



# Environas

Sustainability in every space

We'd love to hear from you. Tell us more about your upcoming project goals, how we can meet your business objectives, and guide your environmental impact.

*Nihal al sabbagh*

Environas  
Design Lab





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# GENERAL INFORMATION



**Environas was founded by Dr. Nihal Al Sabbagh in Cairo, Egypt in 2021, a sister company of Desert Contracting Company (DCC) in Abu Dhabi, UAE. DCC is a contracting firm that served the industrial, institutional, residential and commercial sectors in both the public and private sector for more than 20 years. Environas focuses on integrating environmental knowledge and expertise into practice through research based design approaches and tailored solutions.**



## Our Hope

Sustainability in every space

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## What we do

We design to maximize user comfort and reduce the environmental impact



# WELCOME TO THE LEADING ARCHITECTURE LAB

At Environas we design buildings and spaces creatively according to the optimum environmental performance criteria focusing on the users' comfort. Our designs ensures that our solutions create a continuous dialogue between the indoor and the outdoor.



# OUR SERVICES & SOLUTION

Our scope of services are flexibly and easily tailored according to the project's and client's needs to meet the environmental goals without compromising the quality of life. We create healthy environments to influence their users living through diverse collaborations and in-house expertise. Our services and projects are at a local and global reach.



**ENVIRONMENTAL DESIGN**



**ENVIRONMENTAL ASSESSMENT**



**ENVIRONMENTAL RESEARCH**



# ENVIRONMENTAL DESIGN



## INTERIOR DESIGN

We apply passive design strategies for ventilation, cooling and heating through the interior elements of the project that evolves around efficient lighting, acoustic, design energy performance calculations including green material selection and vegetation.

## LANDSCAPE DESIGN

Our outdoor space designs interweaves the beauty of materiality and local greenery to achieve the optimum landscaped solutions taking into consideration the water consumption from irrigation and the microclimatic influence of the ambient environment

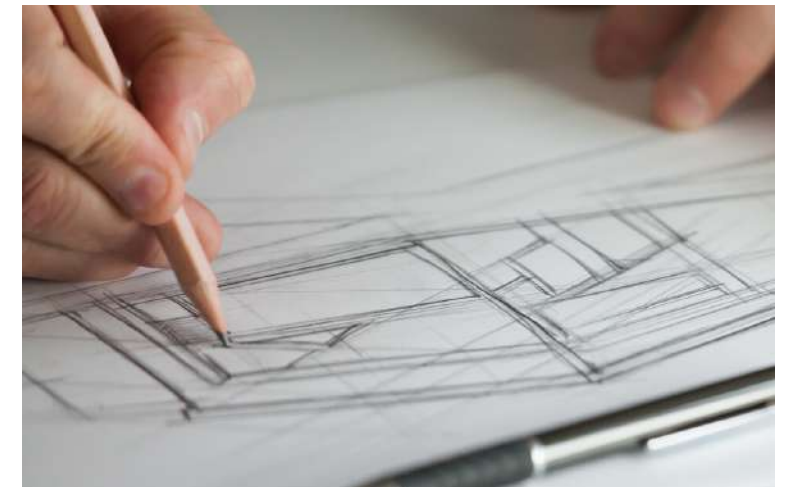


## URBAN DESIGN

We design urban masterplans that offer equitable, efficient, and environmentally performative settings to their inhabitants. Our design objectives always considers the dialogue between the open spaces, green areas and optimized building layouts to improve the microclimatic conditions of the surrounding

## ARCHITECTURE DESIGN

Our concept inspirations evolves around maximizing the use of the passive design strategies . We deliver creative building forms that combine aesthetical and environmental values uniquely to serve human comfort





# ENVIRONMENTAL ASSESSMENT

## MICRO CLIMATIC & THERMAL COMFORT ANALYSIS



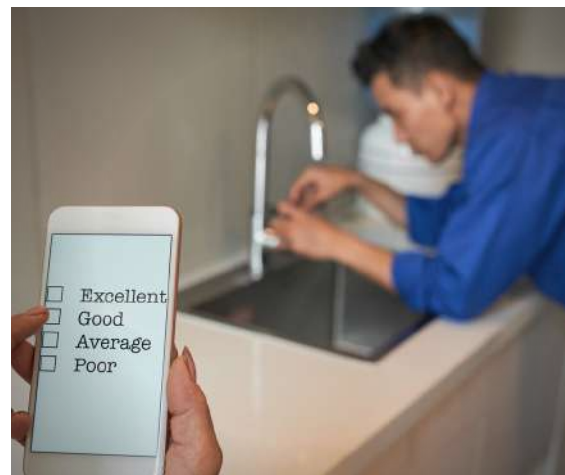
### BUILDING ENERGY PERFORMANCE

We conduct an audit for the energy demands in buildings and urban areas using simulation runs to reduce the building operation costs from mechanical ventilation and usability demand that avoids further environmental impacts.



### POST OCCUPANCY EVALUATION

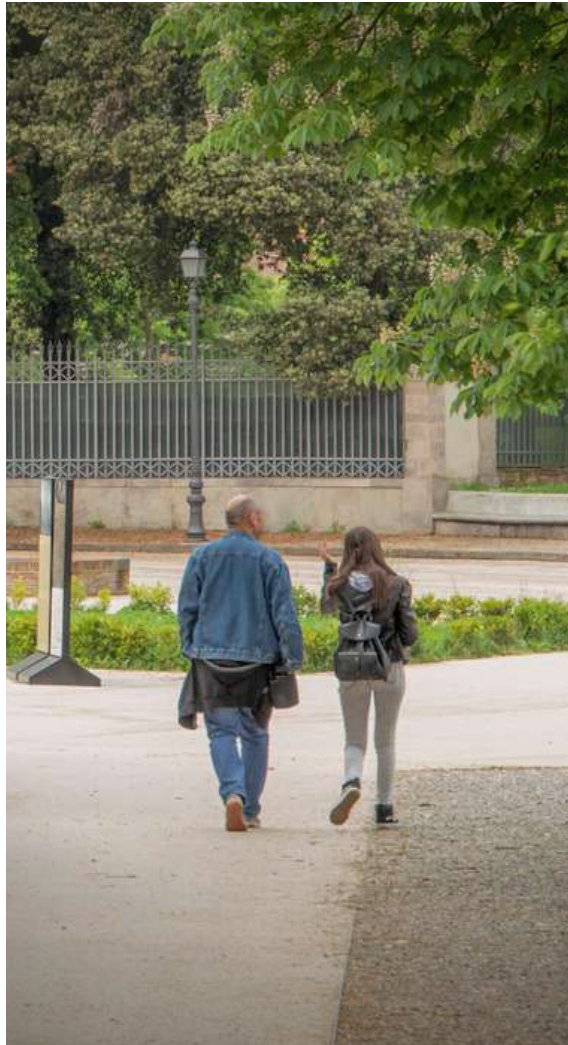
We study existing urban projects and buildings according to the microclimatic and user comfort analysis to diagnose problematic areas such as IAQ, OAQ, urban hotspots and thermal comfort analysis. The evaluation reports are used to improve the investments of future projects through an optimum performance and sensible environmental impact.



We conduct a thermal analysis for new urban areas, buildings and green space related projects to detect solar gains and wind flow patterns to inform the outdoor and indoor design. We use digital simulation tools and environmental monitoring data to generate knowledge that is then tailored to communicate with different clients and designers. Also, we predict thermal comfort inside buildings and in outdoor spaces to aid design narratives according to the optimum operation schedule and user's analysis. Our design recommendations integrate the thermal, visual and/or acoustic parameters of each project.



# ENVIRONMENTAL RESEARCH



## WALKABILITY

The track investigates various built environments according to its climatic conditions and urban parameters which defer walkability. Previous explorations were conducted in hot cities UAE, KSA and Egypt. The interconnectedness between the social and environmental parameters is used to signify the urban design attributes needed to promote walking. Researches focuses on mainly three tracks, dynamic thermal sensation, thermal environment on human perception, and commercial viability of the area.



## CLIMATE CHANGE

This track aims to downscale the effects of climate change to a user and street level through analyzing different thermal comfort scenarios. Heat rise effect in Egypt was analyzed referring to eight cities at the various climatic zones to identify thermal stress levels that meet with the SDG goals 2030. We analyze the past and future projections of the outdoor thermal comfort to highlight the mitigation and/or adaptation strategies needed to fight the warming of cities. Researches focuses on thermal comfort and the built environment.



## ENVIRONMENTAL RESEARCH METHODOLOGIES

The track focuses on utilizing various methods and techniques using digital and physical tools to explore the environmental parameters of the outdoor environments, the indoor environments and the relation between them. Microclimatic simulation, building performance tools and environmental monitoring is used to develop methods that overcome the gaps in each method.

# 01 | PRODUCTIVE OFFICES

To deliver healthy working environments we design office spaces creatively through a spatial experiences that plays with light, color, materiality, and ventilation to ensure optimum comfort and productivity levels are provided.

Our comfort tailored solutions focus on: lighting, acoustic, and efficient spatial distribution.





Architecture Mancave Studio

# NOUR EL REFAI STUDIO

PRODUCTIVE OFFICES

Service includes

- Interior design concept
- Digital gallery design concept

As we attempt to envision how future workspaces would look like, this one is special.  
An immersive gallery and office for **Nour El Refai**



We designed flexible spaces, shooting areas and lounges that integrates nature at every corner that are environmentally sound.

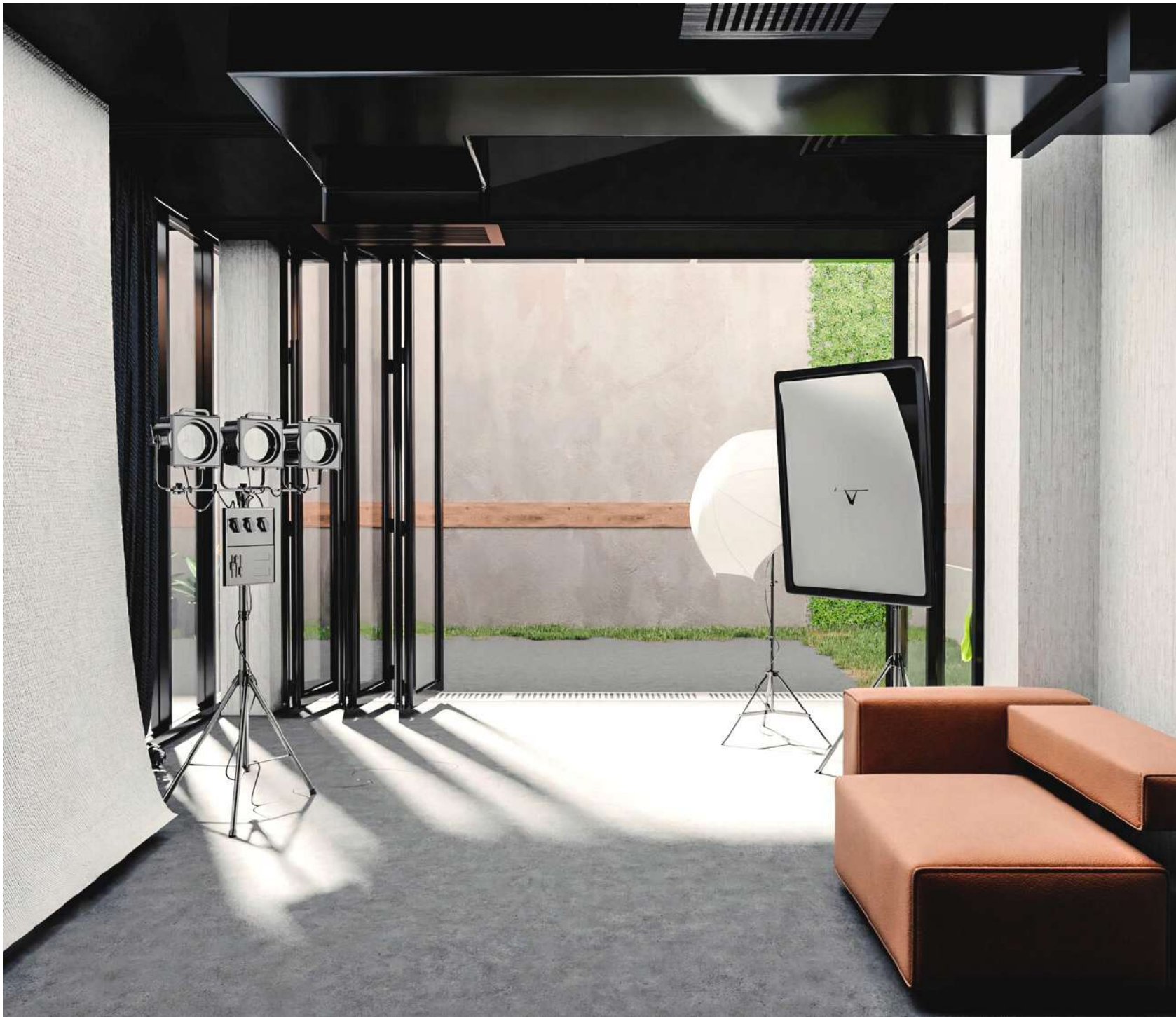
The lighting, acoustic, and thermal comfort analysis were conducted for an optimum performance of the spaces.













# 02 | SUSTAINABLE BUILDINGS



Our approach to economic, comfortable and environmental friendly buildings starts with integrating passive design strategies to meet project requirements and deliver low energy performance, architectural aesthetics, and thermal comfort tailored solutions.

# PRIVATE RESIDENCE

S U S T A I N A B L E   B U I L D I N G S



Private Residence













**Thermal Transition Space**

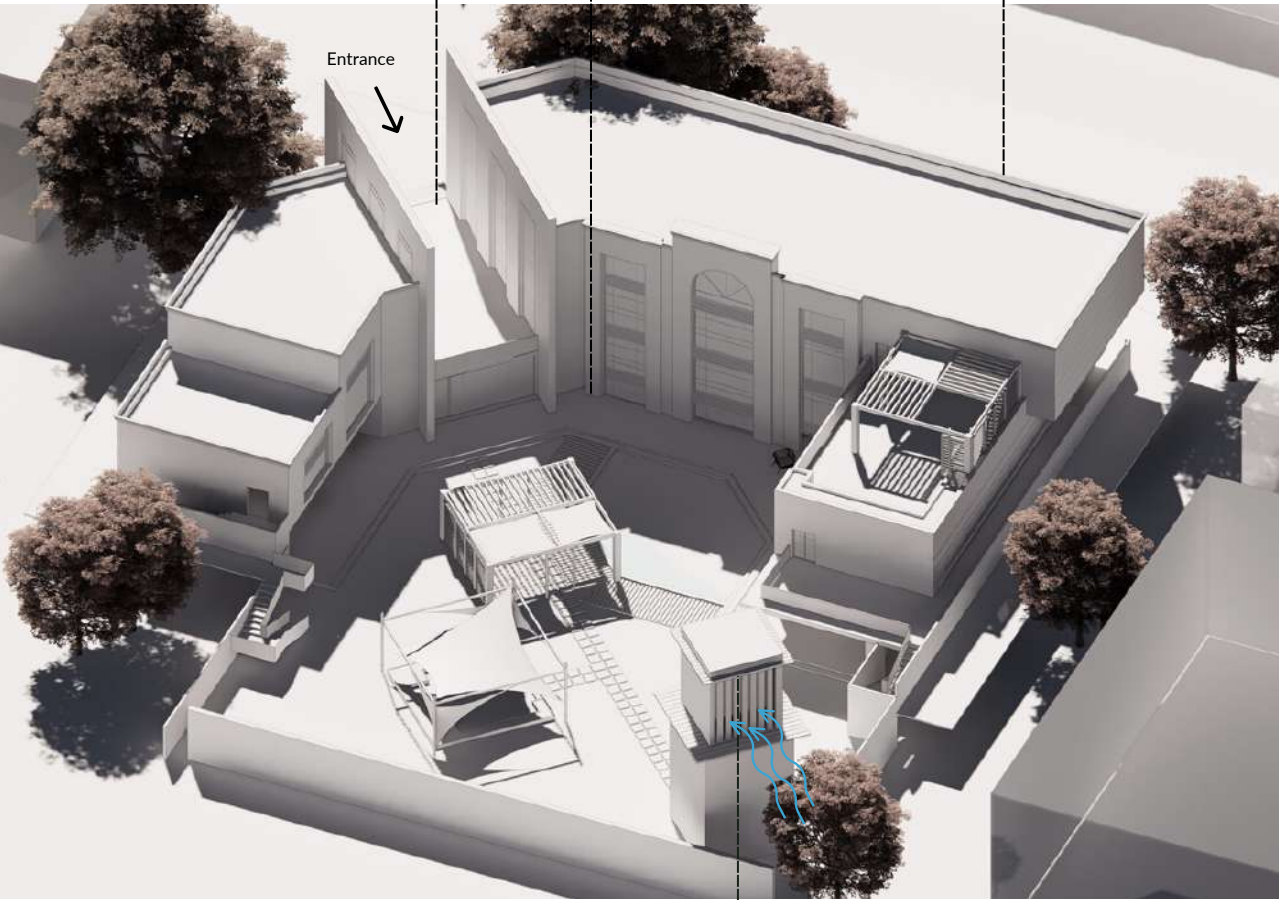
Natural Cross ventilation provides thermal comfort by reducing heat and allowing air flow

**Separate Wings**

The energy efficiency approach evolves from allocating the spaces with highest operational hours in the basement level.

**Heat Avoidance**

Solid walls on the southern facade

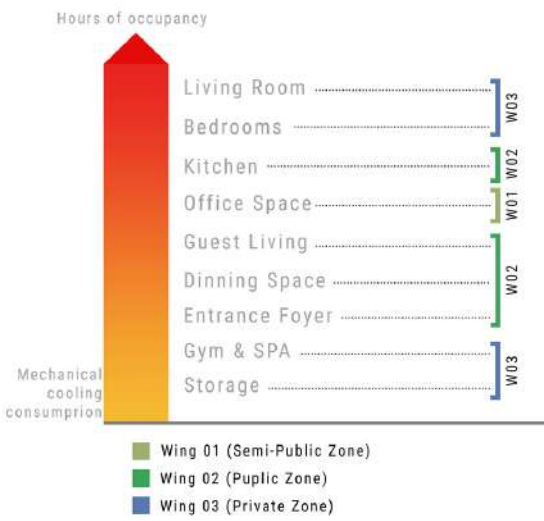


Private Residence

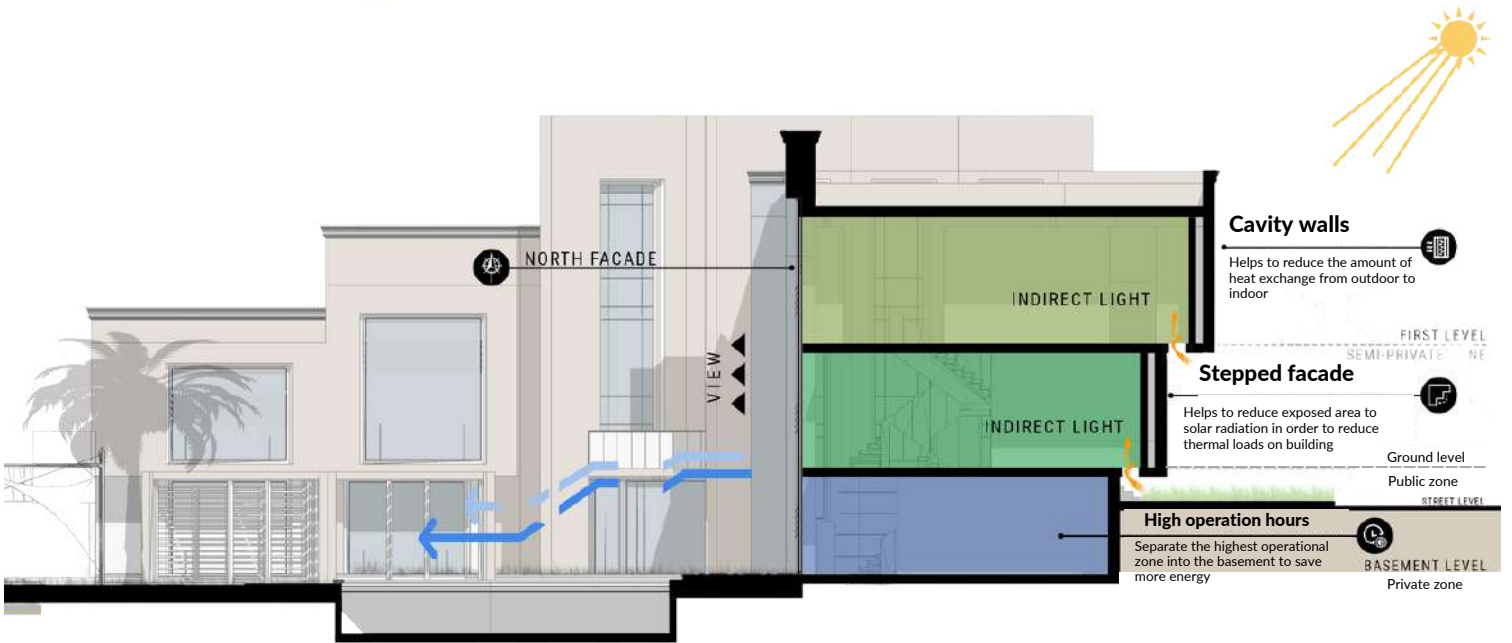
**Wind Catcher**

A passive cooling system which significantly influences the cooling loads and outdoor ventilation

**Spatial redistribution**



# PROJECT ANALYSIS







### **Services include:**

- Concept and preliminary design
- Design assessment ( micro climatic and thermal comfort)



## Services include:

- Energy performance simulations for reducing electrical consumption (P.V. design and installation and solar heaters)
- Lighting analysis for running cost reduction according to function and user analysis
- Microclimatic analysis of site to asses influence of greenery and landscape within site and the surrounding area on the building
- Efficient landscape design and irrigation systems to reduce water consumption







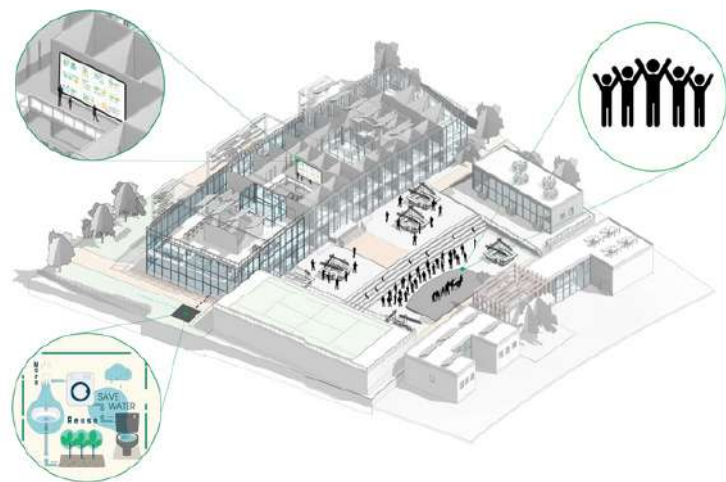
# COMMUNITY EDUCATIONAL CENTER

S U S T A I N A B L E   B U I L D I N G S

## Services include:

- Investment analysis
- Net zero sustainability plan
- Architecture concept design
- Social and environmental comfort analysis

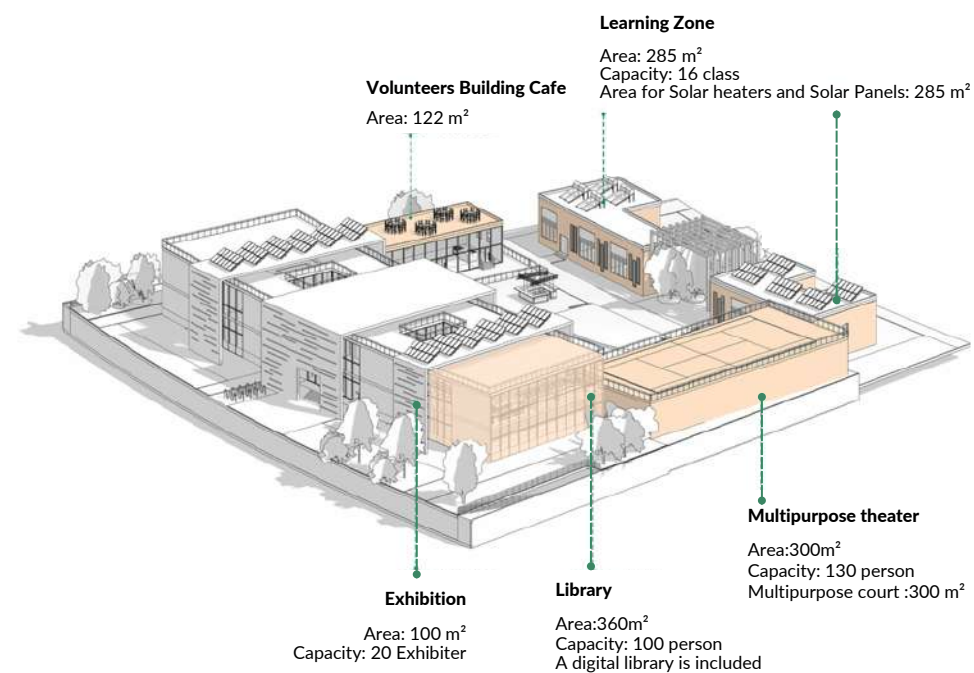
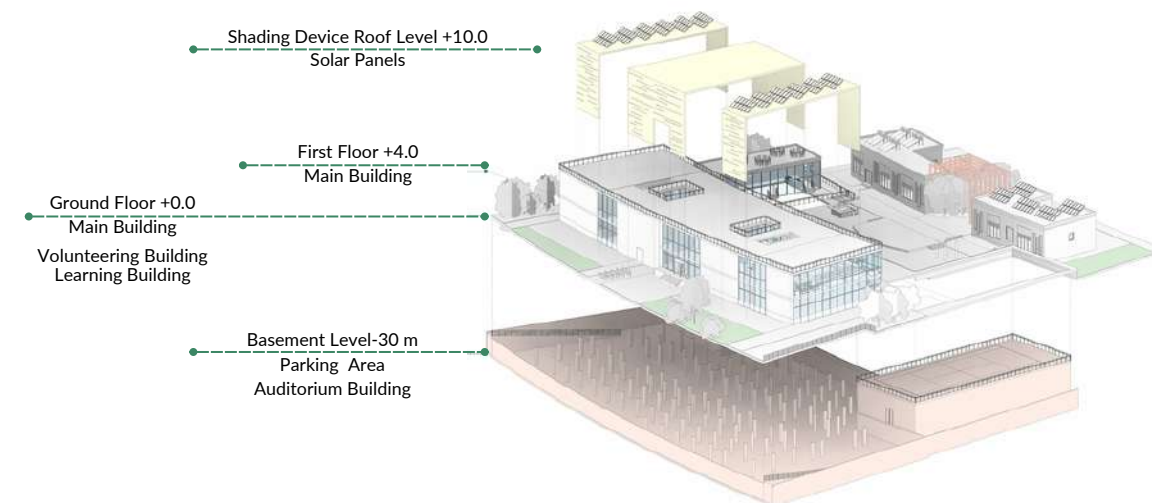




Environmental, social and economical facilities interweaved









# MARHABA

S U S T A I N A B L E   B U I L D I N G S

## Services include:

- Architecture concept design
- Design development
- Landscape design
- Microclimatic analysis
- Green certification





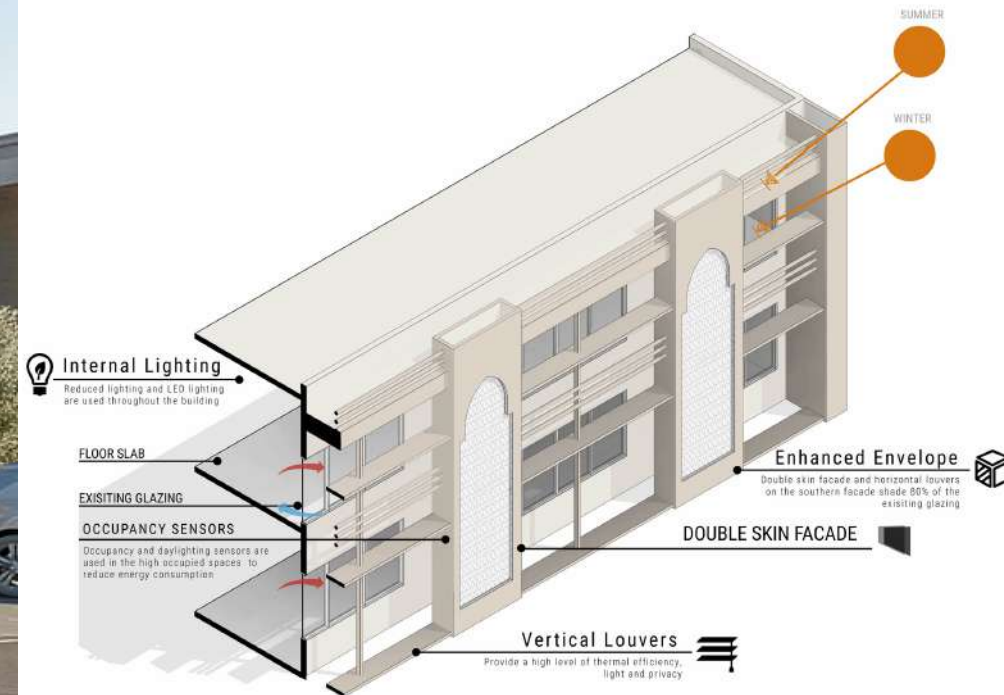


# SWANY HOSPITAL

S U S T A I N A B L E   B U I L D I N G S

## Services include:

- Facade retrofitting design
- Energy performance analysis for left wing







# MOSQUE

S U S T A I N A B L E   B U I L D I N G S

## Services include:

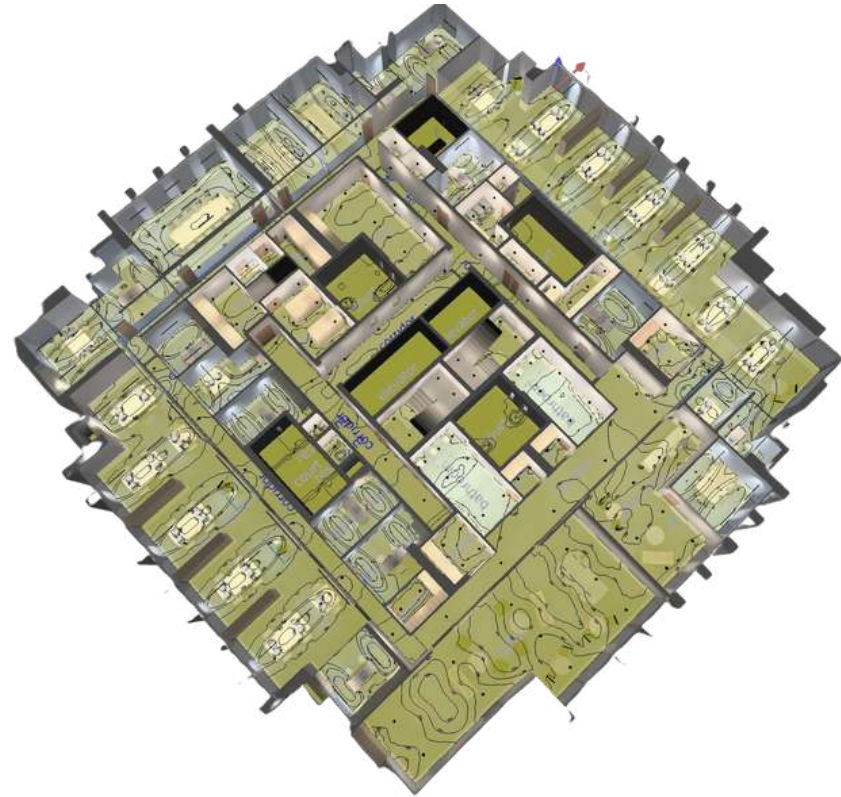
- Mosque Design Concept
- Concept for glass Detailing





# ILSERVIER

SUSTAINABLE BUILDINGS



## Services include:

- Lighting analysis
- Acoustics analysis

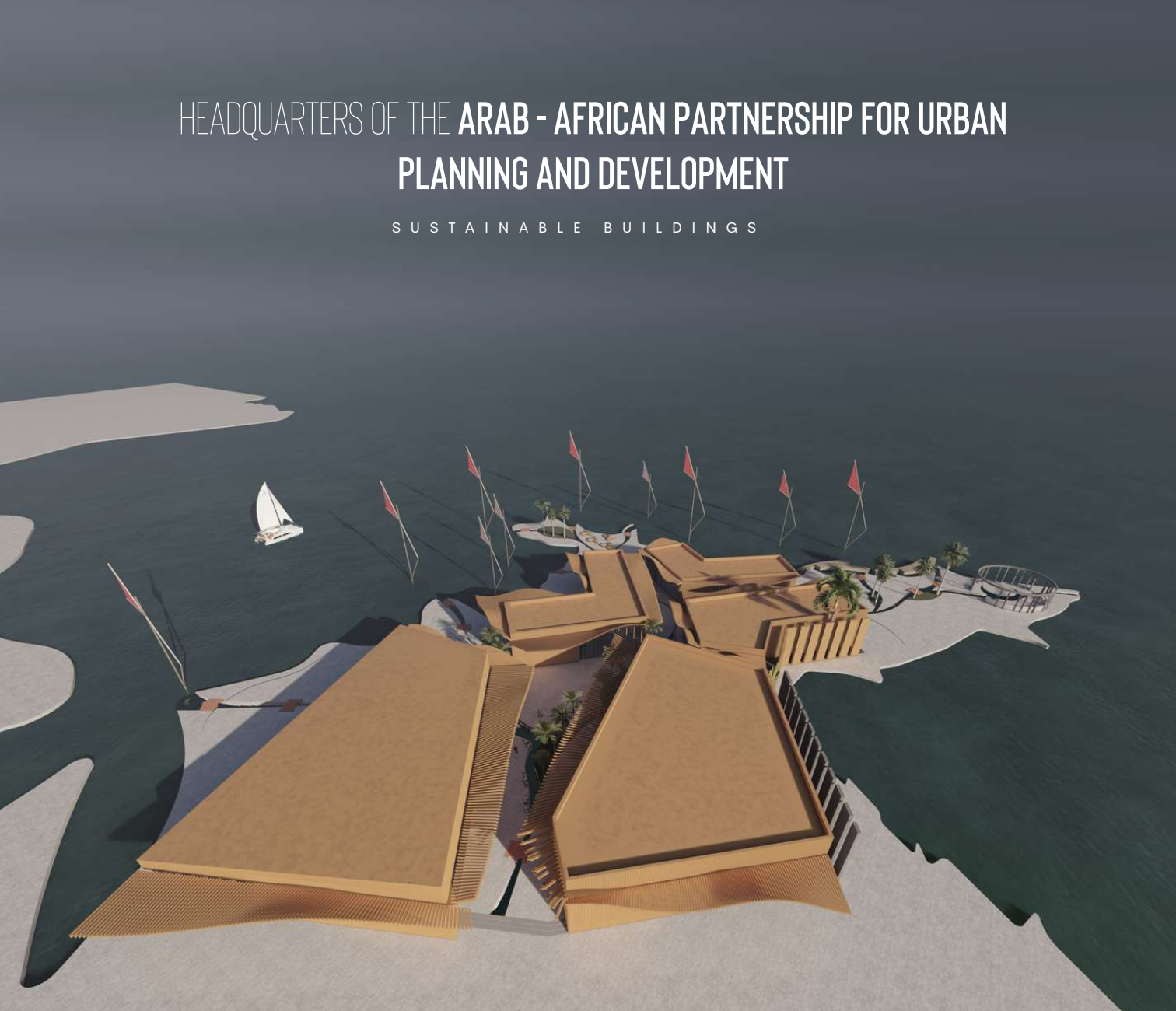


The Role of energy efficiency and user's comfort has been attained in IIServier, through the collaboration between **Environas** and **Studioplus**. **Lighting and acoustic analysis** were conducted to improve the space qualities.



HEADQUARTERS OF THE ARAB - AFRICAN PARTNERSHIP FOR URBAN  
PLANNING AND DEVELOPMENT

S U S T A I N A B L E   B U I L D I N G S



**SITE LOCATION**  
The design includes simple architectural characteristics: river bifurcation, palm trees, vertical louvers, double walls in the south facades and parametric shading elements in the main spine. By combining the modular architecture of the project with the futuristic renewable pillars, the entire site is sculpted.



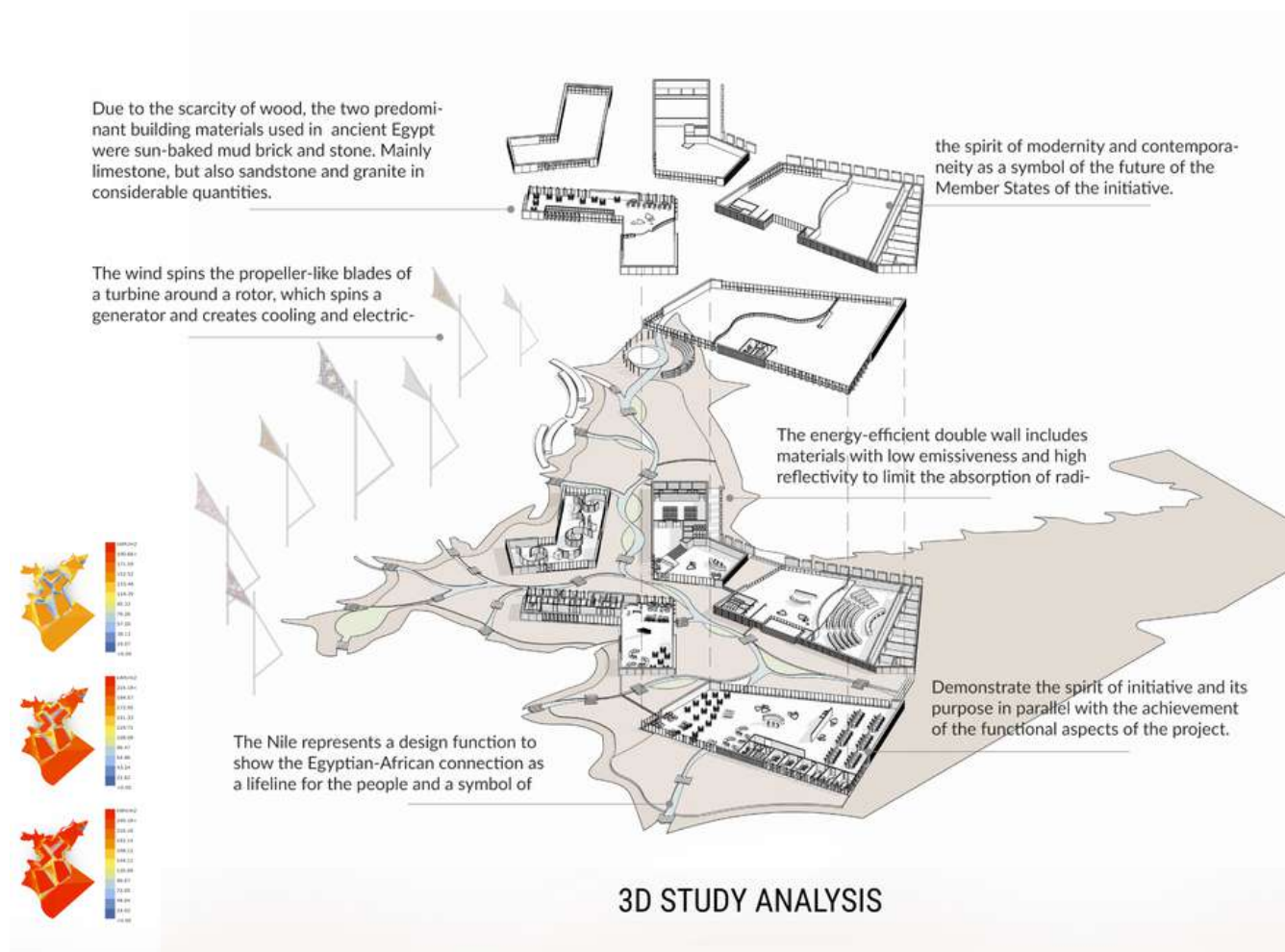
FORM GENERATION



LAYOUT









# MARBLE SHOWROOM

S U S T A I N A B L E   B U I L D I N G S

## Pv integration

### Base Case

Consumption Per Year: 491,904 kWh

PV Area Needed to cover 100%: 1639.68 m<sup>2</sup>

PV Total Cost: 2,732,800 EGP (Excluding Tax and Installation)

PV Payback Period: 4.83 years (Excluding Tax and Installation)

### Optimized Case

Consumption Per Year: 403,515 kWh

PV Area Needed to cover 100%: 1,345 m<sup>2</sup>

PV Total Cost: 2,241,750 EGP (Excluding Tax and Installation)

PV Payback Period: 4.83 years (Excluding Tax and Installation)

The proposed design interventions will help the client save around 101,647 EGP every year based on the assumption that the building operating hours are 12/5





# 03 | COMFORTABLE HOMES

Our goal is to create a unique experience for each project that is tailored to suite each of the users. We select the optimum environmental strategies according to the projects budget and site challenges.





# PALMA PYRAMIDS

C O M F O R T A B L E   H O M E S

## Services include:

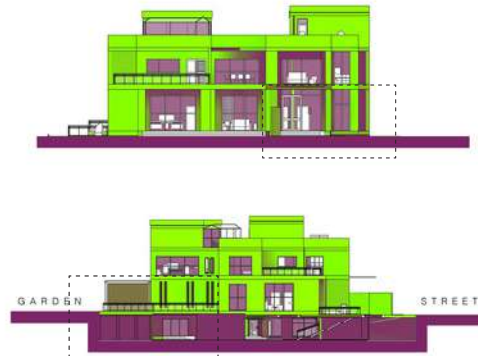
- Flat conversion design
- Energy performance analysis for left wing

The project proposes an asset division units concept to ease the sale leasing. A set of environmental strategies are integrated within the project tailored for each apartment

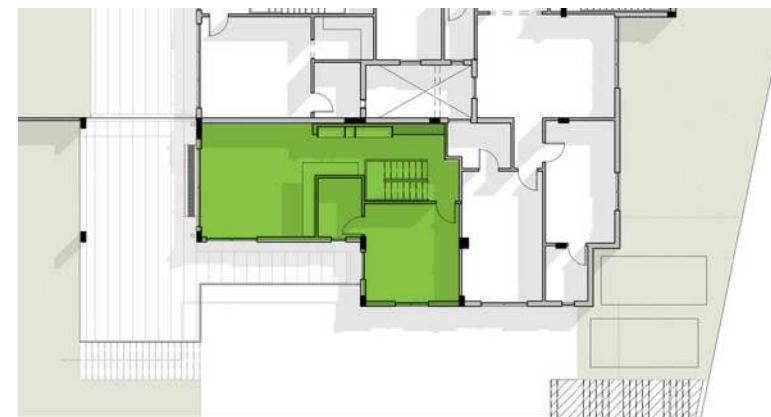




## ENVIRONMENTAL CHALLENGES



Unit 1



Ground Floor Plan

The ground floor part has a very high solar exposure and radiation as it's located in the SE and SW facades so it needs a passive strategy to enhance the indoor thermal comfort

### 1- GREEN CERTIFICATION SCHEME

## GREEN CERTIFICATES



Leading tool for advancing health and well-being in buildings



Initial Cost = 10% added  
ROI = 10-15%

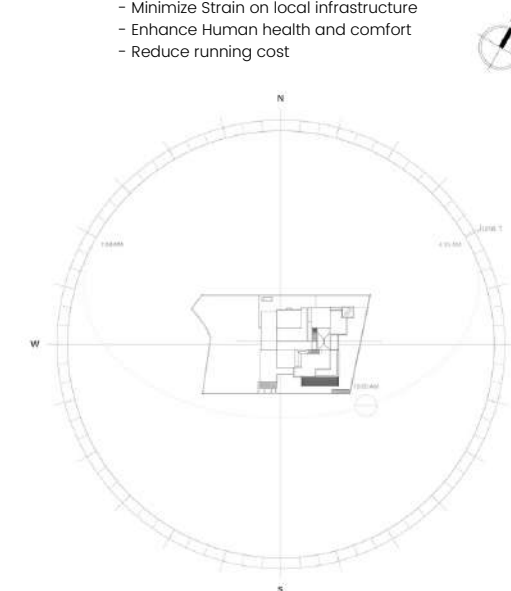
- Energy
- Water
- Habitat



Initial Cost = 20% added  
ROI = 20%

### WHY PASSIVE DESIGN ?!

- It will revitalize the community
- Minimize Strain on local infrastructure
- Enhance Human health and comfort
- Reduce running cost







# PROJECT PHASES



## Phase one

- Architectural Plans for chosen proposal
- Interior Shots and elevations
- Structural amendments
- Virtual Walkthrough
- Sample unit design and assessment



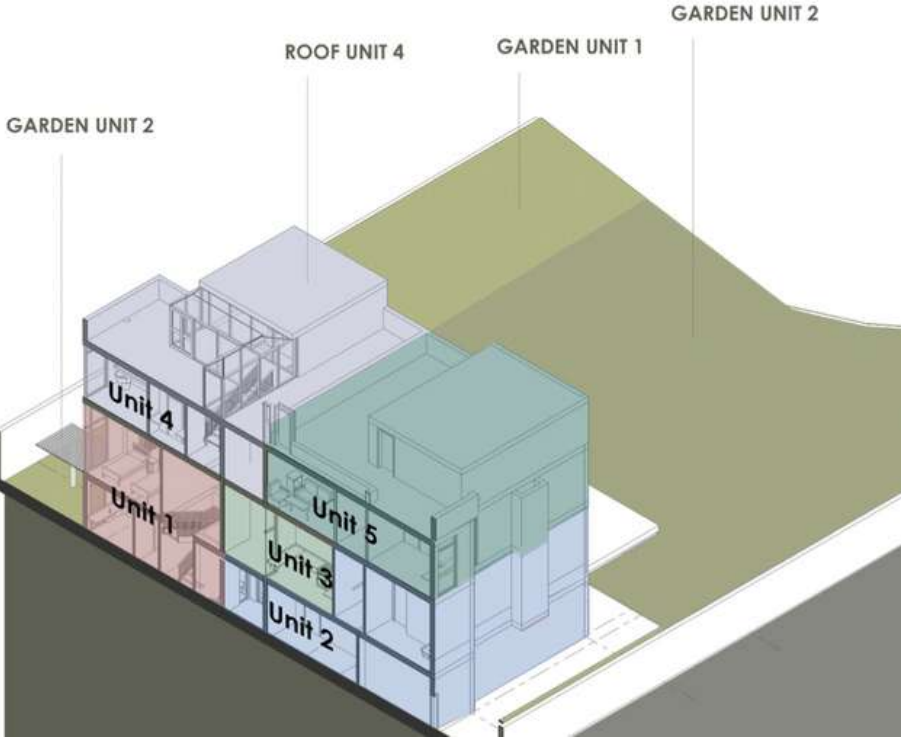
## Phase Two

- Generic environmental Strategies
- TARSHEED guideline credits
- Cost estimate



## Phase Three

- Specific design analysis
- Lighting analysis
- energy performance





# GOLDEN GATES VILLA

C O M F O R T A B L E   H O M E S



## Services include:

- Soothing and luxurious interior designs that integrates nature.
- Using building elements and space design to elevate occupants health and wellbeing.
- Thermal comfort analysis for users according to activity levels of spaces.
- Energy performance simulations for reducing electrical consumption.
- Lighting analysis for running cost reduction according to function and user analysis.

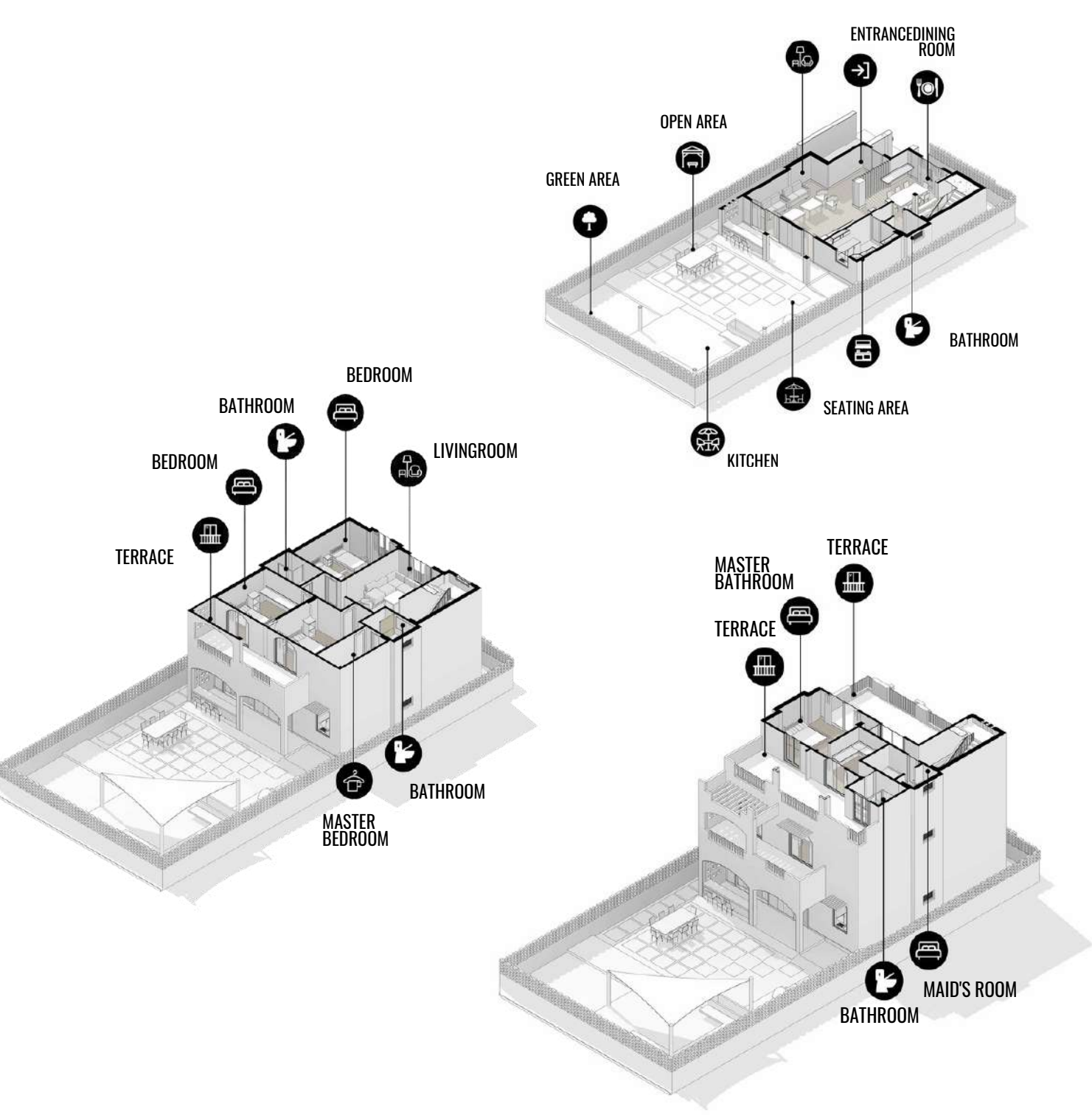














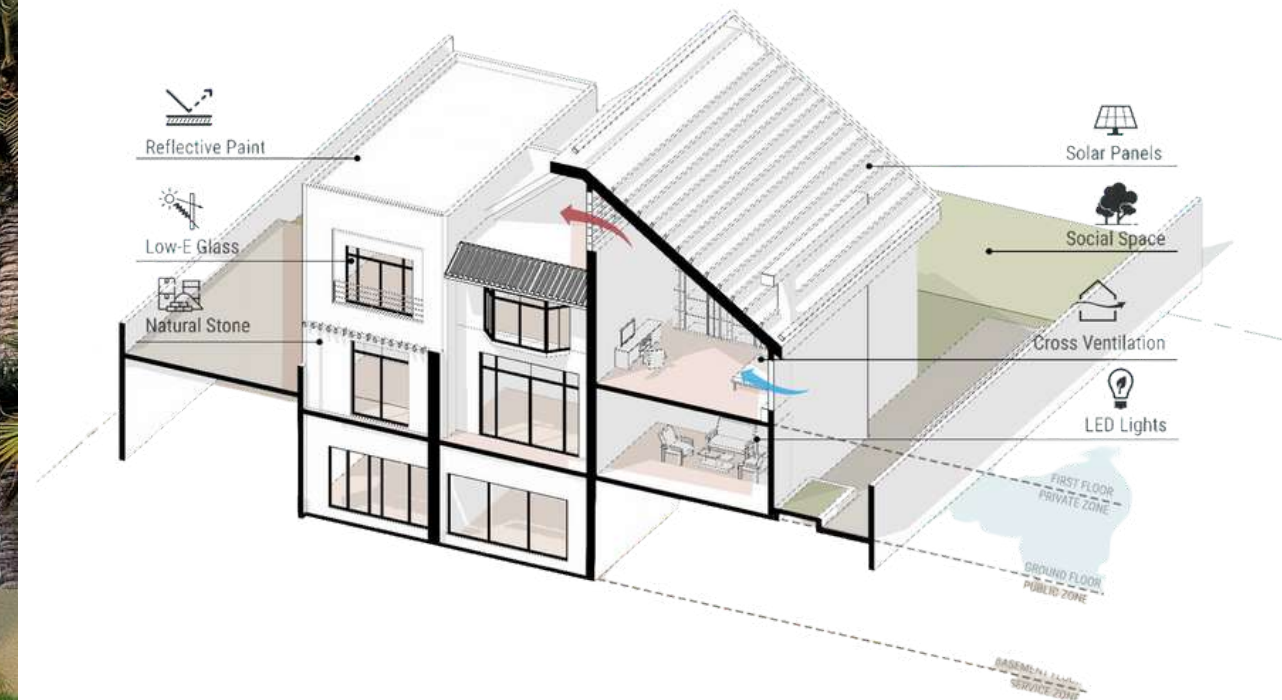
# JUMEIRAH VILLAS

COMFORTABLE HOMES





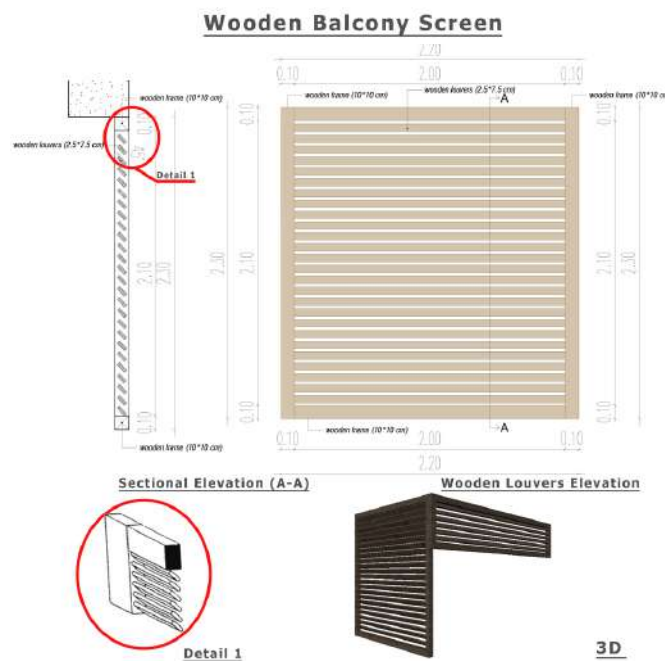
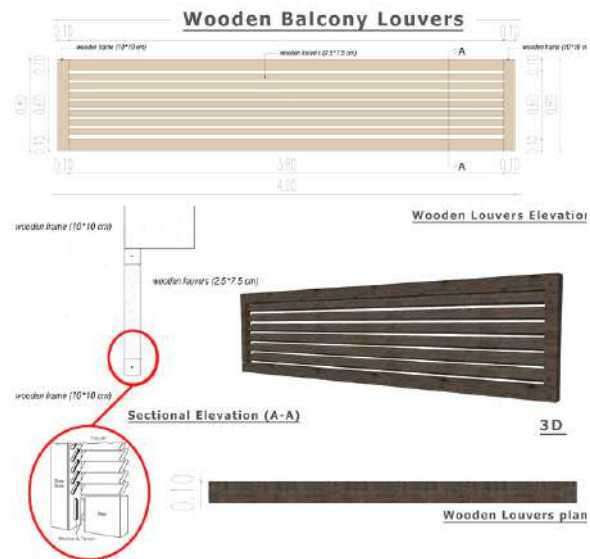
# PROJECT ANALYSIS



## Services include:

- Architecture concept design.
- Design development.
- Investment summary





## Services include:

- Facade retrofitting





# 04 | OUTDOOR SPACE DESIGN



Our outdoor spaces designs interweaves the beauty of materiality and local greenery to achieve the optimum landscaped solutions taking into consideration the water consumption from irrigation, in addition operation and maintenance to microclimatic influence of the ambient environment

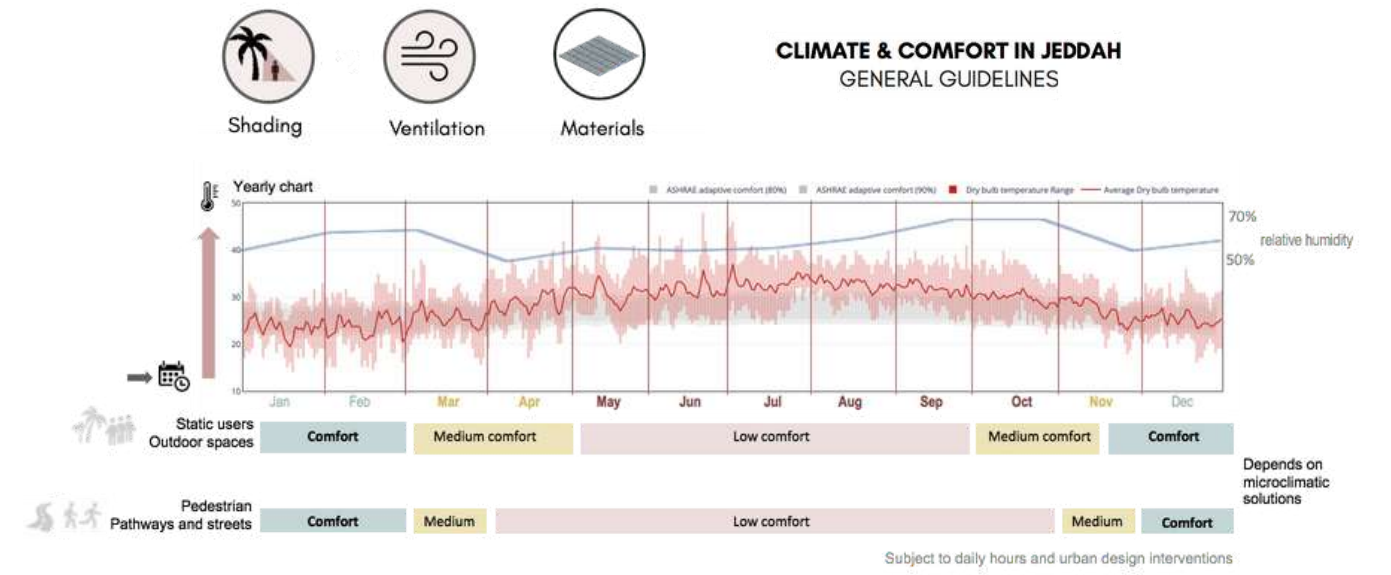
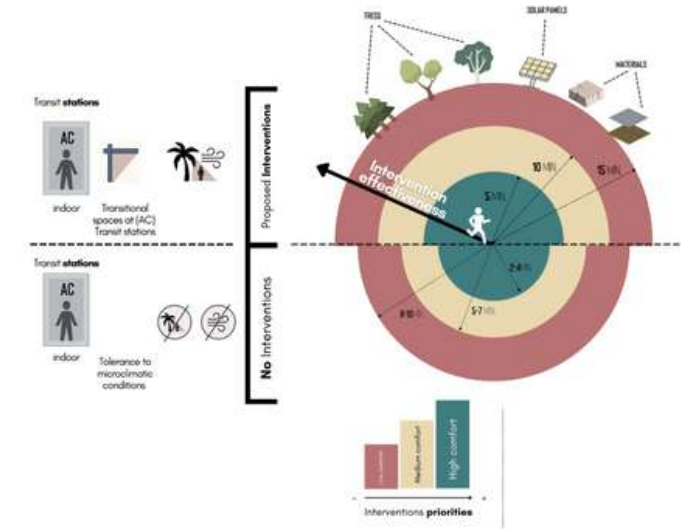
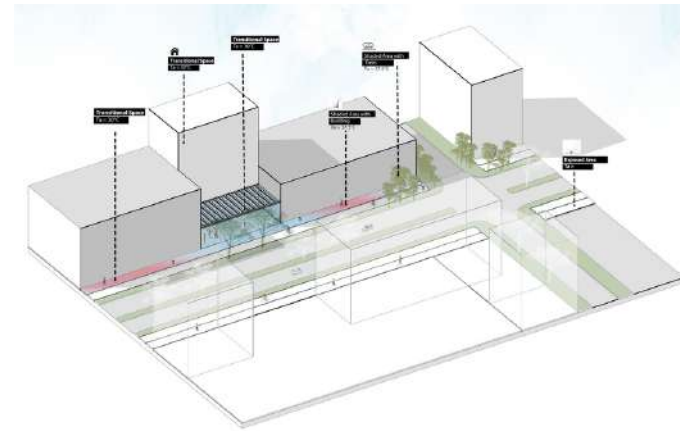


# UPTOWN JEDDAH, MASTER PLAN

OUTDOOR SPACE DESIGN







#### Services include:

- Thermal comfort analysis for users according to activity levels of spaces
- Microclimatic analysis of the urban masterplan to asses street orientation and geometry
- Walkability analysis and thermal comfort



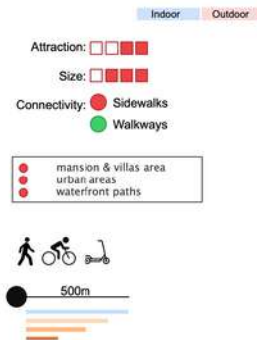
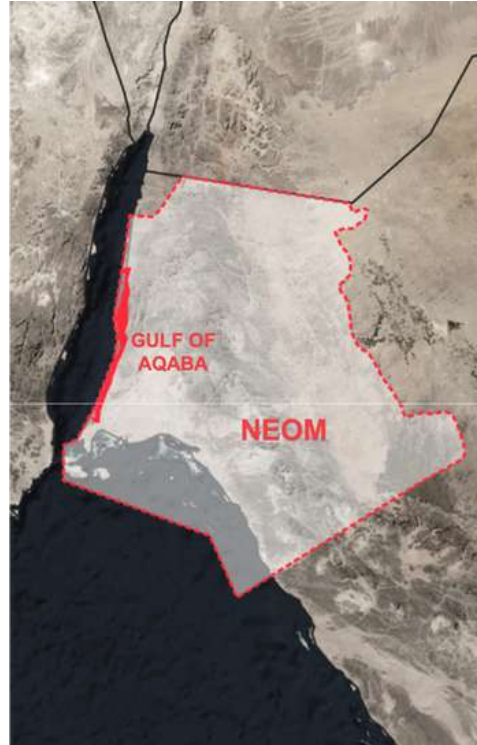
# NOEM



نيوم NEOM

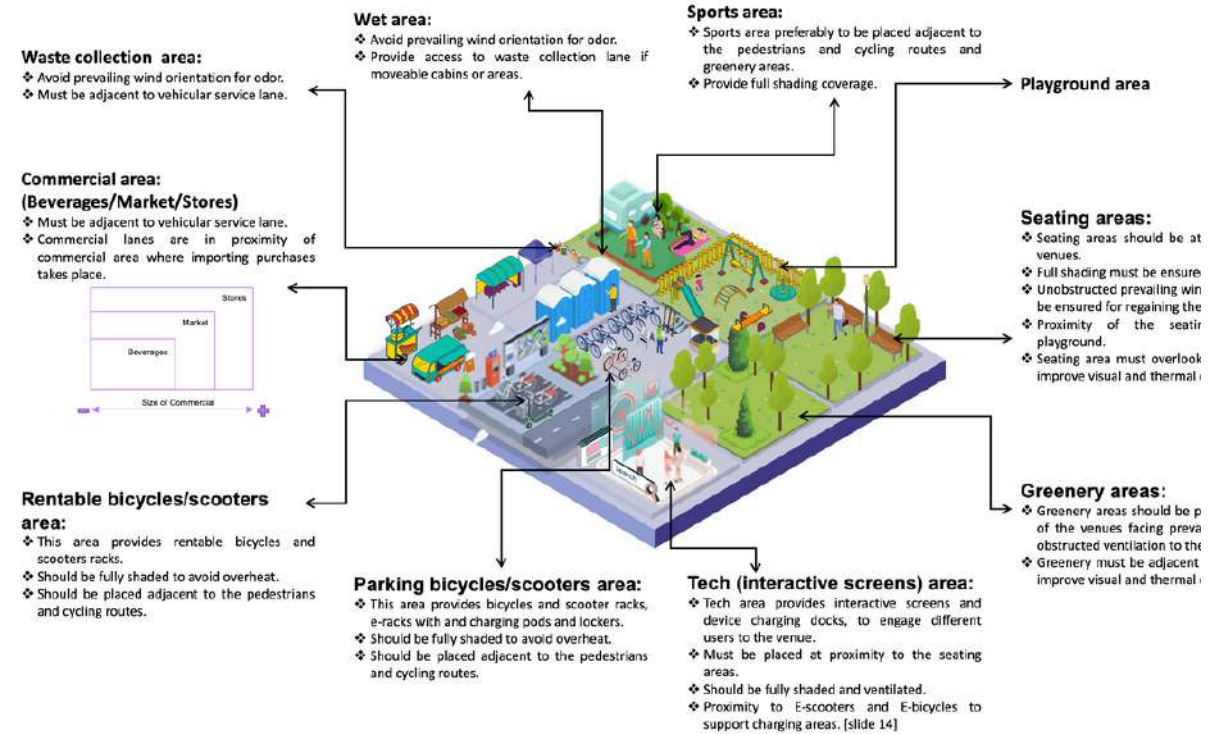
## Gulf of Aqaba Mobility Strategy

### THERMAL COMFORT WALKABILITY AND CYCLING GUIDEBOOK



## Venues Diagram

Primary, Secondary, Transitional, Residence and Refugee



Gulf of Aqaba – Mobility Master Plan – February, 2023





# LA POIRE

OUTDOOR SPACE DESIGN









# COOLING STATION

OUTDOOR SPACE DESIGN





# MAIN EVENTS & PARTICIPATIONS

July 2022

## Environas at EGBC

Environas was an exhibitor at the BIG 5 Construct Egypt as a silver member of the EGBC Egypt Green Building Council



November 2022

## Recovery Spaces for Walkability

Environas was a winning proposal at the Climate Action Hub in COP27 in Sharm El Sheikh, Egypt.

The session named: **Recovery Spaces For Walkability** presenting an interdisciplinary work, merging simulation tools, research, data gathering and analysis on the design of cooling interventions in hot urban environments to improve pedestrians thermal comfort.



**Climate action.**

November 2022

## Reducing the Housing Sector's Contribution to CO2 Emissions

Environas was an exhibitor in the MENA HOUSING FORUM in Cairo, Egypt founder presented a session titled: **Reducing the Housing Sector's Contribution to CO2 Emissions** giving an overview to integrate policies, research and design.





# MAIN EVENTS & PARTICIPATIONS

February 2023

## Business Resilience & Sustainability

Environas was one of the few selected businesses for the training workshops on:

Business resilience and Business sustainability program by Womenpreneur and GIZ, Egypt.

<https://womenpreneur-initiative.com/fit4future-business-program>

**Womenpreneur**  
INITIATIVE



Implemented by:  
**giz** Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

October 2023

## Building Climate Resilient Cities

Environas is a main Sponsor of the International conference in Lagos, Nigeria on:

**BUILDING CLIMATE RESILIENT CITIES: Activating Industry Roles and Government Institutional Policies for Sustainable Action**

<https://csbconference.com>

The main sponsor of the award “Green Steps in Green Buildings”



October 2023

## Towards Resilient Active Mobility Infrastructures in Hot Cities

Environas presented in the Climate Action Hub:

**Towards Resilient Active Mobility Infrastructure in Hot Cities** with Systematica on the role of walkability, bicycles, and scooters on improving last mile solutions for the integrated sustainable transport frameworks.

<https://unfccc.int/MENACW2023>

## Middle East and North Africa Climate Week 2023

**Riyadh, Saudi Arabia | 8 - 12 October 2023**  
Hosted by the Government of the Kingdom of Saudi Arabia





The company's team consists of a group of architects and engineers with a strong practice and research background which embodies the company's vision and growth. The scientific expertise of the company allows it to lead the field of environmental design solutions and interdisciplinary scientific research.



**DR. NIHAL AL SABBAGH**

Founder, design director

Dr. Nihal is the founder and director at ENVIRONAS. She is an environmental expert who taught and practiced architecture and urban design for over 15 years in a number of institutions and consultancies in both Cairo and in Dubai. She holds a Ph.D. from the AA School of Architecture in London, a M.Sc. in Sustainable Design of the Built Environment. Her environmental global acts started in 2012 to spread awareness about the carbon footprint through the Sustainable Summer School at the BuiD. In 2021 she founded the Design lab ENVIRONAS that aims to improve the Environmental impact through research-based designs. Dr. Nihal's publications focuses on urban environmental assessments, thermal comfort to improving walkability and passive cooling for the outdoor environments.



# Contact us



REQUEST A **MEETING** WITH US

Call us

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contactus@environas.com

We'd love to hear from you. Tell us more about your upcoming project goals, how we can meet your business objectives, and guide your environmental impact.

## Find us on social media

 LinkedIn – Environas

 Youtube – Environas/youtube

## Our locations

### Egypt

16 Badr Buildings, Ring Road, Sarayat El  
Maadi, Cairo, Egypt

### UAE

Defence Road, El Sebousy Building,  
Abu Dhabi, UAE