PORTFOLIO

Ali Abouzeid

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Selected architecture,
2024—26

ARCHITECTURAL ENGINEERING AND TECHNOLOGY
FACULTY OF ENGINEERING, CAIRO UNIVERSITY

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Fustat Cultural Hub, entrance avenue

ABOUT

I like the moment a drawing becomes something real.

I'm in the final year of Architectural Engineering and Technology at Cairo University.

I grew up around my father's scale-model business, so I learned early to cut, print and assemble what I draw. I design in Revit, and use Grasshopper and scripts when a task repeats.

This book holds nine projects, from an early courtyard school to my graduation project.

STUDYING	Bachelor of Architectural Engineering and Technology, Cairo University, 2021 to present
SOFTWARE	Revit, AutoCAD, Rhino and Grasshopper, SketchUp, Enscape, D5 Render
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01

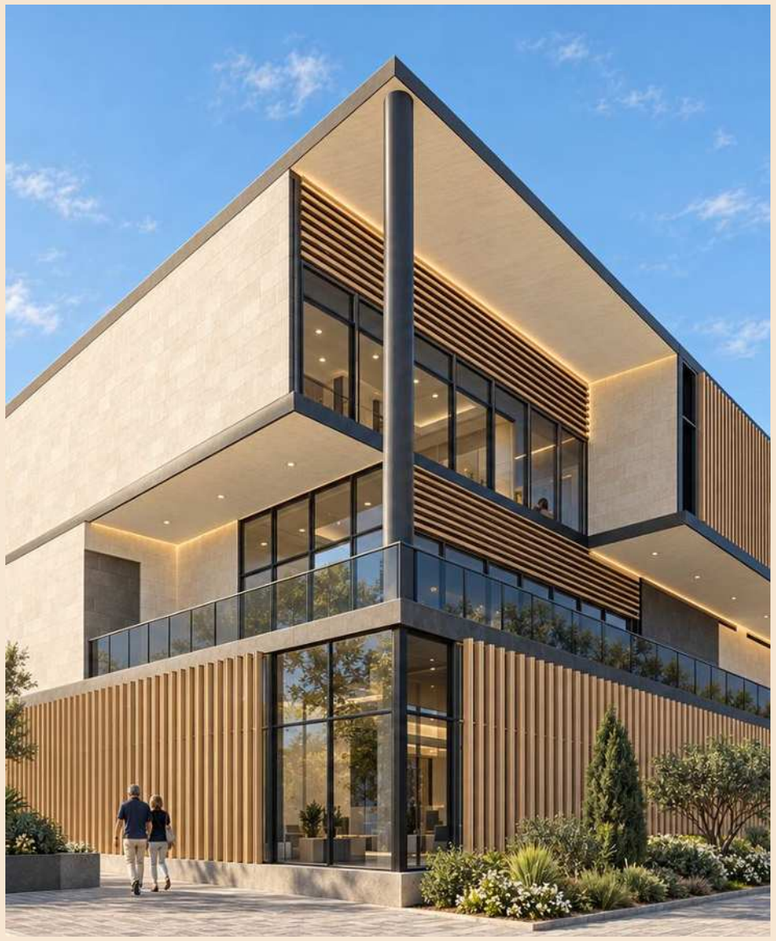
Helwan Cardiac Hospital

A hospital that follows the heart’s rhythm

YEAR	2025
COURSE	Design 5
PLACE	Helwan, Cairo
ROLE	Individual
TOOLS	D5 Render, AutoCAD

A cardiac hospital where diagnosis, surgery and recovery run as one flow. After studying wind, noise, views and access, I used a 3D zoning study to place each department. Clean and dirty corridors run either side of the operating rooms, and courtyards bring light into the wards.

01.01 Aerial view

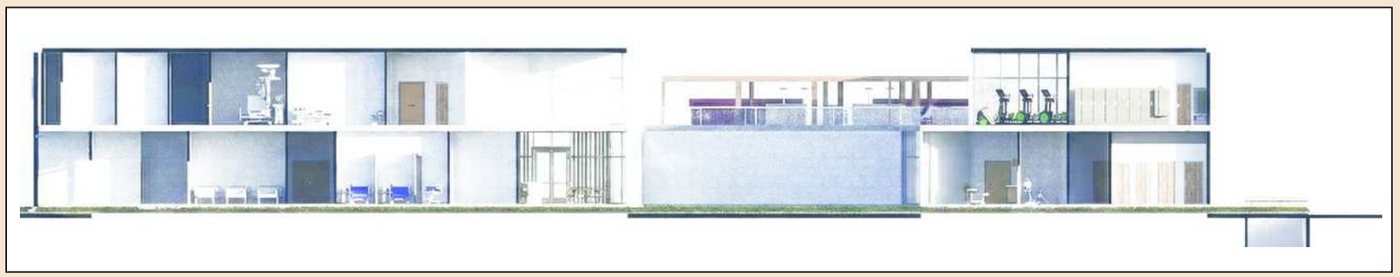


01.04 Corner view

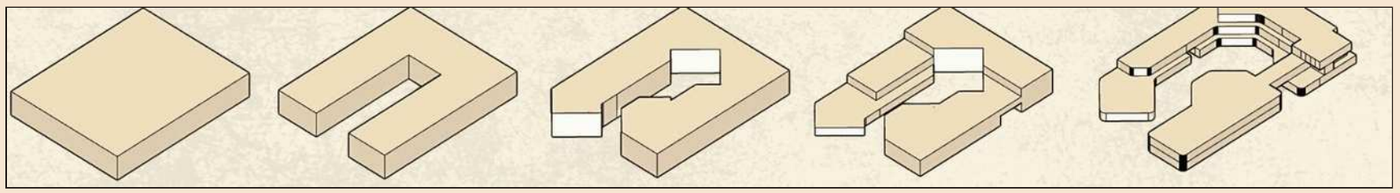
01.02 Site aerial

01.03 Aerial of the courtyard

01.05 Courtyard view

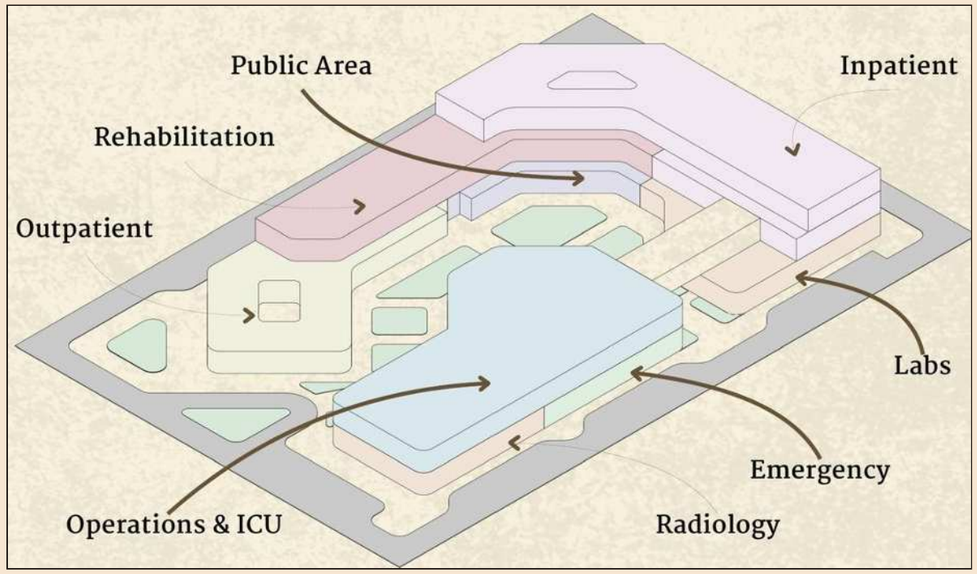


01.06 Section

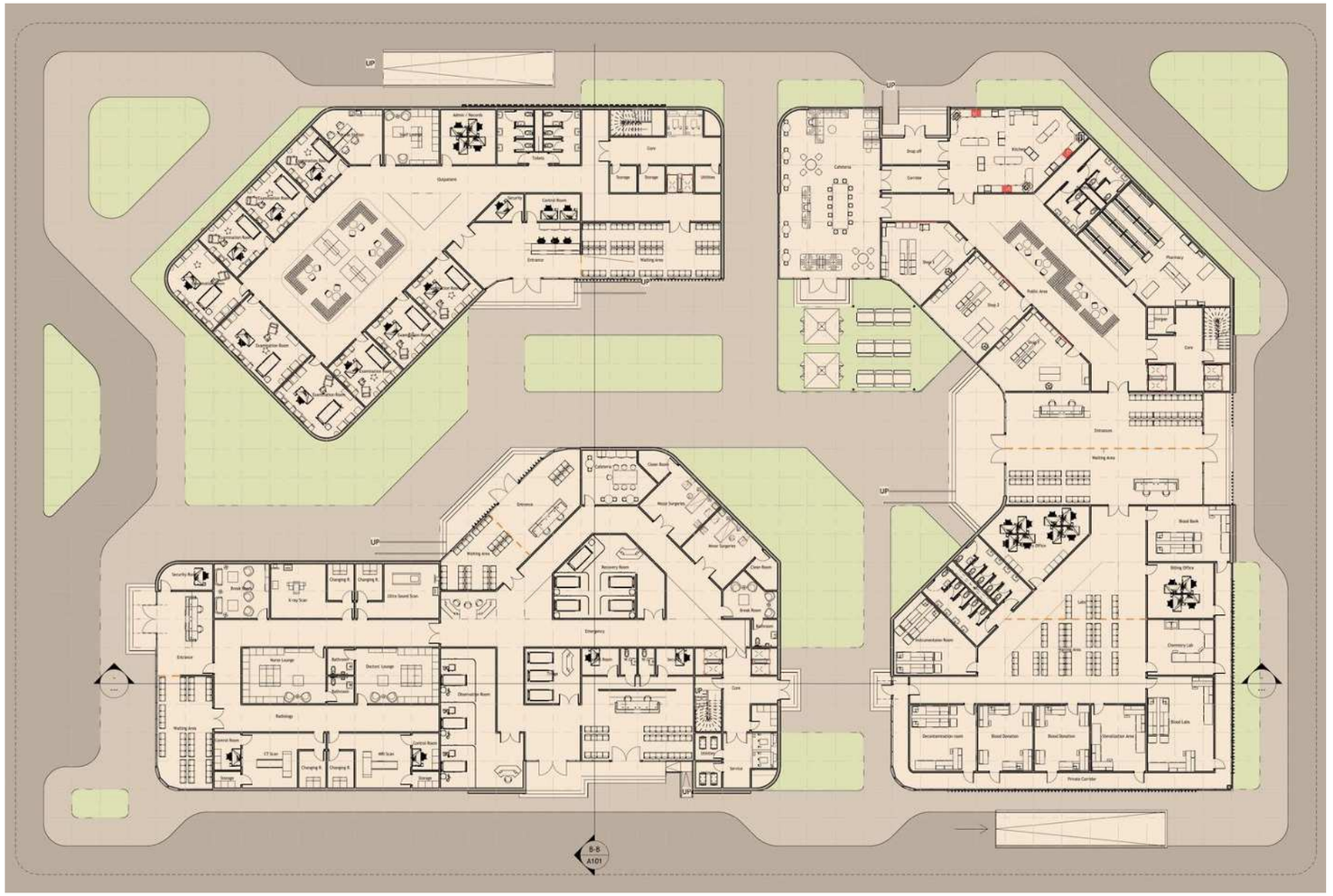


01.07 Form generation

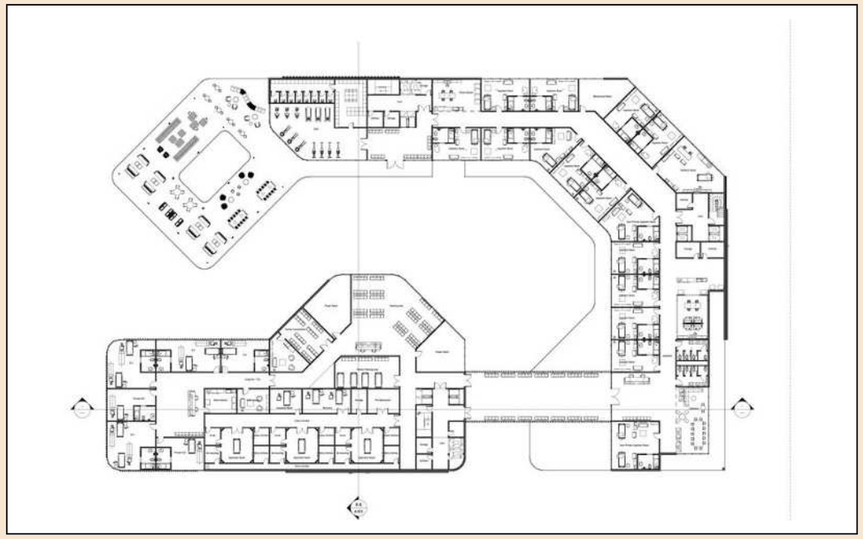
01.08 Site: wind, noise, views



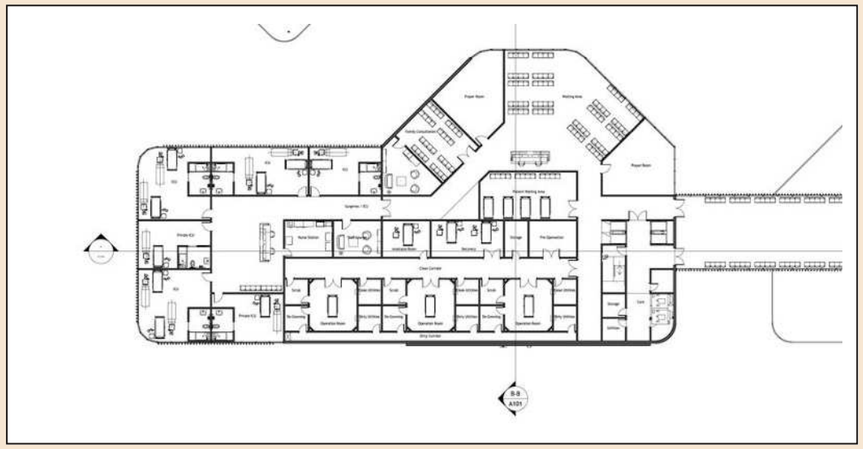
01.09 3D zoning by department



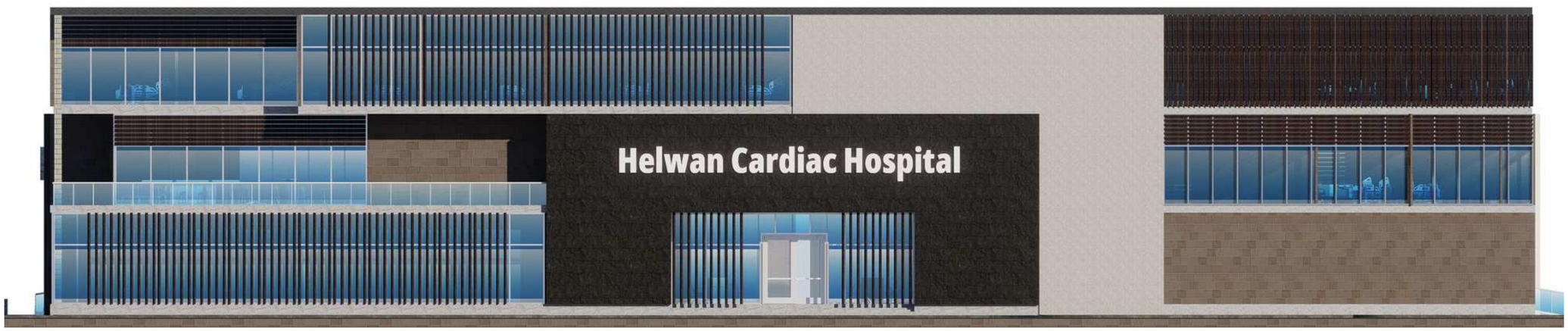
01.10 Ground floor plan



01.11 First floor plan



01.12 Operating zone corridors



01.13 Front elevation

02

Fustat Cultural Hub

A hotel, a visitor centre and a conservation school around shared courtyards

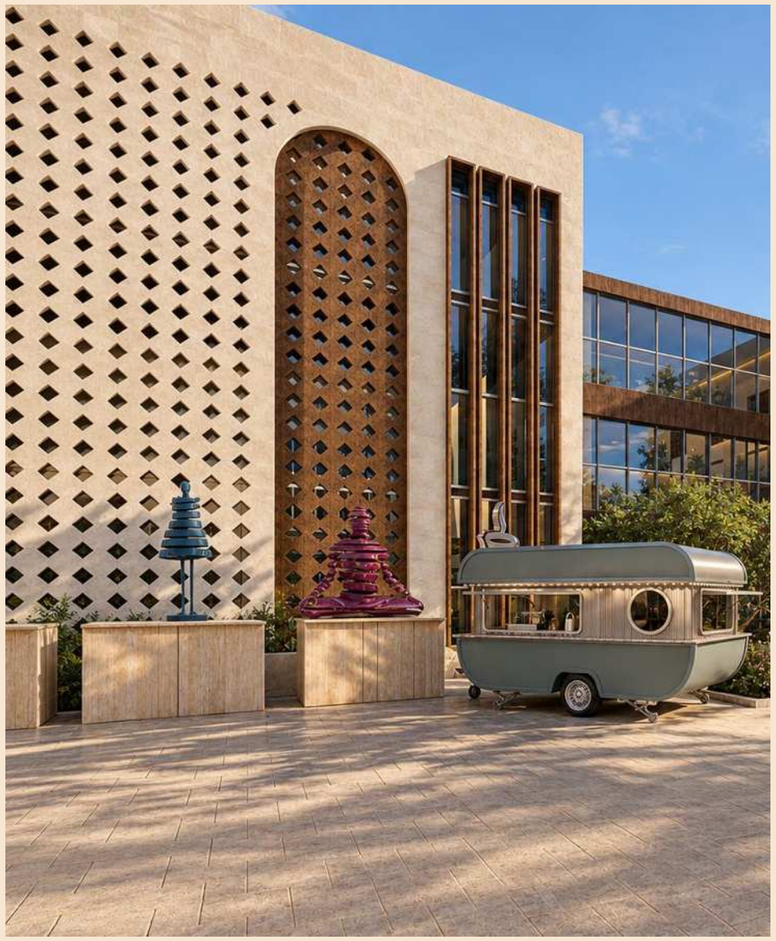
YEAR	2025
COURSE	Design 4
PLACE	Fustat, Old Cairo
ROLE	Conservation school · team of 3
TOOLS	SketchUp, D5 Render

A hotel, a visitor centre and a conservation school share courtyards in Fustat, the oldest part of Cairo. Earthy tones and local craft tie the new buildings to the old district. In the school, workshops, classrooms and labs open onto the courtyard behind a perforated stone screen.

02.01 The school from the courtyard

02.02 Courtyard path and water channel

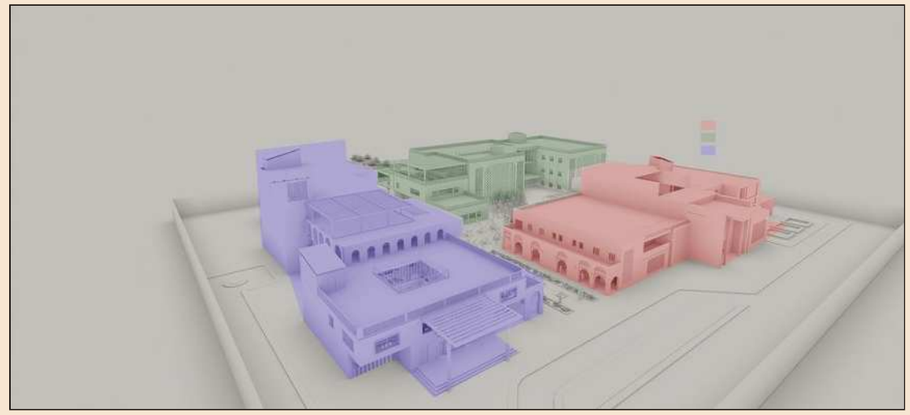
02.03 Street entrance



02.04 School facade, stone screen

02.05 Site layout from above

02.06 The school courtyard

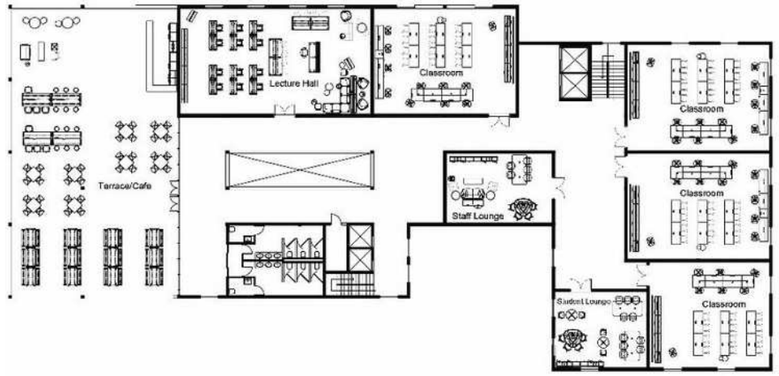


02.07 Hotel Visitor centre School

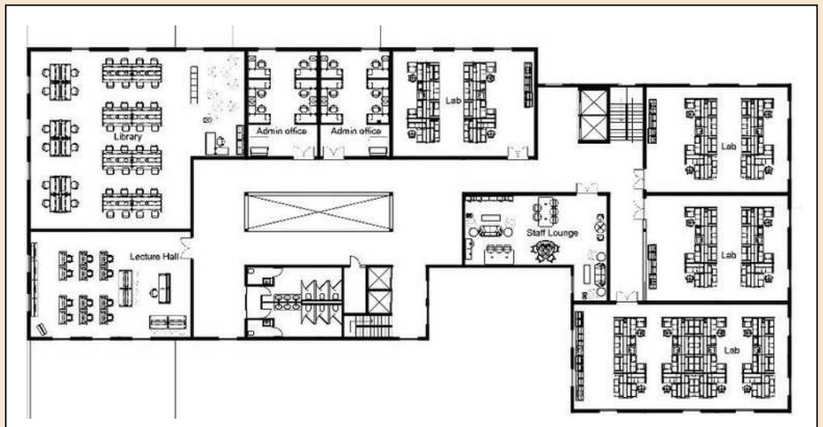
02.08 Site elevation

02.09 Site elevation, other side

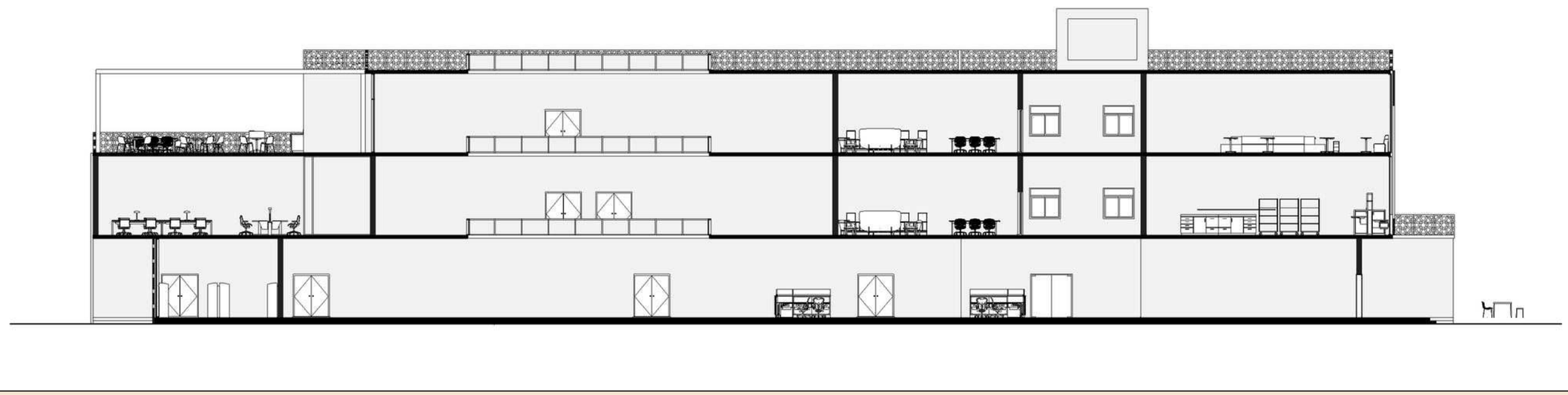
02.10 School ground floor



02.11 First floor



02.12 Second floor



02.13 School section

03

Eco Arts School, Fayoum

A courtyard school for artists, shaped by sun and wind

YEAR	2024
COURSE	Design 2
PLACE	Fayoum
ROLE	Individual
TOOLS	Revit, Enscape

A courtyard school for artists. Studios, classrooms and the library surround one open courtyard, so every room looks onto light and trees. A study of sun, wind and views set the orientation, with passive cooling, native planting and durable materials.

03.04 Site study: sun and wind

03.01 Aerial view of the courtyard

03.02 Aerial view from the road

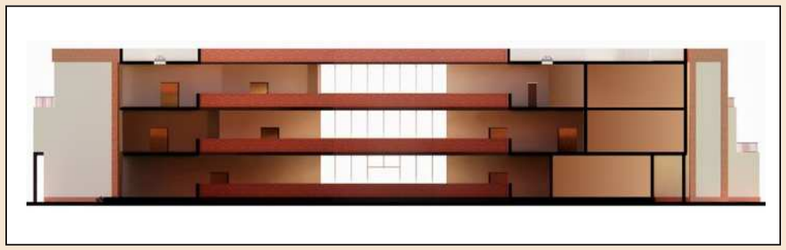
03.03 Courtyard from above

03.05 Entrance front across the lawn

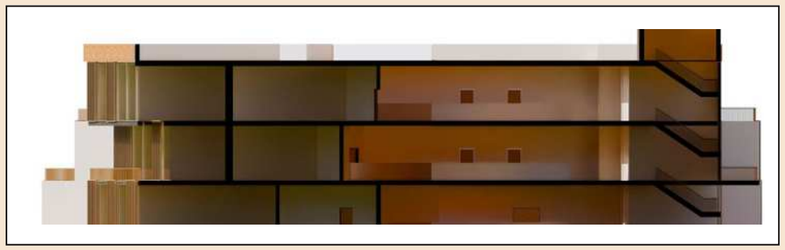
03.06 Front view from the lawn

03.07 Approach from the olive grove

03.08 Layout from above

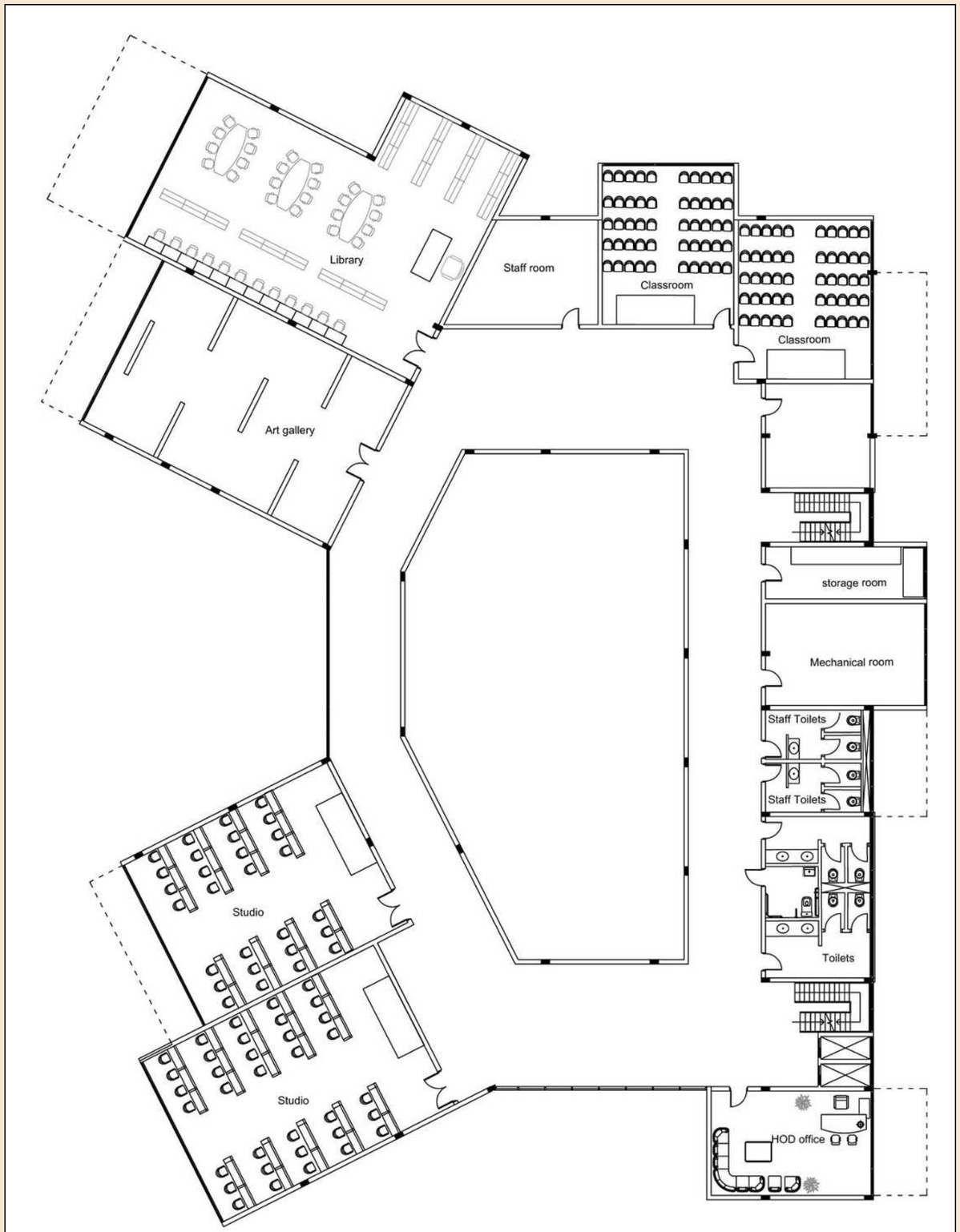


03.09 Section A–A

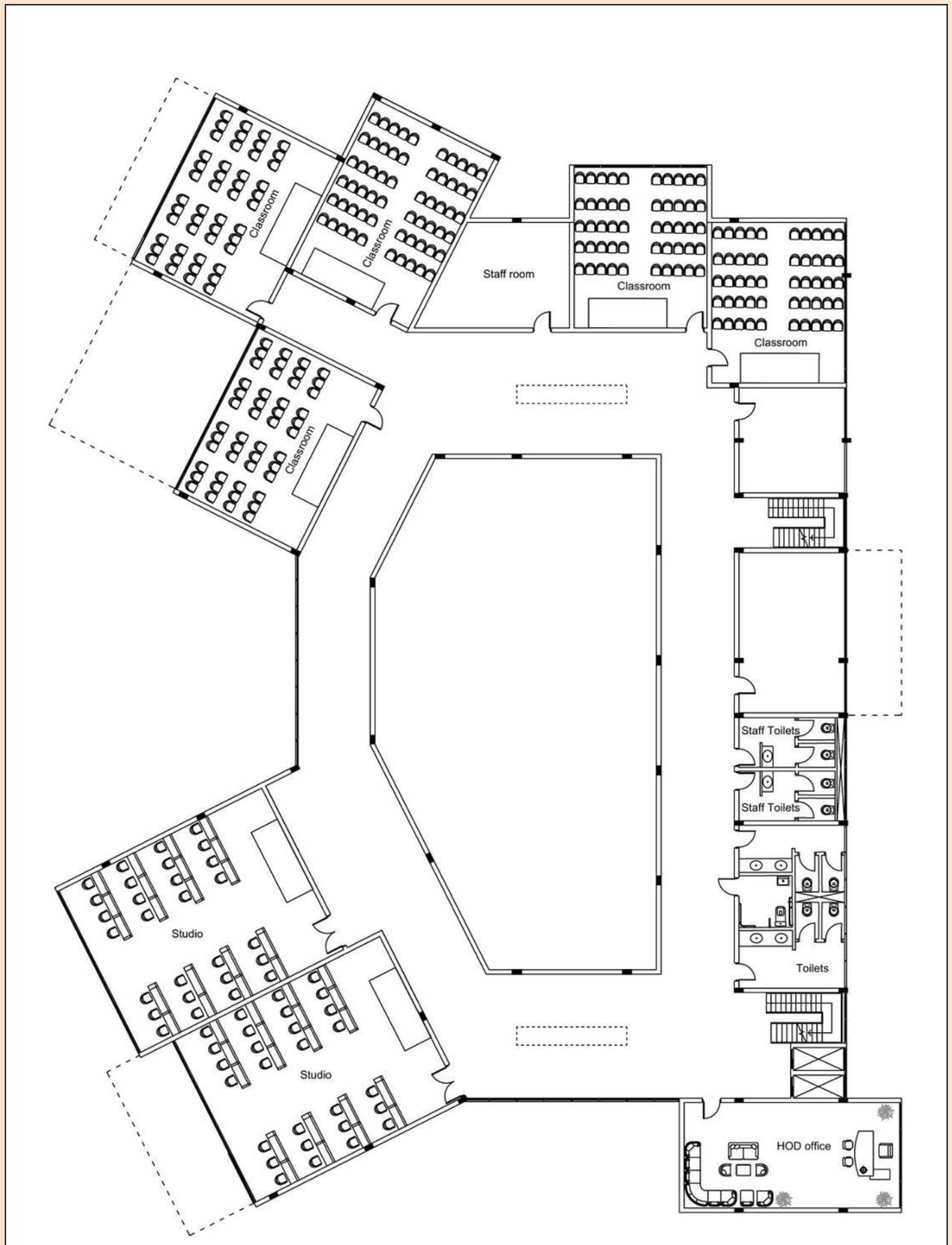


03.10 Section B–B

03.11 Elevation



03.12 First floor plan



03.13 Second floor plan

04

Boutique Office Building

A fractured cube held by trusses

YEAR 2024
COURSE Design 3
ROLE Individual
TOOLS AutoCAD, Enscape

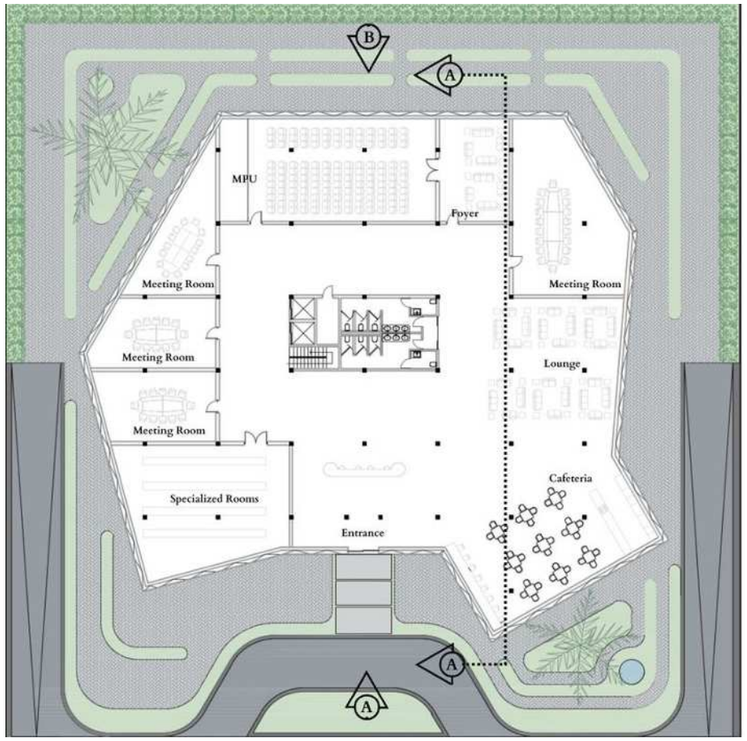
An office cube broken into angular volumes, read as a picture of technology reshaping conventional systems. The outer shell hangs on trusses of linked triangular units, which span wide spaces and leave the floors open for meeting rooms, a lounge and a cafeteria.

04.01 The tower in context

04.04 Street view

04.02 The base and plaza

04.03 The upper volumes

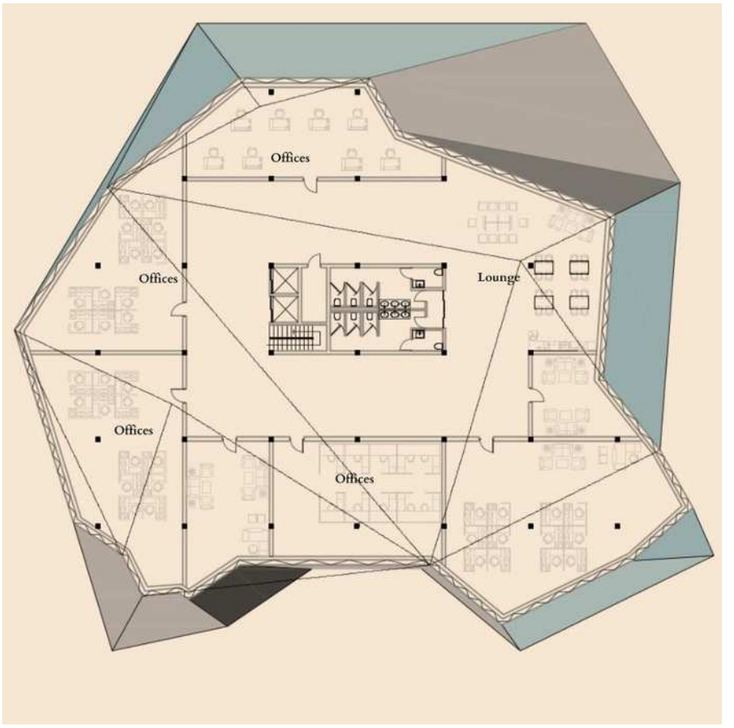


04.05 Ground floor plan

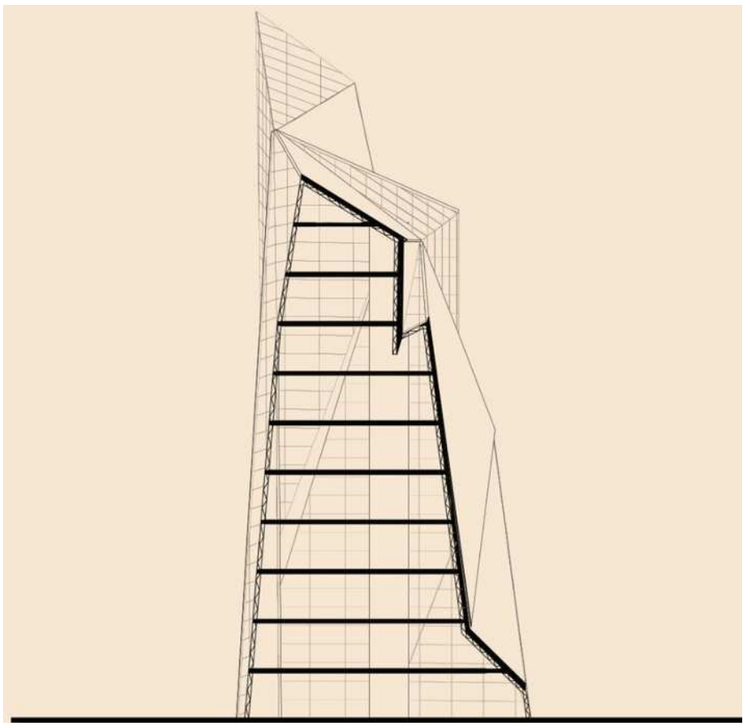
04.07 Roof and site plan

04.09 Open office floor

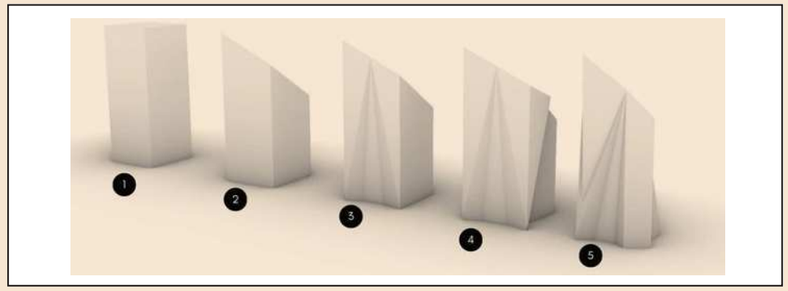
04.10 Office floor with a view out



04.06 Typical floor plan



04.08 Section



04.11 Form generation

05

Building Construction 4

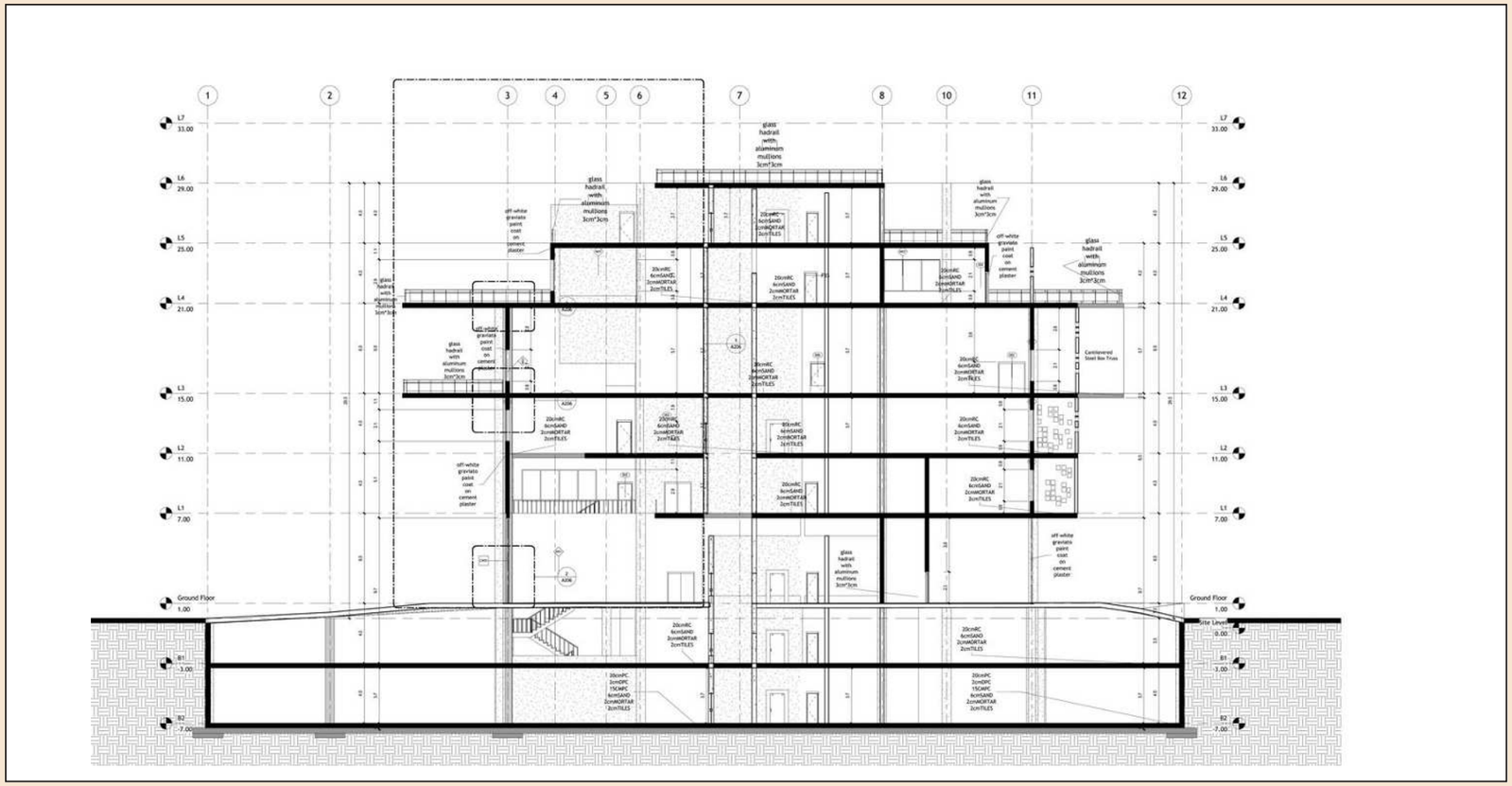
Working drawings from basement to roof

YEAR 2026

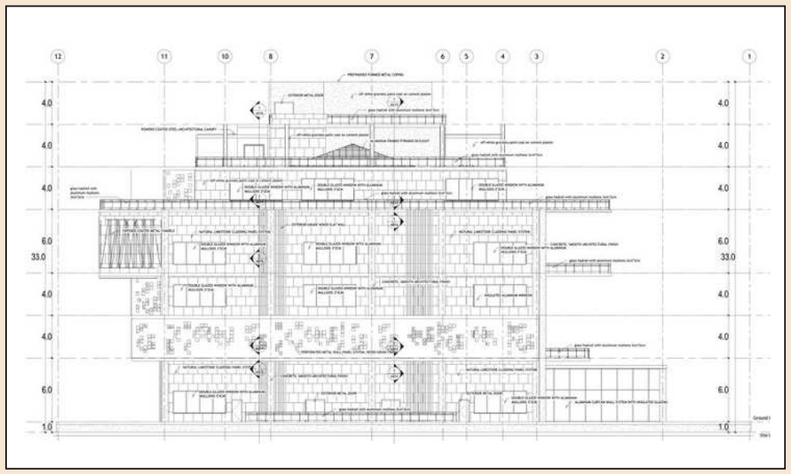
COURSE Building Construction 4

TOOLS Revit, AutoCAD

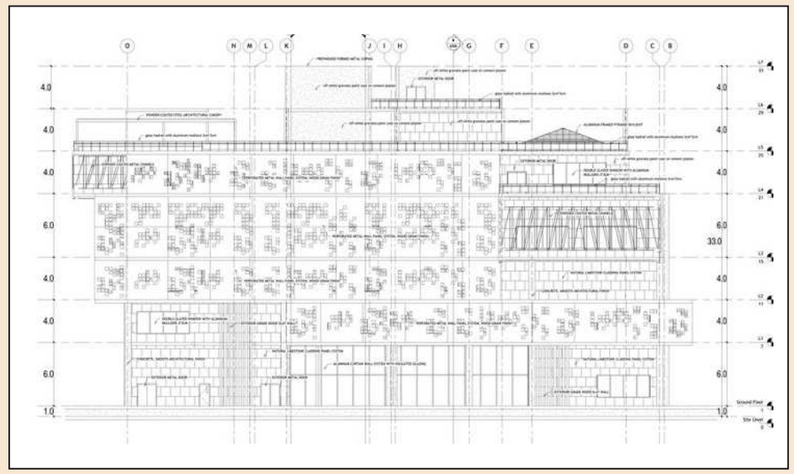
A full construction drawing set for a building with two basements, a ground floor, four upper floors and a roof: plans, elevations, a building section, main and emergency stairs, and details of the entrance and a double-skin facade.



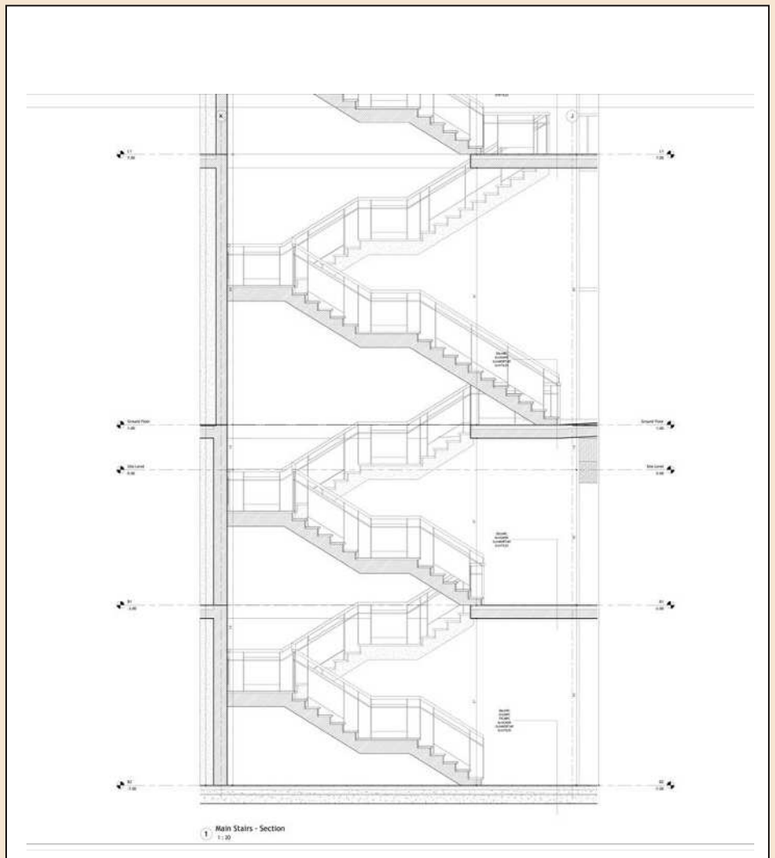
05.01 Building section



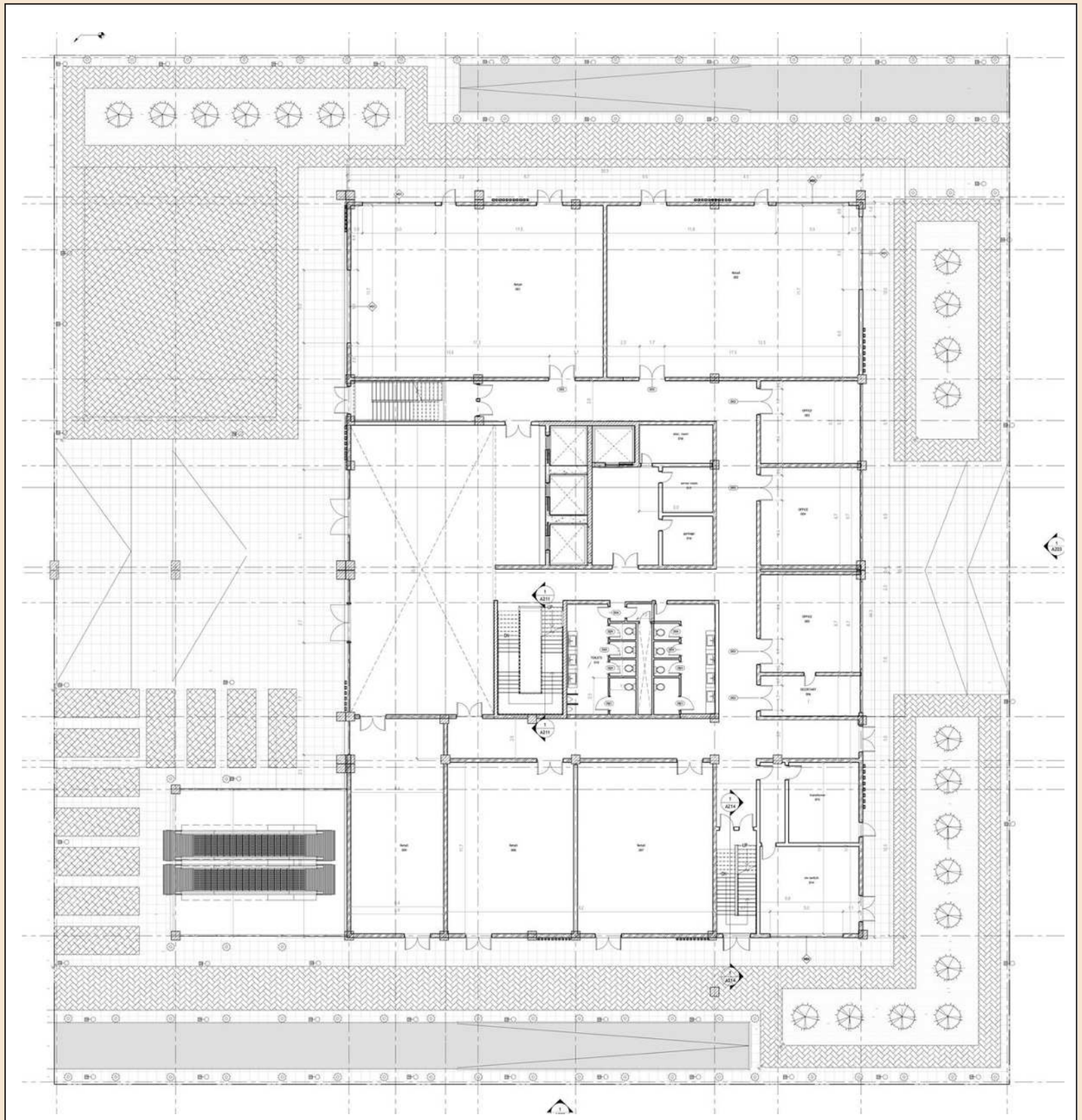
05.02 North elevation



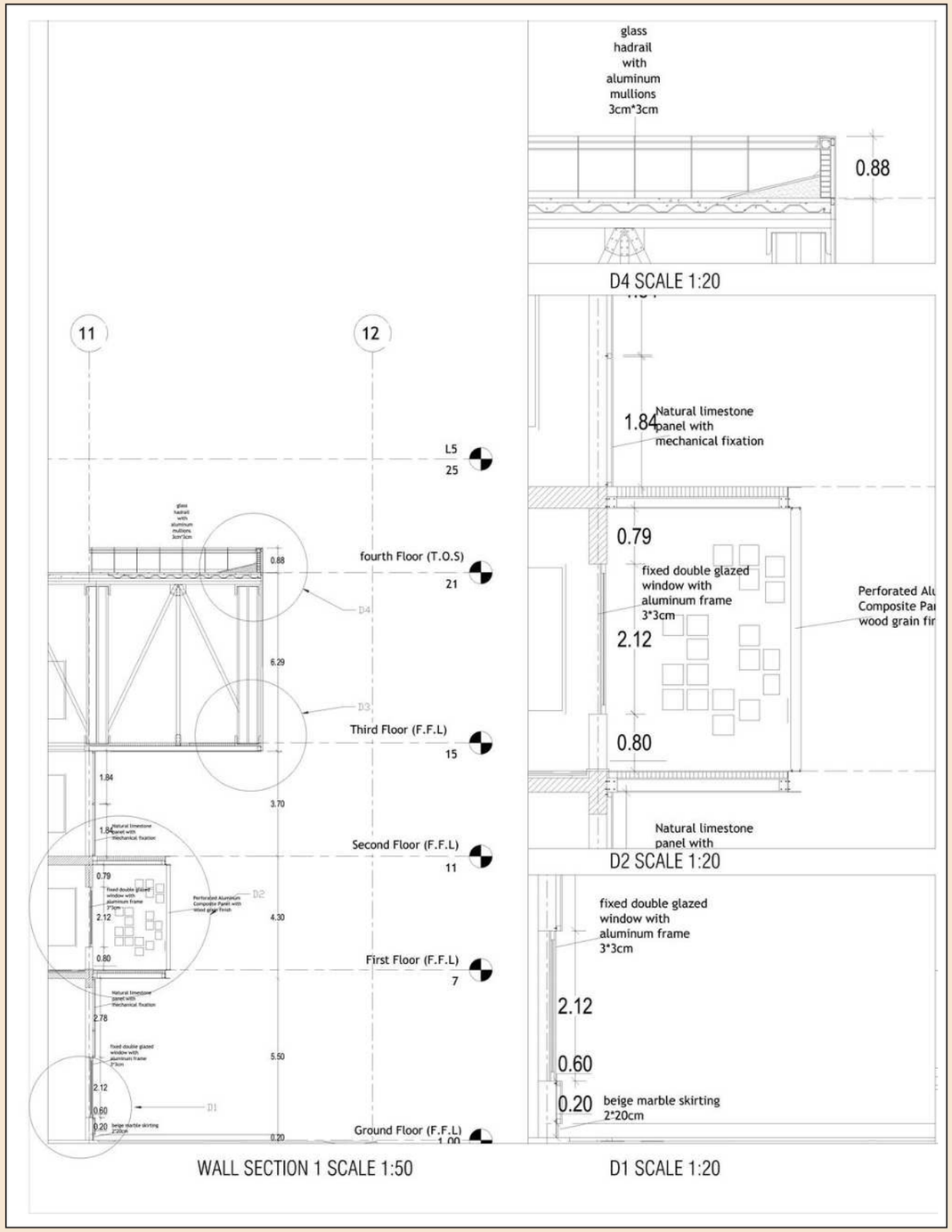
05.03 East elevation



05.04 Main stairs, section



05.05 Ground floor plan



05.06 Wall section and facade details

PLANS

8 sheets

ELEVATIONS AND SECTION

5 sheets

STAIRS

7 sheets

CONSTRUCTION DETAILS

5 sheets

SITE AND BLOCK WORK

4 sheets

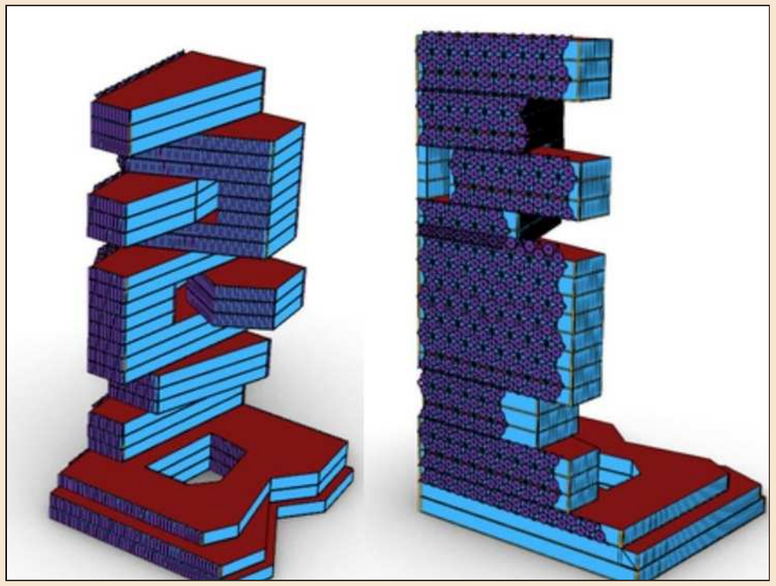
06

Computational studies

Daylight and energy tested before drawing

YEAR	2026
COURSE	Integrated building systems; KBS
ROLE	Poster: team of 5 · KBS: individual
TOOLS	Grasshopper, Rhino, Revit 2026

Our group poster tested an office building step by step: form, orientation, window-to-wall ratio, louvers and a kinetic facade. The chosen case uses 24% less energy and lifts spatial daylight autonomy from 2.7% to 84.7%. In the KBS course I built Revit families, shown on the next page.



06.02 The chosen case

CHOSEN CASE	SETTING
Form	Optimized
Orientation	North
Window-to-wall ratio	90%
Louvers	East and west facades
Shades	South facade

Base case Chosen case

Energy use intensity

kWh per m², lower is better

−24%
less energy

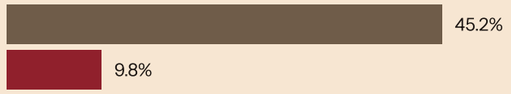
Solar radiation on the facade

kWh per m², lower is better

−38%
less radiation

Annual sunlight exposure

percent of floor area, lower is better

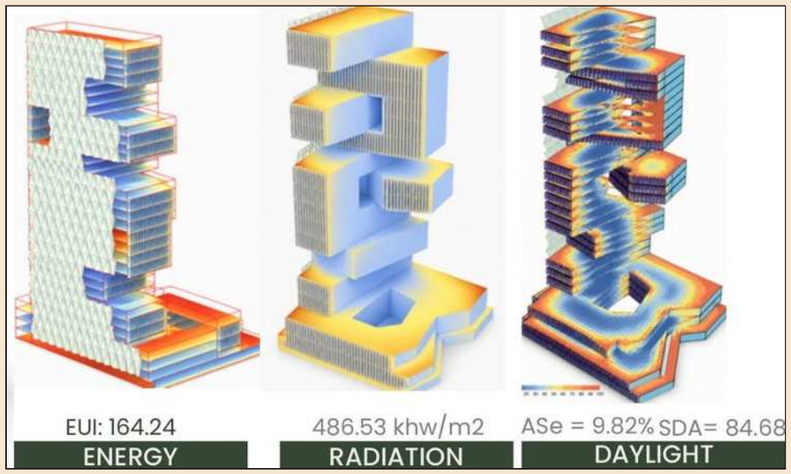


−35
points

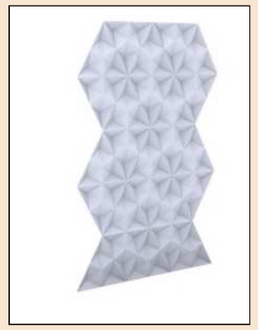
Spatial daylight autonomy

percent of floor area, higher is better

+82
points

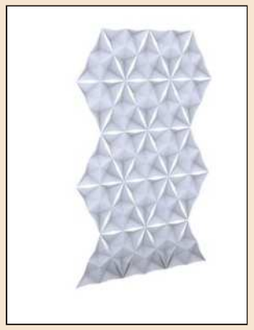


06.01 Chosen case: energy, radiation, daylight



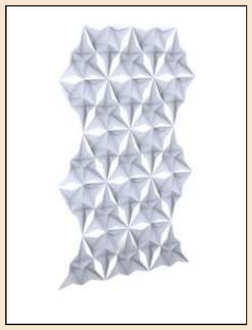
Closed

sDA 12.5%
ASE 25.7%



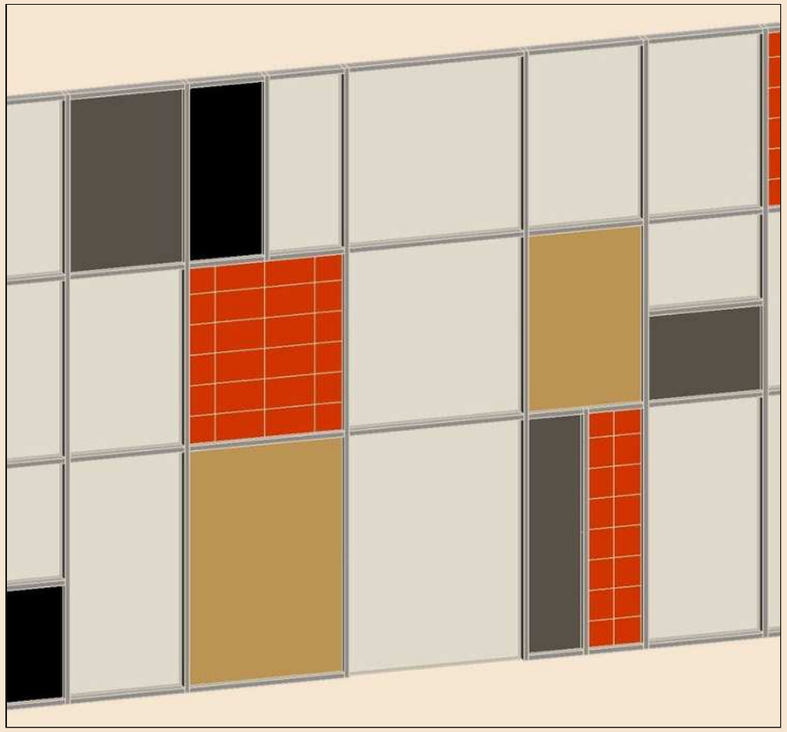
Semi-open

sDA 23.6%
ASE 31.3%

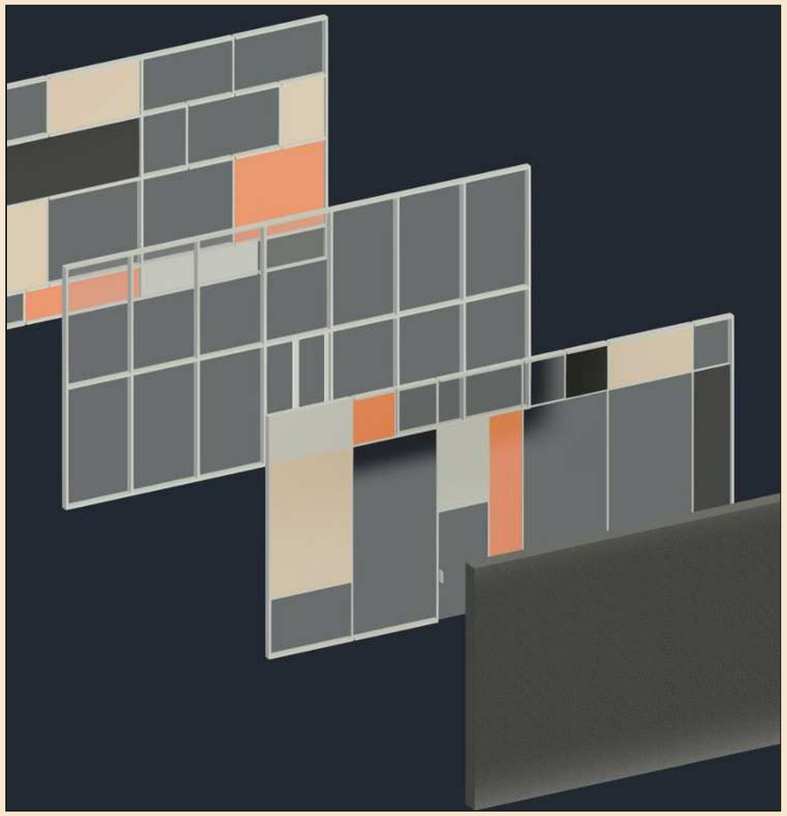


Open

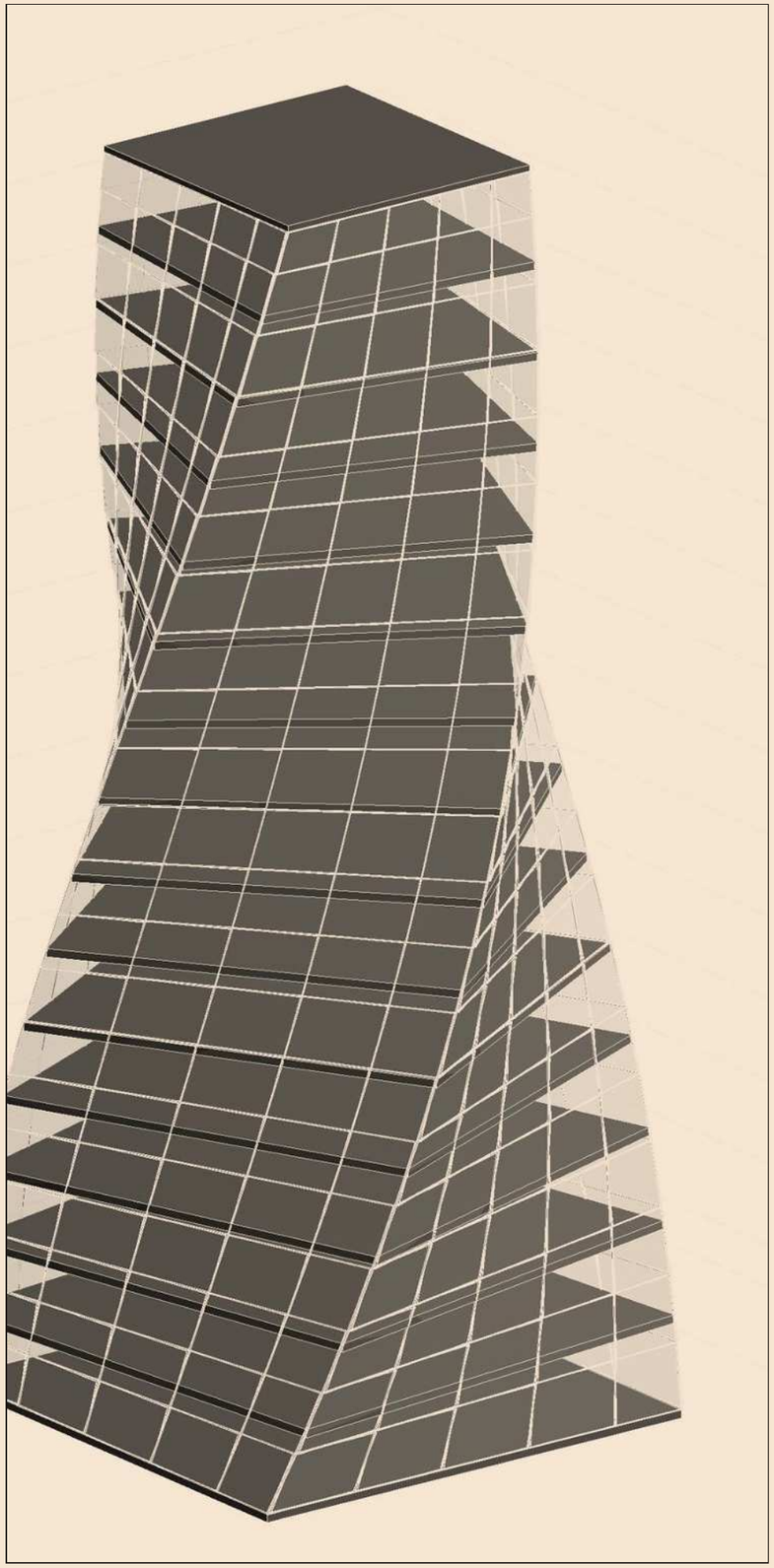
sDA 31.5%
ASE 37.0%



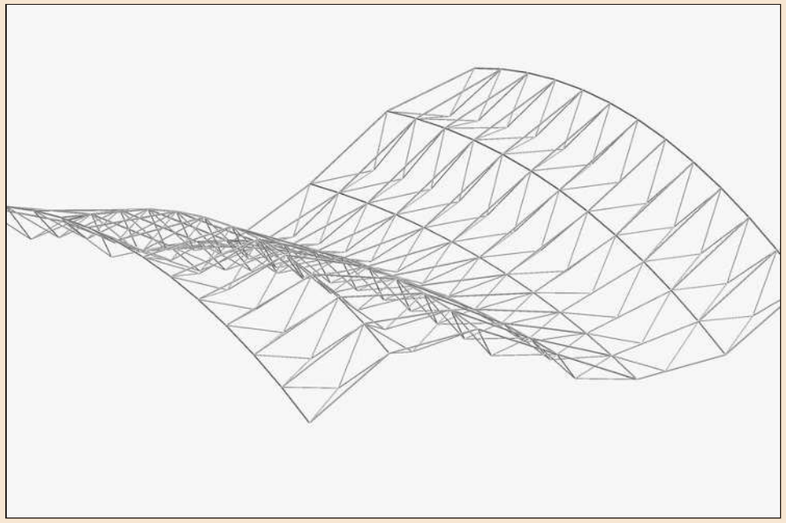
06.03 Curtain wall families



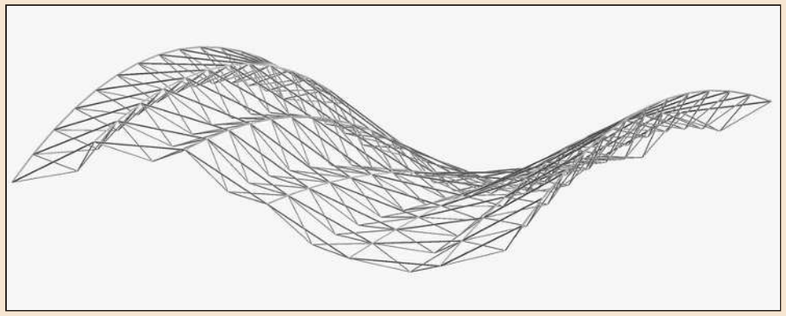
06.04 Curtain wall panels, 3D



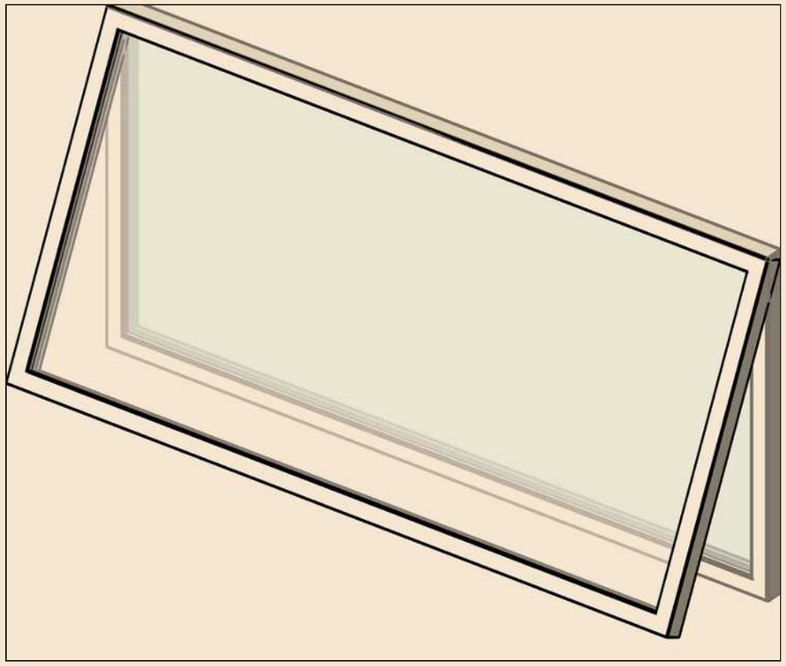
06.05 Twisted tower, 60 m



06.06 Space-truss canopy



06.07 Wave canopy, side view



06.08 Operable awning module

07

La Pianta

Two layout options on one sloped site

YEAR	2024
COURSE	Site Planning and Development
PLACE	New Giza, 6th October City
ROLE	Team of 5 · shared across all stages

A residential compound on a sloped site of about 211 feddan, planned on 181 after a 30-feddan strip. We read the site at macro and micro scale, then drew two plans, one with a linear street grid and one with cul-de-sacs.

181
feddan planned

5,430
residents

1,120
homes, villas and twin houses

07.01 Main street with crossing

07.02 Residential street

07.03 Central lawn

07.04 Option A: linear grid

07.05 Option B: cul-de-sacs

07.06 Cul-de-sac cluster from above

Linear grid

32 / 40

Hierarchy	9
Clusters	9
Contours	7
Concept	7

Cul-de-sacs

35 / 40

Hierarchy	9
Clusters	9
Contours	8
Concept	9

HOMES, 537,000 M² OF LOTS

Villas 60%
670 lots of 600 m²

Twin houses 40%
450 lots of 300 m²

SERVICES, 41,354 M² IN TOTAL

Parks and lakes	29,865 m²
Mosque	4,000 m²
Restaurants	2,498 m²
Supermarket	2,063 m²
Administration	1,456 m²
Clinic	1,200 m²
Pharmacy	272 m²

08

Museum of Emotions

A walk from chaos to calm

YEAR 2026
COURSE Design 6
ROLE Individual

You start inside labyrinth floors and narrow passages. Stairs cross in a white void. The route ends in a quiet water room, lit from above, where a figure sits and meditates. Outside, a long causeway leads from a rocky shore to a square pavilion over the water.

08.01 Labyrinth floor

08.02 Crossing stairs in a white void

08.05 Narrow passage

08.03 The pavilion over the water

08.04 The top-lit water room

09

Closing the Salt Cycle

Siwa Oasis, from salt waste to resource

GRADUATION PROJECT, 2026

COURSE	Graduation Project 1
PLACE	Siwa Oasis, Egypt
ROLE	Team of 5 · led problem and solution

Siwa sits in a closed basin with no outlet for its water. Pumping and farm drainage have turned its water cycle into a salt cycle. We ask how architecture can turn salt from waste into a resource that builds, heals, employs and teaches.

WATER EXTRACTION

×4.7

65.9 to 308 million m³ a year

SALT LAKE AREA

+89%

1987 to 2000

DATE YIELD PER ACRE

−55%

2000 to 2011

DATE INCOME PER ACRE

−62%

2000 to 2011

Figures: Moghazy and Kaluarachchi, 2020

SIX BUILDINGS, ONE SALT CYCLE

01

Research and craft school

Cleans drainage water and trains builders and artisans.

02

Salt production hub

Harvests and processes lake salt.

03

Therapy and wellness

Salt rooms, salt pools and sand baths.

04

Karshif eco-lodge

Visitors stay in karshif buildings.

05

Saline agriculture

Salt-tolerant crops on treated drainage water.

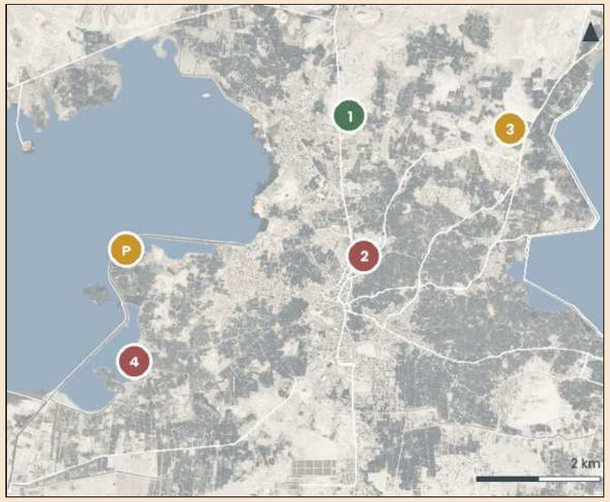
06

Dorms and homes

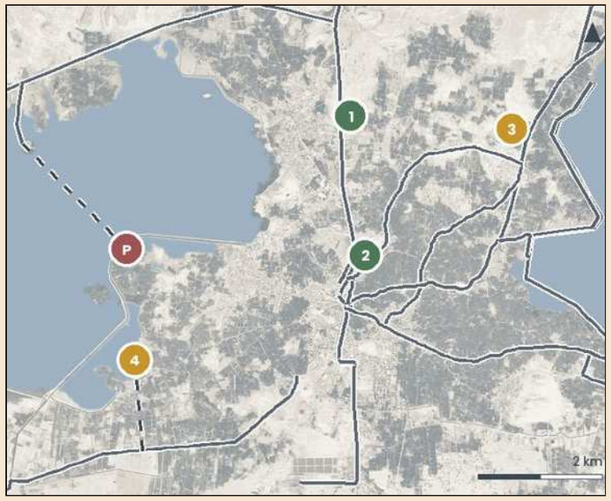
Homes for students, researchers and workers.

09.01 Candidate sites around Siwa

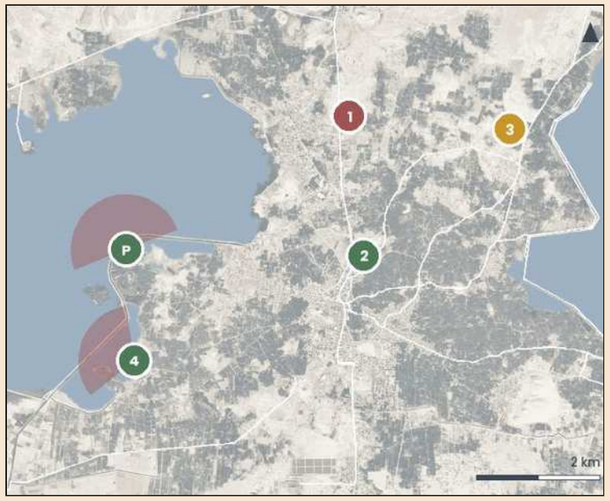
09.02 Proximity to water



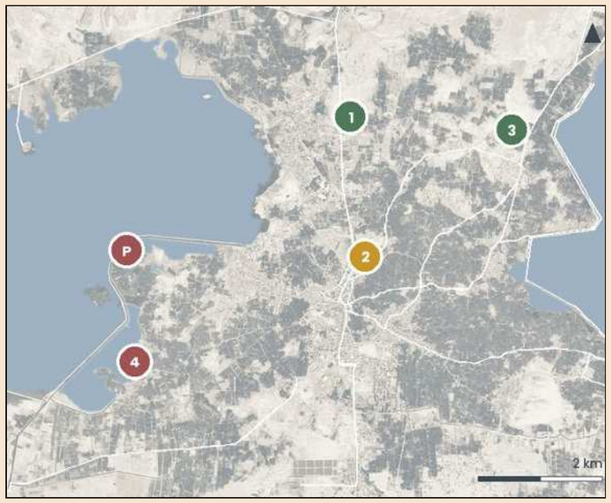
09.03 Land availability



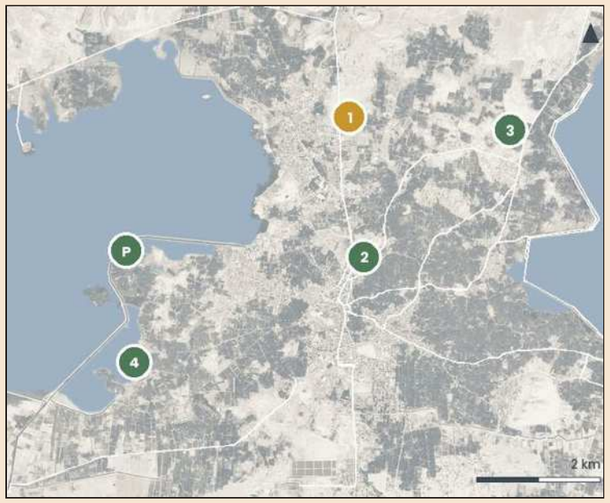
09.04 Accessibility to land



09.05 Site view



09.06 Safety from waterlogging



09.07 Proximity to agriculture

Scores out of 5, weighted

CRITERION	WEIGHT	SITE 1	SITE 2	SITE 3	SITE 4	OUR PLOT
Proximity to water	20%	2	3	4	5	5
Water recycling potential	15%	2	1	3	5	5
Accessibility to land	15%	5	4	3	3	2
Land availability	15%	5	1	3	2	3
Site view	10%	2	4	3	5	5
Safety from waterlogging	10%	4	3	5	1	2
Heritage and tourism links	10%	2	5	3	3	3
Proximity to agriculture	5%	3	4	5	4	5
Weighted score	100%	**63%**	**58%**	**70%**	**72%**	**75%**

RANKING

High Middle Low Pin colour on each map

Site 1

Site 2

Site 3

Site 4

Our plot

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Let's talk.

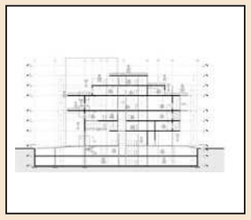
THE NINE PROJECTS

01 Helwan

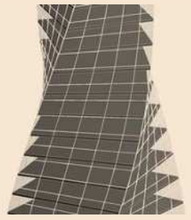
02 Fustat

03 Eco School

04 Office



05 BC4



06 Computational

07 La Pianta

08 Museum

09 Siwa