credits



Courses:

- 1) Ecological Studio VII-
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Completion

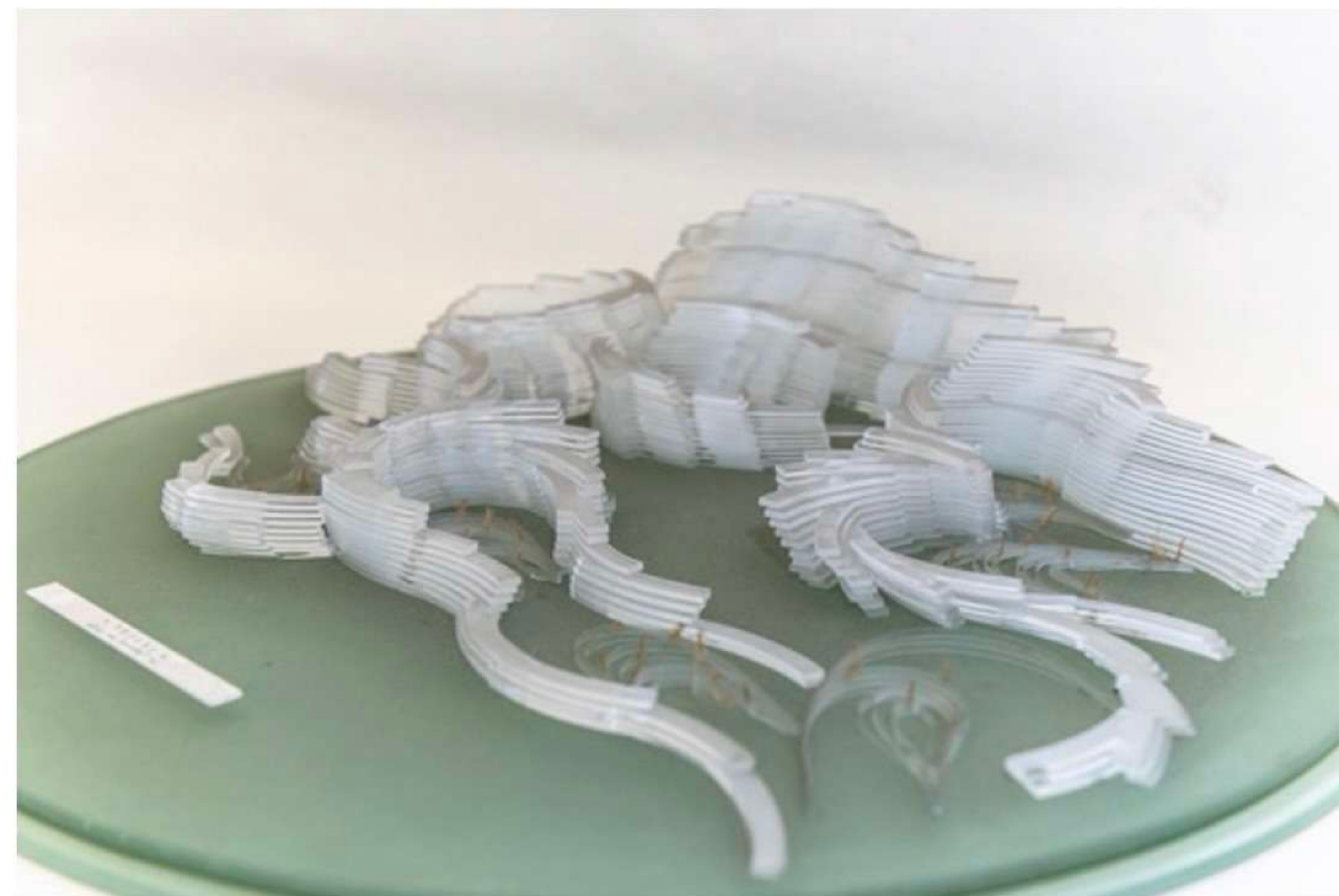
THEMATIC WORKSHOPS

The aim of this module is to encourage dialogues and reflection around contemporary challenges in ecological design. Students work with DETAO Masters, guest lecturers or select faculty on specific topics in architecture. The outcomes from students reflect different approaches to form, technique, material, politics, the environment, history, and are intended to explore future scenarios, anticipating creative and sustainable solutions whatever challenges may arise

INTERNATIONAL WORKSHOPS

4 WORKSHOPS

4 Credits



Shanghai Institute of
Visual Arts

China
2017-2021

Senior Lecturer

Academic coordinator

Courses:

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*Ecological Restoration &
Public Space,*
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DESIGN STUDIO LABORATORIES

The mission of the Eco-Design Studios is to practice the learning outcomes of the EAD curriculum into architectural projects. Each exercise responds to specific contexts and necessities. The location of the projects varies, not only within the city of Shanghai, but also in other cities of China. Particular levels of scale are reviewed throughout the 6 Eco-Studios, among these typologies are small rooms, apartments, residential areas, neighborhoods, public buildings and urban clusters

ECO-STUDIO PROJECTS

6 COURSES

50 Credits



Courses:

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Architecture,
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Infrastructures in Rural &
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Principles
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Completion

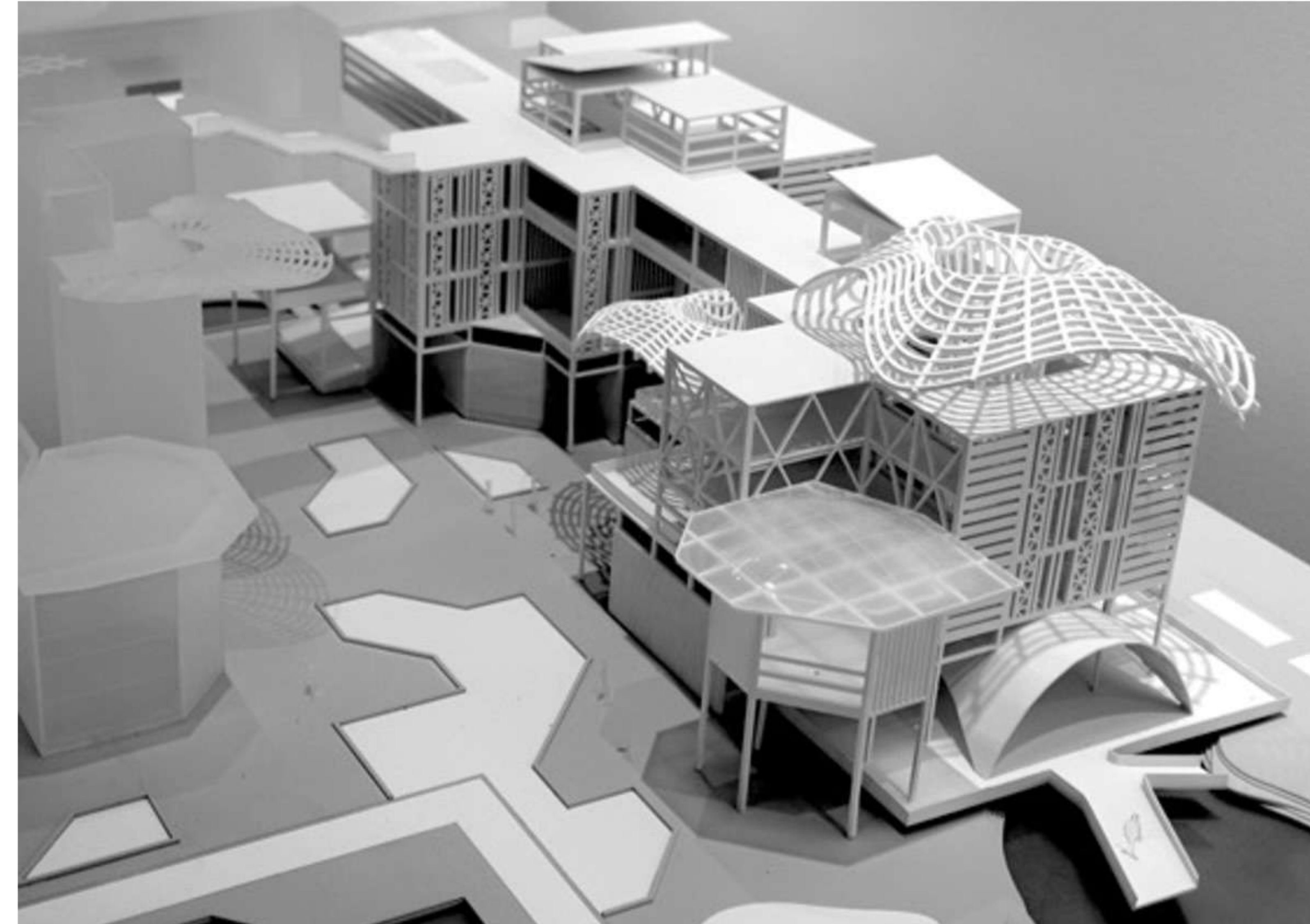
THESIS RESEARCH

The Thesis Project is largely
an independent exercise
allowing the student to
explore her or his specific
research interests. The goal
is to encourage the
development of unique
voices in fields related to
ecological design

THESIS PROJECT

2 COURSES

16 Credits





 DE TAO GROUP		E A D ECOLOGICAL ARCHITECTURE DESIGN					 上海视觉艺术学院 Shanghai Institute of Visual Arts	
Design Criteria and Evaluation of 4th YEAR FINAL THESIS PROJECT								
STUDENT NAME			THESIS TITLE				DATE	
AREA	CRITERIA	FAIL	ADDITIONAL EXAM	BASIC	GOOD	OUTSTANDING	GRADE	REMARKS
		F	D	C	B	A		
1. THESIS GOAL AND DESIGN OPPORTUNITIES 10%	Thesis statemen: WHAT is your Thesis?							
	Thesis question: WHY do you propose this project?							
	Hypothesis: HOW can you help the city-landscape-users with your proposal? What is the contribution to society?							
2: RESEARCH: CONTEXT ANALYSIS_LITERATURE REVIEW_SUMMARY OF INTERVIEWS 25%	Explanation of the context: WHERE IS IT?							
	WHO are the users/clients/citizens of your project							
	Literature review using a range of sources							
	Summary of the interviews with experts							
3: ENVIRONMENTAL AND ECOLOGICAL SYSTEMS 25%	Does the energy concept of the project consider the flows of water, sun light, wind, waste, and proper orientation?							
	Relationship with landscape_topography, bodies of water_existing vegetation_urban structure							
	Use of low-impact contruction materials and structures							
	Sustainable technologies and strategies to provide city-landscape with energy-efficient architectural spaces							
4: ECOLOGICAL ARCHITECTURE AND URBAN DESIGN 30%	Overall function of proposal_How efficient is configuration of the spaces? Do the spaces work together in harmony?							
	Architectural program_study of areas in m2, proportions, heights, atmospheres, Do the spaces offer solutions to the initial problem of the city or landscape?							
	Innovative vision and creativity in the proposal of sustainable spaces							
	Does the design include an interpretation of Chinese culture and heritage							
5: PRESENTATION 10%	Digital Presentation: Including videos and animations							
	Composition of minimum one A0 panel: including plans/sections/facades/sketches							
	Models: Quality of Physical Model and 3D renders (computer aid or hand-drawn)							
	Official Word document for SIVA-DETAO							
Student comments								
Student Problems								
Student Achievements								
Evaluation of Teachers								
Teacher name and signature								

Design Criteria and Evaluation of 4th YEAR FINAL THESIS PROJECT										
Design Criteria and Evaluation of 4th YEAR FINAL THESIS PROJECT										
NAME	TASK	PANELS	CRITERIA	FAIL 40	ADDITIONAL EXAM 50	BASIC 60	GOOD 80	OUTSTANDING 100	Evaluation	
	FINAL SUBMISSION NOV 4th 2019 50%	PANEL 1 A1 (60 cm by 90 cm)	USE OF THE 12 VARIABLES OF SUSTAINABLE URBAN ANALYSIS (7D's and 5 urban atmospheres)				/	/	90	
NAME OF STUDENT				Masterplan integration with the other teammates' projects				/	/	90
				Use of low-impact construction materials and sustainable technologies (reviewed in class)				/	/	90
				Who are the users? Characteristics of the citizens that will use your spaces. How many? Why?				/	/	90
		PANEL 2 A1 (60 cm by 90 cm)	ARCHITECTURAL PROGRAM (number of activities, how many m2 per activity, how many people per space)				/		100	
			ARCHITECTURAL DETAIL OF FACADES (materials, shading, windows)				/	/	90	
			ARCHITECTURAL DETAIL OF PLANS (dimensions, areas, roofs)				/	/	90	
			ARCHITECTURAL DETAIL OF SECTIONS (internal arrangements, heights, structure)				/	/	90	
			CONSTRUCTION CRITERIA (columns, beams, floors, stairs, elevators)				/		100	
Physical MODEL scale 1:75		ARCHITECTURAL DETAIL IN THE PHYSICAL MODEL OF THE BUILDING (windows, facades, construction materials, doors, roofs)				/		100		
	Surrounding context (existing buildings, streets, rivers and landscape)				/		100			
									93.64	
COMMENTS: The project considers a careful analysis of the context and the natural environment. The architectural program was carefully translated into architectural spaces. The representation of the project is very efficient in terms of drawings, plans, sections and physical model. The integration of algae cultivation into the facade is smart. It demonstrates an ecological understanding of public space										



Shanghai Institute of
Visual Arts

China
2017-2021

Senior Lecturer

Academic coordinator

- Courses:
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 - 4) Thesis Project Principles
 - 5) Thesis Project Completion

DE TAO GROUP E A D 上海视觉艺术学院 Shanghai Institute of Visual Arts					
Thesis Project Principles					
Responsible Master	Professor Haim Dotan_Professor J Alexander Schmidt				
Course leader	Dr Ernesto Valero Thomas				
Workload	Workload: 144 hours	Credits: 8	Theory: 144 hours	Practical: 0 hours	Semester 7
Prerequisites	All Projects and Seminars				
CONTENT	Working with the advisors the student will develop a Thesis Proposal, a concise and specific statement, outlining an area of study, or a design problem that has consequences for contemporary architectural production. Students are encouraged to work with their advisors to identify a category, precedents, and potential sites to be further explored. This will be the basis of further independent investigation as part of the Thesis Research and the basis of the Thesis Studio. Identification of the Thesis category at this early stage is only preliminary and is not intended to be limited or determinative Working with the advisors the student will develop a Thesis Proposal, a concise and specific statement, outlining an area of study, or a design problem that has consequences for contemporary architectural production. Students are encouraged to work with their advisors to identify a category, precedents, and potential sites to be further explored. This will be the basis of further independent investigation as part of the Thesis Research and the basis of the Thesis Studio. Identification of the Thesis category at this early stage is only preliminary and is not intended to be limited or determinative				
LEARNING OUTCOMES	LO 1 A Thesis should include research, program analysis and development, site analysis and selection, preliminary and schematic design as its basic scope.				
	LO 2 The Thesis is largely an independent exercise allowing the student to explore his or her specific interests and to develop a unique voice				
	LO 3 The goal of the Thesis Studio is a demonstration of the student's ability to apply critical thinking and design research skills to the development of an ecological design solution that moves through conceptual, schematic, development and technical stages of the application of the proposal. This application may take the form of a building, urban or site response, product, or other, and it is specified on the agreement of the Thesis Adviser and Student				
	LO 4 The goal of Thesis Project Principles is the Thesis Program. It serves as the intellectual grounding of the work done in the Thesis Studio. Working from theory, humanities, history, cultural criticism, philosophy, music, art, etc., the successful thesis Program should challenge us to question our convictions about ecological architectural design and/or their related fields				
Evaluation	Project report with a comprehensive Thesis Topic, Description, and Research Schedule for the course Thesis Project completion				
Instruction and Learning Methods	studio work, desk critique, team and individual work				
Course Material, Reading	https://living-future.org/				
	http://www.breeam.com				
	https://new.usgbc.org/leed				
	http://www.ibec.or.jp/CASBEE/english/index.htm				
	http://www.athenasmi.org/				
	Edinburgh Architecture Research Journal (2013) Methodologies for Sustainable Projects, BK, Satish, Salome, Sally (Eds.) https://sites.eca.ed.ac.uk/ear/33-2013/				
	http://www.drawdown.org/				
Muller, Brook. 2014. Ecology and the Architectural Imagination. New York, Routledge					

Teaching Management

教学管理

SEMESTER SCHEDULE					
WEEK	TOPIC OF LECTURE, WORKSHOP, EXERCISE	Date	Lecturer	Place	Time
WEEK 1	Introduction to the Seminars_Opening Lecture and Introduction to Workshops	Monday, September 2nd	Dr Thomas	Lecture Room_Big Eye	9:00 AM - 11:30 AM
WEEK 2	Playing with Words: Connecting Early Concepts in the Research Process	Wednesday, September 11th	EAD Studio	Lecture Room_Big Eye	9:00 AM - 11:30 AM
WEEK 3	Narratives in the Research Process	Wednesday, September 18th	TED Studio	Lecture Room_Big Eye	9:00 AM - 11:30 AM
WEEK 4	Diagrammatic Thinking	Wednesday, September 25th	Tecnoetics Studio	Lecture Room_Big Eye	9:00 AM - 11:30 AM
WEEK 5	NATIONAL HOLIDAYS	No Class			
WEEK 6	Cross-Disciplinary Thinking & Documentation	Tuesday, October 9th	EAD, TED, Tecnoetics	Lecture Room_Big Eye	9:00 AM - 11:30 AM
WEEK 7	Documenting Words, Diagrams & Narratives	Tuesday, October 16th	EAD, TED, Tecnoetics	Lecture Room_Big Eye	9:00 AM - 11:30 AM
WEEK 8	FINAL PROPOSAL PREPARATION & SUBMISSION				
WEEK 9					
WEEK 10					
WEEK 11	LITERATURE REVIEW_CITY_selected texts_READING_SUMMARY_CITATIONS				
WEEK 12	LITERATURE REVIEW_ENERGY_selected texts_READING_SUMMARY_CITATIONS				
WEEK 13	LITERATURE REVIEW_MATERIALS_SELECTED TEXTS_submission				
WEEK 14	ARCHITECTURAL PROGRAM REVIEW				
WEEK 15	FINAL ARCHITECTURAL PROGRAM FOR DESIGN INNOVATION_The final conclusion of the program is based on FIVE 'W' QUESTIONS: What, Where, When, Why, Who+one 'H' QUESTION: How_SUBMISSION				
WEEK 16	ENERGY CONCEPT_The student should answer if the energy concept of the proposal considers carefully the flows of water, sun, light, wind, waste, and proper orientation_SUBMISSION				
WEEK 17	FIELDTRIP DATA REVIEW_Review of all of the five materials of fieldtrip, including video documentary and three interviews with experts_SUBMISSION				
WEEK 18	FINAL REFLECTION OF THE COURSE				
WEEK 19					



National Autonomous University of Mexico
School of Architecture Mexico

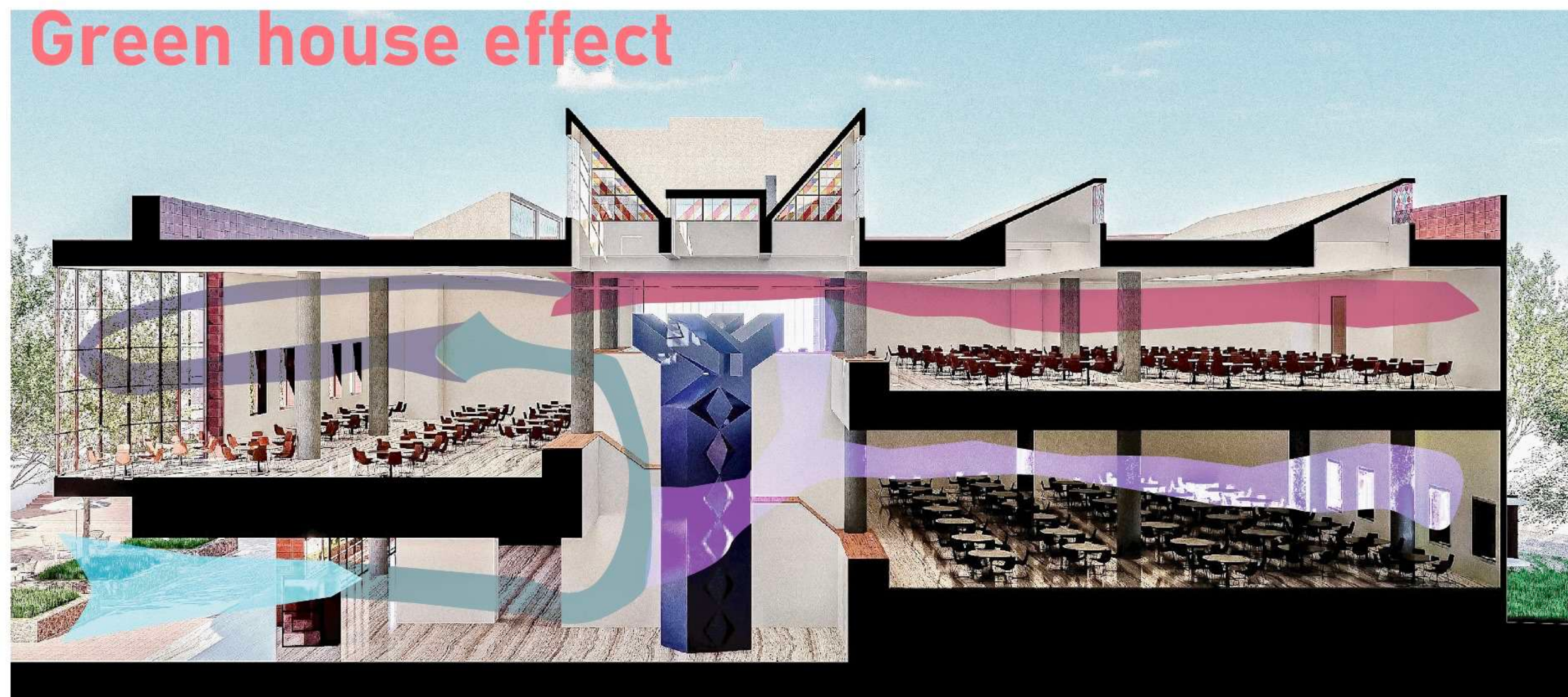
Sustainable Infrastructures Initiative
2021-2025

Senior Researcher

Manager

1) Development of the sustainability policies at UNAM's School of Architecture in Ciudad Universitaria in Mexico City (UNESCO's protected campus) with research and interventions that consider energy efficiency, water governance, waste management, thermal comfort and accessibility for all.

In 2023, the School of Engineering at the National Autonomous University of Mexico approached the School of Architecture. The purpose was to ask for our consulting services regarding a series of problems in the main library called Enrique Rivero Borrell. Located in Mexico City and built in 1996, the library presented overheating problems, lack of ventilation, carbon dioxide concentration, and intense solar radiation transmission. These challenges were presented to us as 'the library is too hot for most of the year', 'it is impossible to tolerate the heat without fans', and 'students get sleepy, particularly during the exams period in May and November'.





National Autonomous University of Mexico
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2021-2025

Senior Researcher

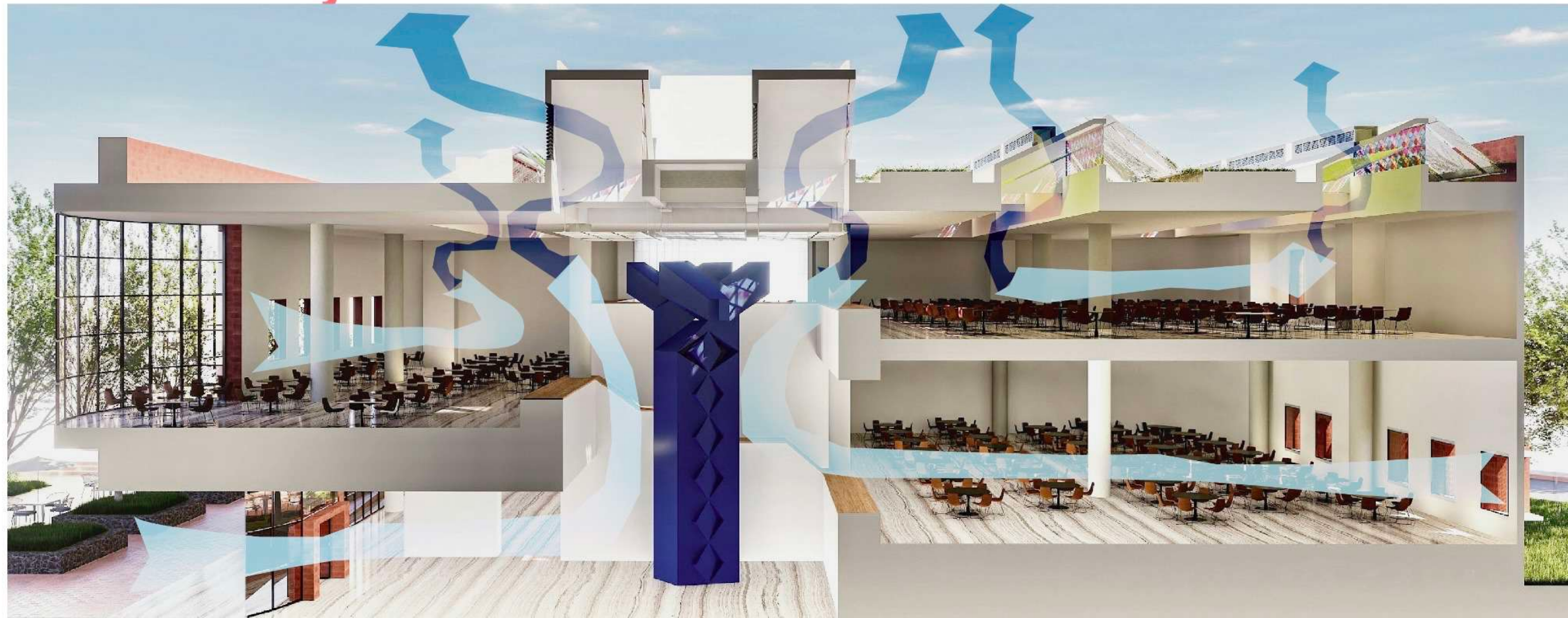
Manager

1) Development of the sustainability policies at UNAM's School of Architecture in Ciudad Universitaria in Mexico City (UNESCO's protected campus) with research and interventions that consider energy efficiency, water governance, waste management, thermal comfort and accessibility for all.

Thus, the main task of the Sustainable Infrastructures team was listing a series of challenges and metrics that the users could easily identify and relate. We monitored variables such as humidity, internal temperature, and carbon dioxide levels. Considering the results, we proposed key sustainable strategies for the sustainable rehabilitation of the main library of UNAM's School of Engineering. These were:

1. Strategies for natural ventilation with the intervention of existing windows
2. Strategies for the mitigation of solar radiation via light green roofs and waterproofing coatings of the main roof with a white layer
3. Openings in the existing skylight structures located on the roof

Chimney effect





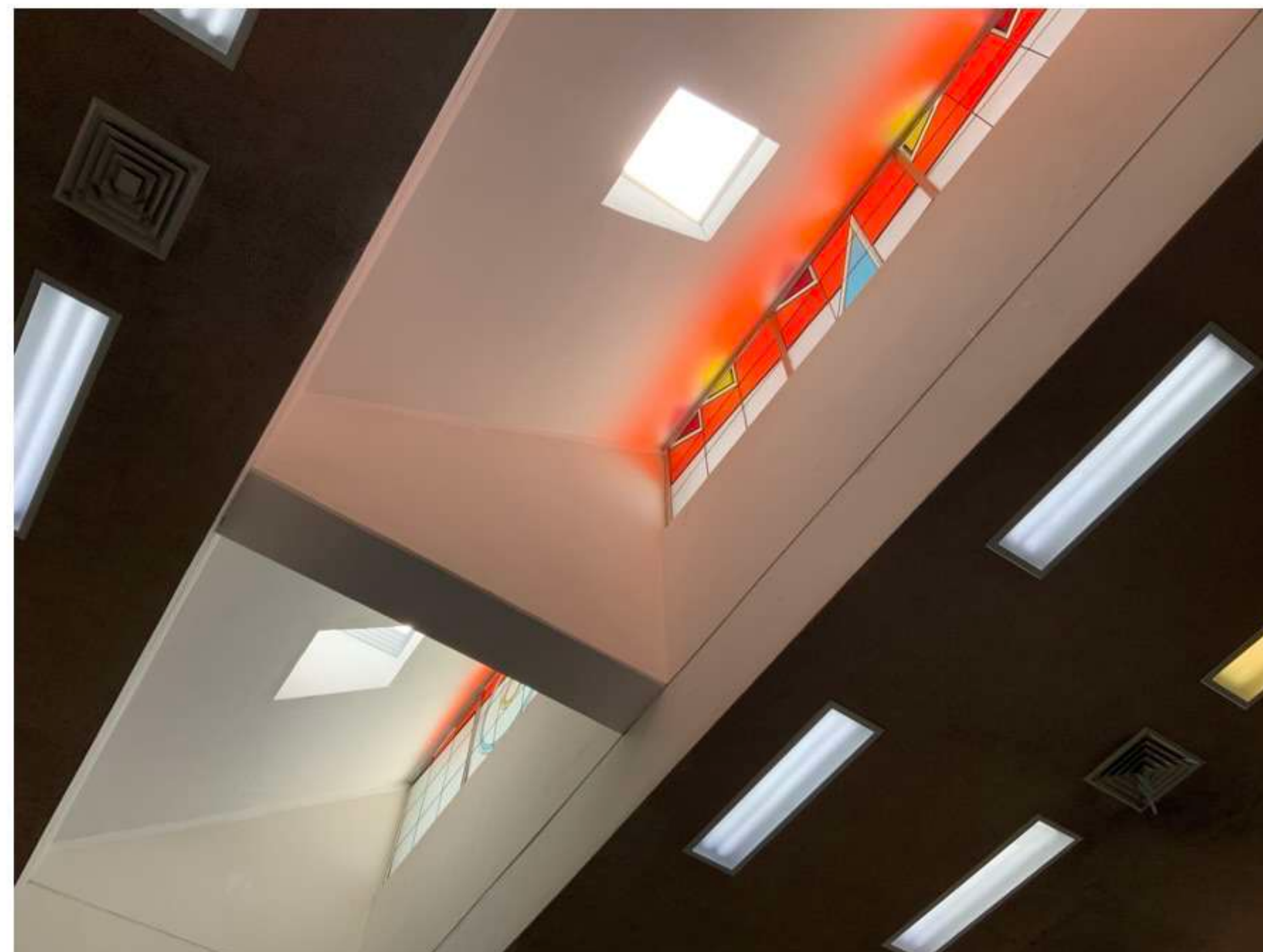
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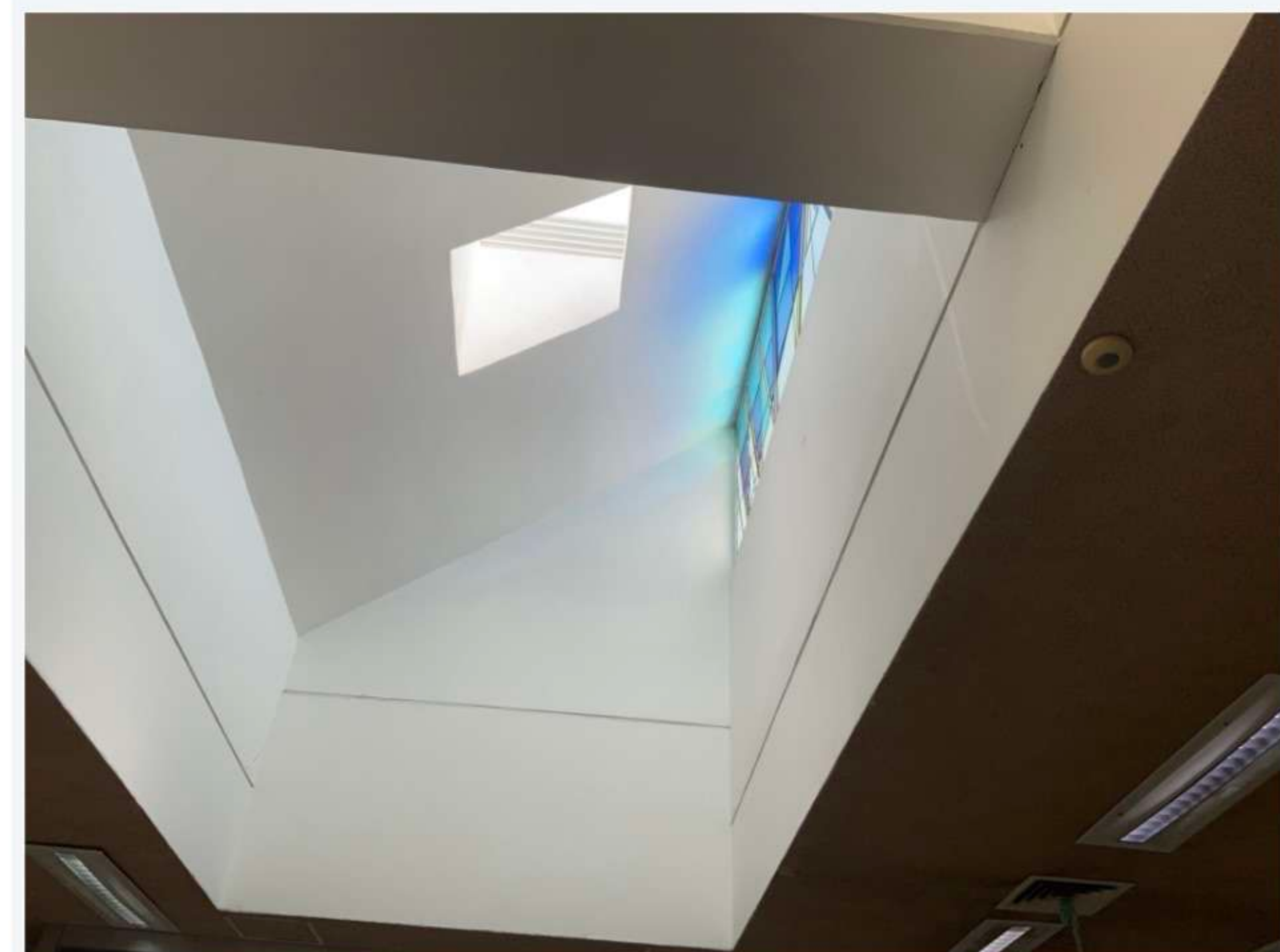
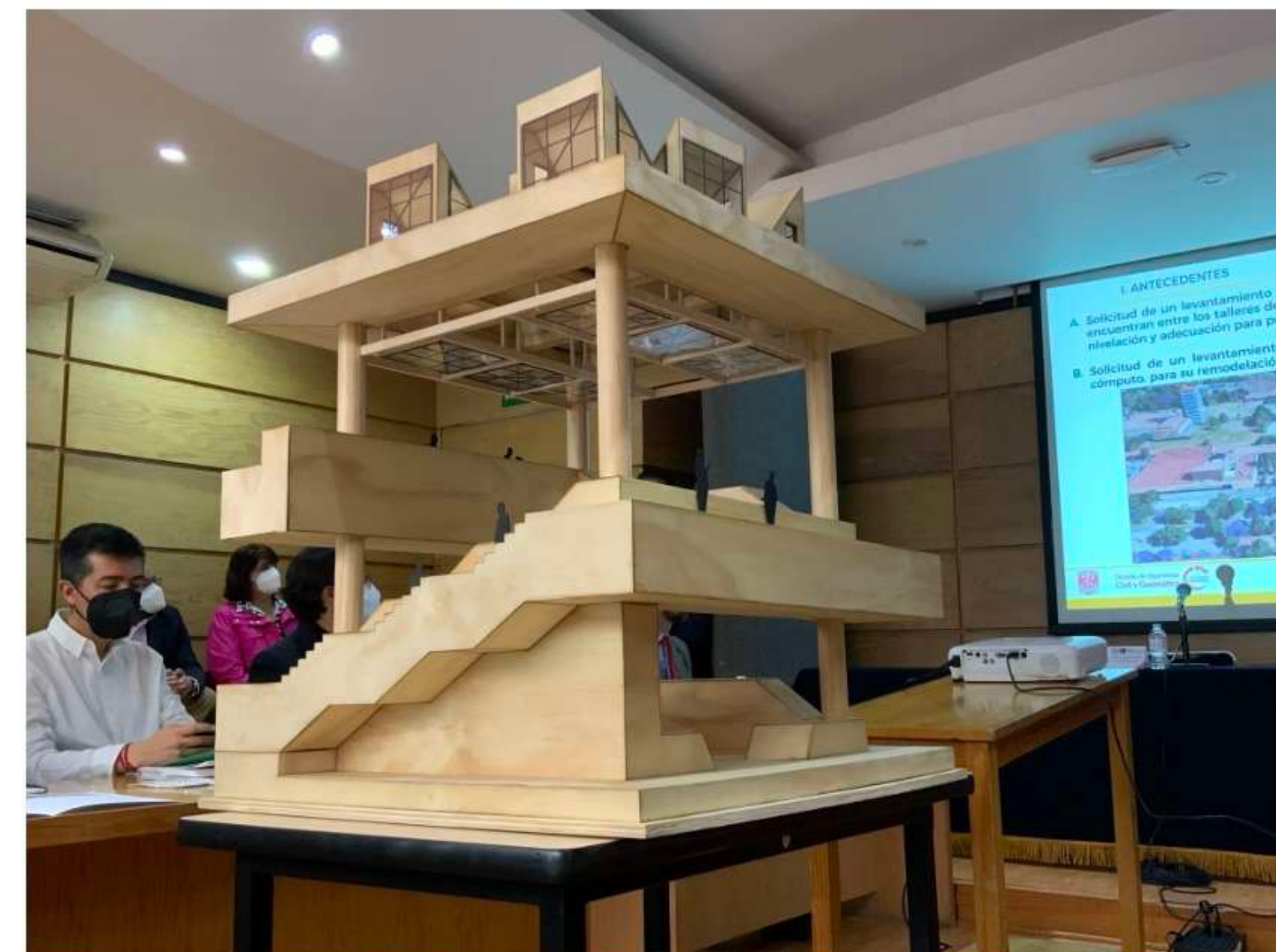
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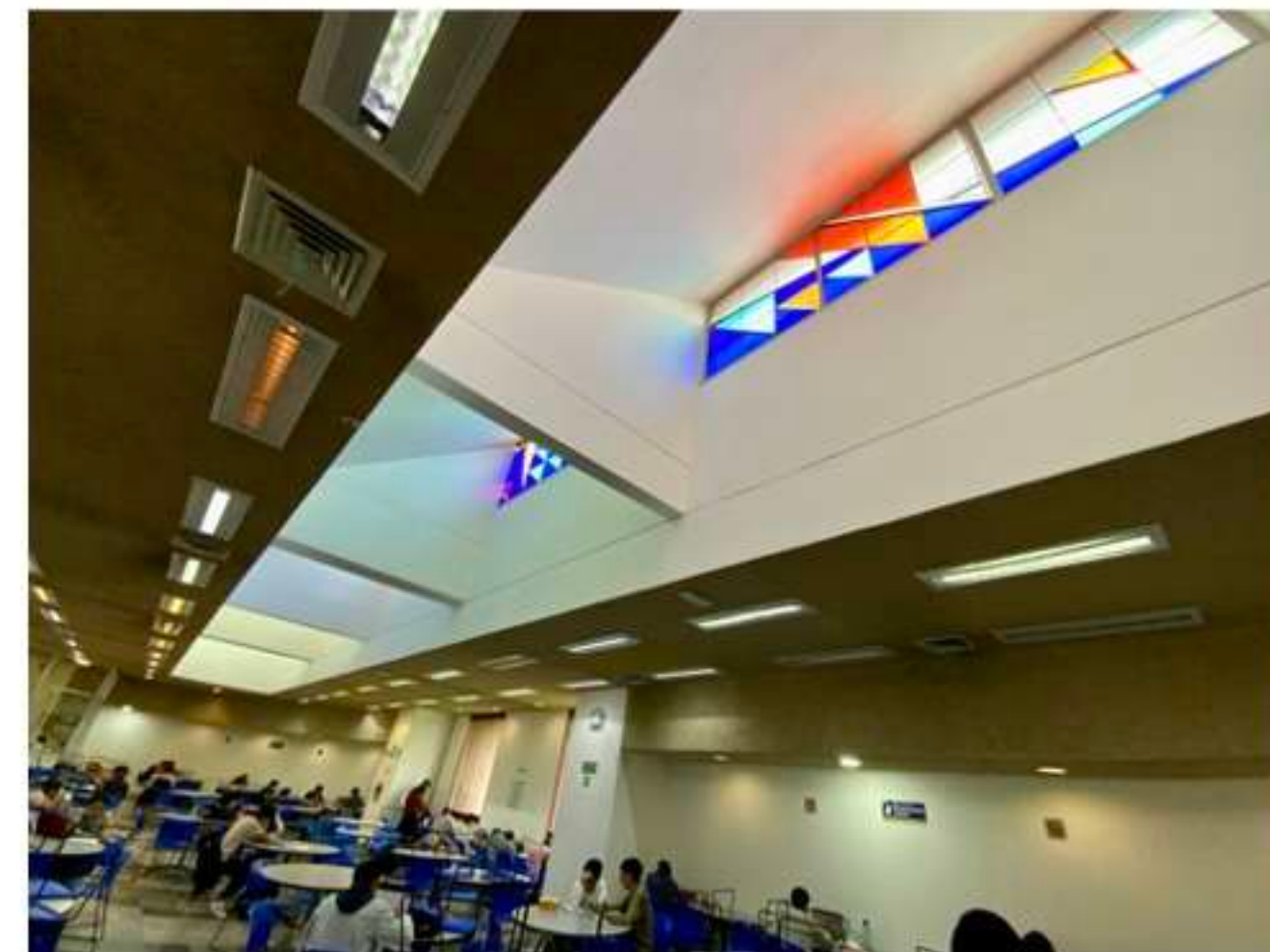
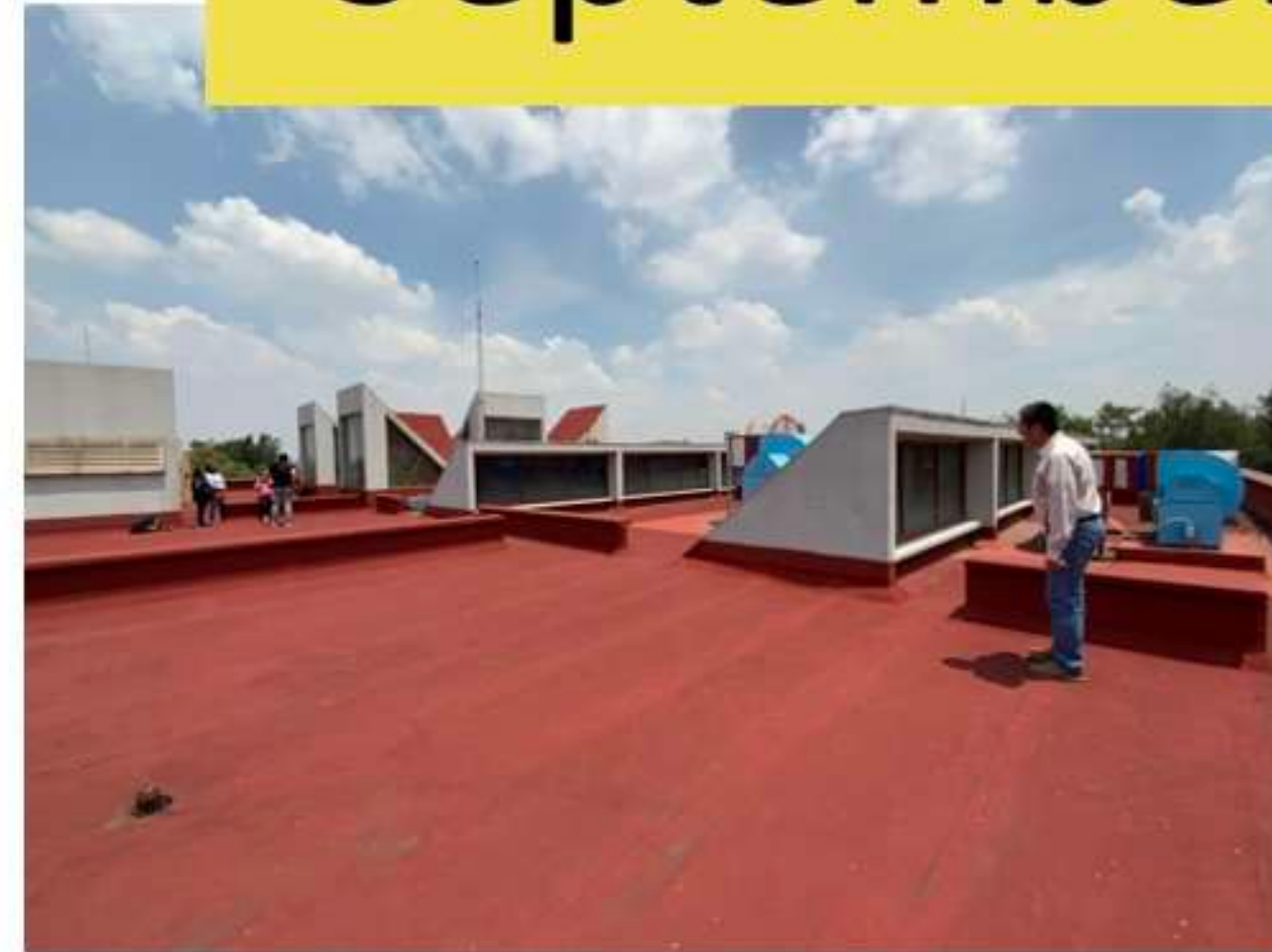
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The project respects the existing conditions and geometries of the building, particularly in the facades and the main roof. Through the monitoring and evaluation of these actions, it was confirmed that the interior temperature had decreased by 2 degrees Celsius and that the relative humidity has been stabilised on all three levels. Due to the results, the School of Law approached the School of Architecture of the UNAM to request a sustainable rehabilitation project for the Alfonso Caso Library.

**BEFORE:
September 2023**



**AFTER:
September 2024**

