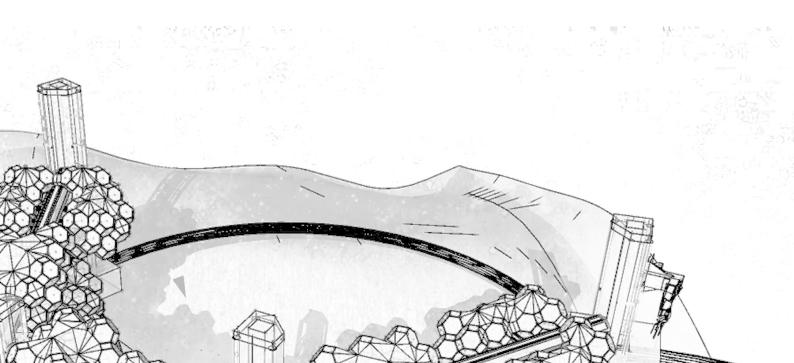
OULA AL-ERYANI SELECTED WORKS 2013-2022 PORTFOLIO



RESUME

CLOUDFO Thesis Post

BEHAVIOR Workshop,

ORASCOM LEAD Progra

MARTIAN Thesis, Unde

REINVENT Undergradu

REDESIGN Undergradu

SHUBRA Undergradu

URBAN A Undergradu

REINVENT Undergradu

NEO-ISLA Undergradu

INTERNSH Interior Des

T-SA FOR Other work/

OTHER WORKS

Using different softwares, modeling and rendering practice

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AL ERYANI



PERSONAL INFO

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REFERENCE

DR. THEODORE SPYROPOULOS [DRL DIRECTOR AT THE AA] Spyropoulos_Th@aaschool.ac.uk

EDUCATION & RESEARCH

Sep. 2020 - Jan 2022 London, UK	•	M.Arch ARCHITECTURE AND URBANISM [WITH DISTINCTION] Thesis: CloudForma I Spyropoulos Studio M.Arch Design Research Laboratory [AADRL]		•	Site Er Res
20110011, 011		Architectural Association		•	Quality Res
2019-2020	•	POSTGRAD PROJECT MANAGEMENT PROGRAM COURSES			RE.
Cairo, Egypt		Courses: Project Management Life Cycle from Tendering to Closing Project Bids and Contracts Project Planning and Control Techniques The American University in Cairo	2019 October 15 punt	•	FREEL
July 2018-	•	OBSERVATIONAL DRAWINGS AND SCULPTING WORKSHOPS	Cairo, Egypt		Int
Aug. 2018 London, UK		t-sa Forum I Takero Shimazaki Architects x AA Experiments and proposals for the design of enclosure pool for a grade II country house. Architectural Association	2017 Cairo, Egypt	•	ARCH Inte pro
			2014-2015	•	3D M
Sep.2012- May 2018 Cairo, Egypt	•	BSc. ARCHITECTURAL ENGINEERING The American University in Cairo	Cairo, Egypt		Teo Too The
		PROFESSIONAL EXPERIENCE			SKII
Feb 2022	•	MINIMAFORMS			3D MO AND 2
London, UK		Assisted in the preparation for Minimaforms recent installation: "The Order of Time" / L'exposition Mobile - Yona Friedman Exhibition			Re Sk
2019 - 2020	•	ORASCOM CONSTRUCTION PLC LEAD PROGRAM			VISUA
Cairo, Egypt		Lead Program Engineer Rotational program within the company's departments:			Oct Ad Pre
	•	Contracts and Claims department Responsibilities were: contract analysis responding to claims			RAPIE Ult La
		writing notice letters to all parties Creating and organizing list log of notices sent and received from all parties within the project.			PROG un
		Project: Al Masr Trauma and Burn Hospital (AMTBH)			OTHER
	•	Technical office Responsibilities were:			Mic Int
		designing interiors with all the fixtures and lighting. coordinating between the departments. reviewing BOQ. technical drawings of the stations elevations. designing metro signages and their placements within the stations. Project: Cairo Metro Line 3			LAN En Arc Fre
		Health, Safety and Environment Department		•	PUE
	-	Responsibilities were inspecting site and staff ensuring that all abide by the safety and environmental regulations. Project: Cairo Metro Line 3	2018 London, UK		T-SA Wa

ngineer

sponsibilities were: overseeing building work. inspection of work and supervision of construction work.

ty Control Department

esponsibilities were: Monitoring material testing procedures, approved building finishes in accordance to the specifications.

LANCE

terior design for residential projects from concept to PEP.

HITECTURE INTERNSHIP

terior design internship worked in all phases for residential ojects from concept design to schematic to renders and PEP.

10DELLING TEACHING ASSISTANT

aching Assistant in Revit in Digital Representation ools for Architects course. e American University in Cairo

LLS

10DELING, SIMULATIONS 2D DRAFTING

evit, Maya, Rhino3D, Grasshopper, Houdini, Cinema4d, Unity, ketchup, Autocad

IALS

ctane render Cinema4d, Lumion, dobe Illustrator, Photoshop, InDesign, remiere pro, After Effects

D & PHYSICAL PROTOTYPING

timaker 3dprinting, Robotic Hot-wire cutting aser cutting

GRAMMING LANGUAGES

nity C#/ Machine learning

ER SOFTWARES

licrosoft Office: Word, Powerpoint, Excel, Outlook, ternet Explorer.

NGUAGES

nglish [fluent] rabic [mothertongue] rench [B1, B2 in progress]

BLICATION

FORUM RENEWAL - FIGURE VOL.9

/orkshop experiments and proposal studies of the 'space in-between' figures.

CLOUDFORMA

Studio: Spyropoulos Studio. Tutors: Theodore Spyropoulos, Mustafa El sayed, Aleksandar Bursac Members: Oula Al-Eryani, Daphne Drayoui, Yunyu Huang, Yuji Huang Postgraduate Program, AADRL, 2020-2022

WHAT IF WE CAN AUGMENT THE WEATHER?

CloudForma establishes a symbiotic relationship between climate and resources. Beyond engineering, architecture, and infrastructure the project is about treating physical phenomena in their technological capacities and setting up cloud formations as an infrastructural network.

In its solid, liquid, and gaseous forms, water is a fundamental element of our being - vital and transformative as it is. Although currently dominant, water is finite. The world's dramatic transformations during the modern era provided us with massive infrastructural works aspiring to tame water. However, these mega-projects are now being denounced as they fall into decay and obsolescence.

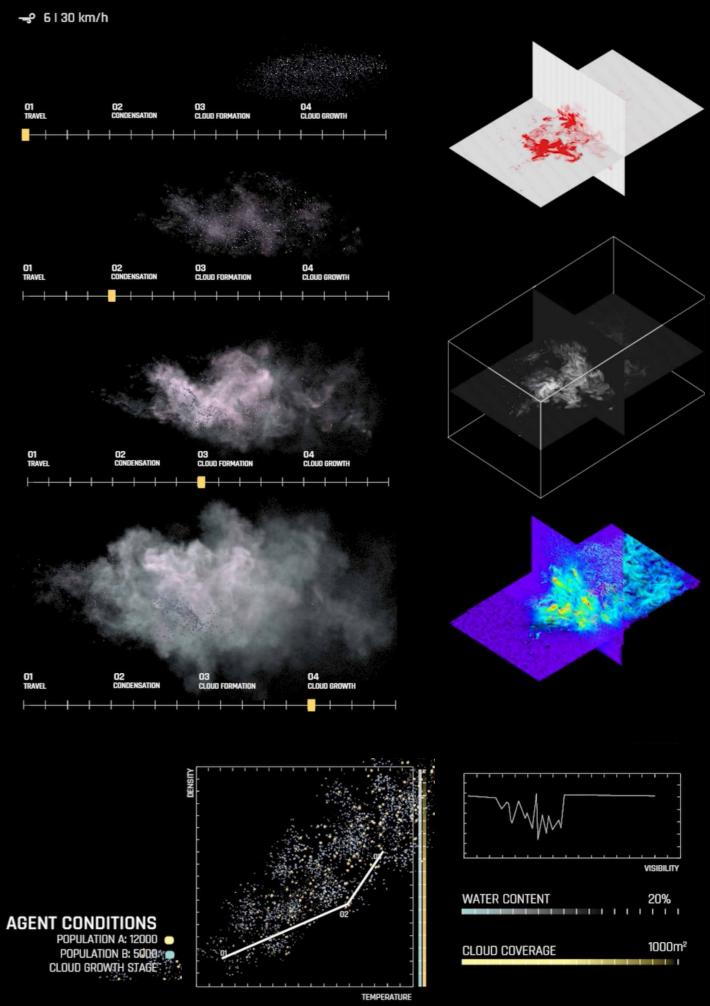
Looking closely at the elemental aspect of water, we focus on its unique capacity to change properties that, in turn, allows its continuous movement around the earth. Clouds are nature's distinct way to manage water around the globe.

CloudForma harnesses the cloud as an infrastructure where wind and atmosphere become a medium of their control. Beyond the fixed and finite resource management strategies, water delivery, water management, and water resourcing are addressed as an augmentation of natural systems.

The augmented weather system employs machine learn-ing strategies to facilitate a feedback loop with the environment. By engineering the tipping points that trigger cloud formation, aerosol-agents perform as scaffolding elements promoting condensation in areas where humidity levels allow it. When clouds start to form transport-agents promote cloud growth by dropping the temperature and through a choreography that directs the cloud to the place of release.

Throughout the entire design research, opportunities and speculations were seized as a result of both the physical and digital tests. The experiments involved a thorough understanding of the parameters that influence the behaviour of the cloud.

To uncover the invisible, we propose a hybridised ecology between humans and infrastructure. The cloud's absolute ephemerality challenges the laws of stability and solidity. In our project the architectural design resists "form" or "shape." It is a design that regulates the very substance of water, artificially reproducing a natural phenomenon that emphasises our connection with the physical resources in the most primal sense.

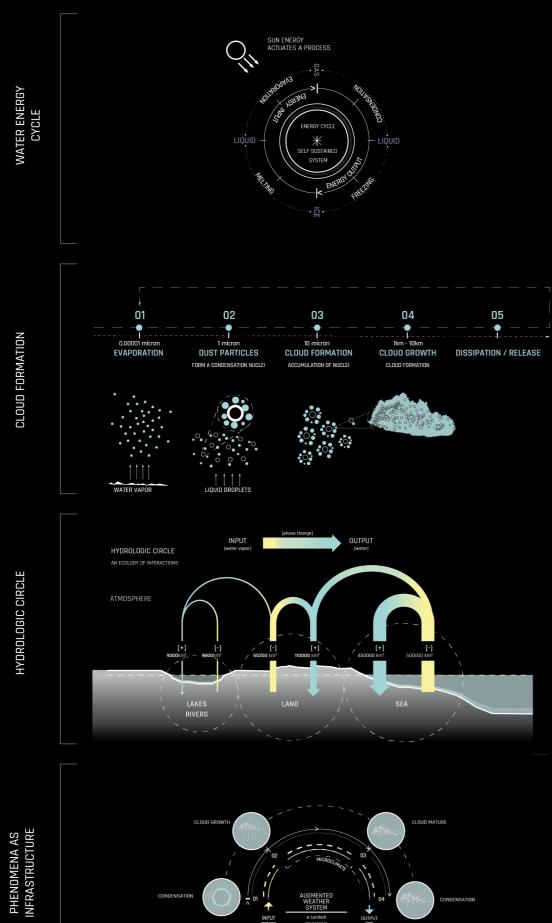


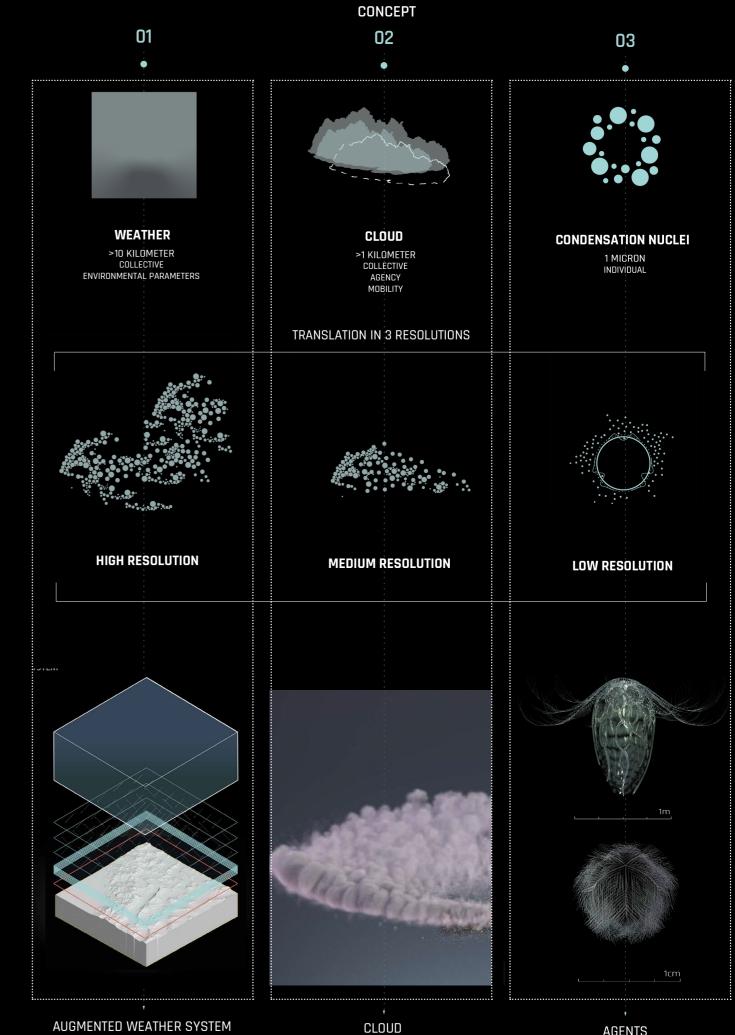


ENVIRONMENTAL CONDITIONS

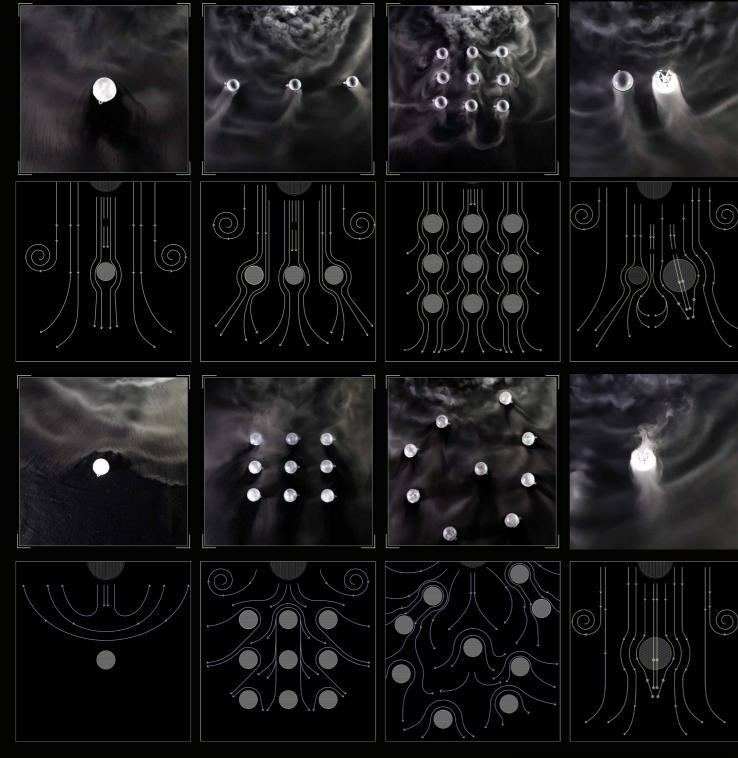
15%

LEARNING FROM NATURE





AGENTS



FROM PHYSICAL TO DIGITAL SIMULATIONS

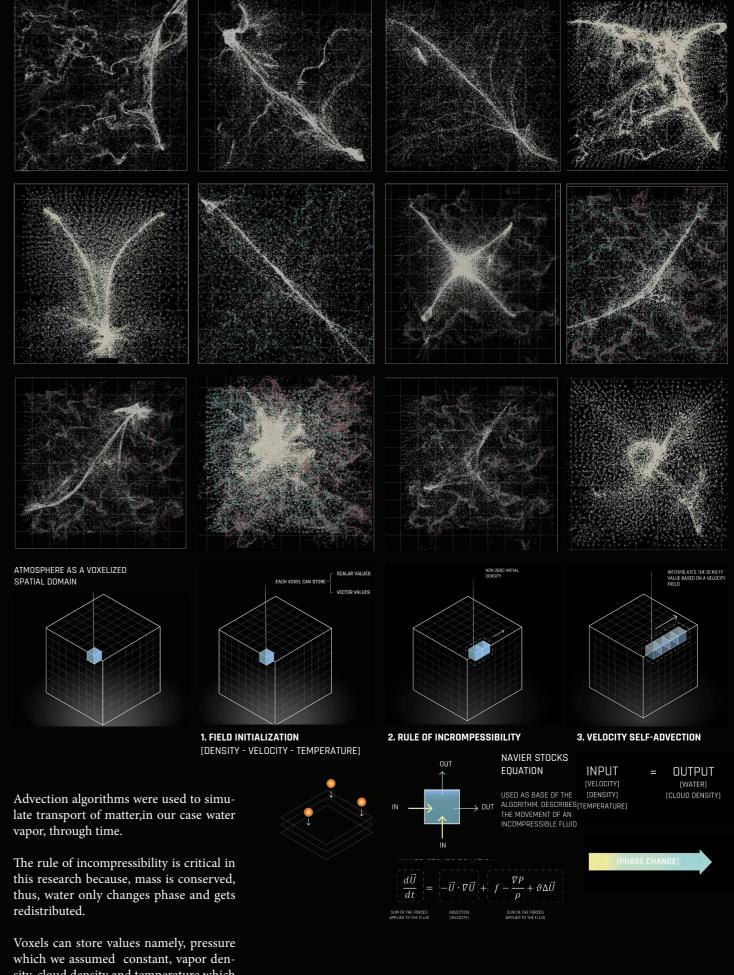
Throughout the entire design research, opportunities and speculations were simultaneously made and tested as a result of the physical and digital tests.

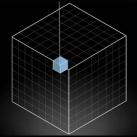
As an abstraction of our physical experiments, we transfered our observations into the digital 2d space and we explored how a warming agent influences its surrounding atmospheric environment. The setup of the simulation consisted of a temperature field. The parameters were defined that influenced the formation process; the temperature of the agent, humidity and density.

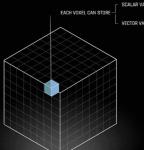
A number of iterations were made based on introducting several agents into the study of the temperature influence. The simulation resulted in a clear negotiating patterns that emerged between the agents.

SIMULATION RULESET | BASED ON VOXELIZED SET UP

Moving forward with the research observations that were made from the physical experiments were translated into the digital world, the rules of the simulation were set up according to defined spatial domain. The spatial domain in the simulation represents "the atmosphere". The spatial domain is divided into voxels, these voxels, individually, saves some property at a current time.







sity, cloud density and temperature which are the parameters that we controlled.







Fan intensity: Med.

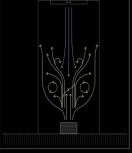






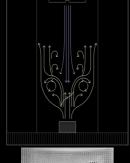
Fan intensity: High Humidity: 59-85% Temperature: 16-17c





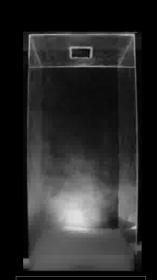
3 atomizer Fan intensity: Me

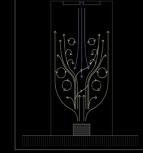




3 atomizer

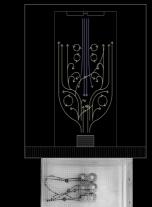
Fan intensity: High Humidity: 45-93% Temperature: 20-19c





6 atomizer Fan intensity: Med.





6 atomizer Fan intensity: High Humidity: 60-92% Temperature: 18-17c





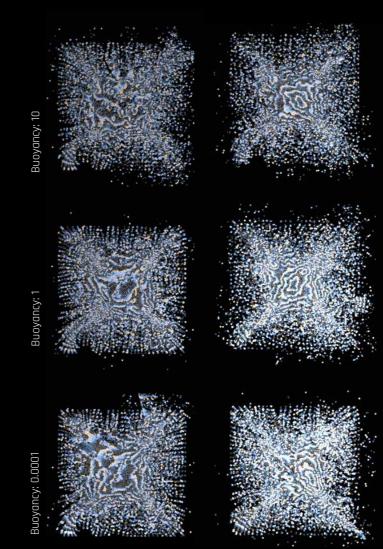
9 atomizer Fan intensity: Med





9 atomizer Fan intensity: High Humidity: 48-93%

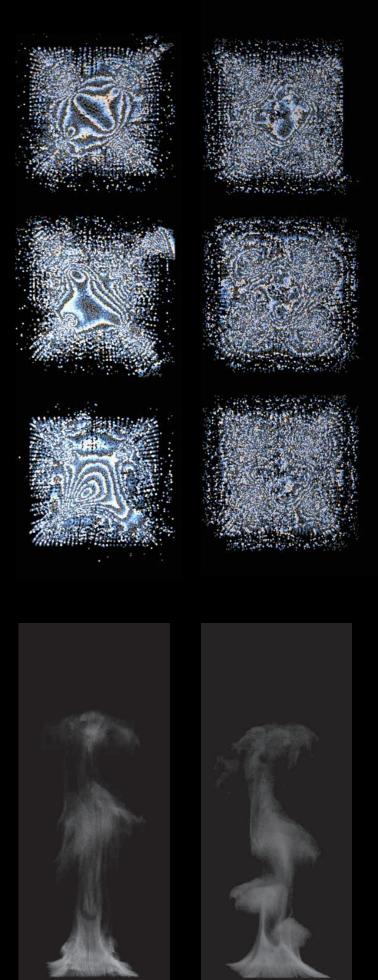
Temperature: 24-20c



DIGITAL SMOKE SIMULATION



Density = 70

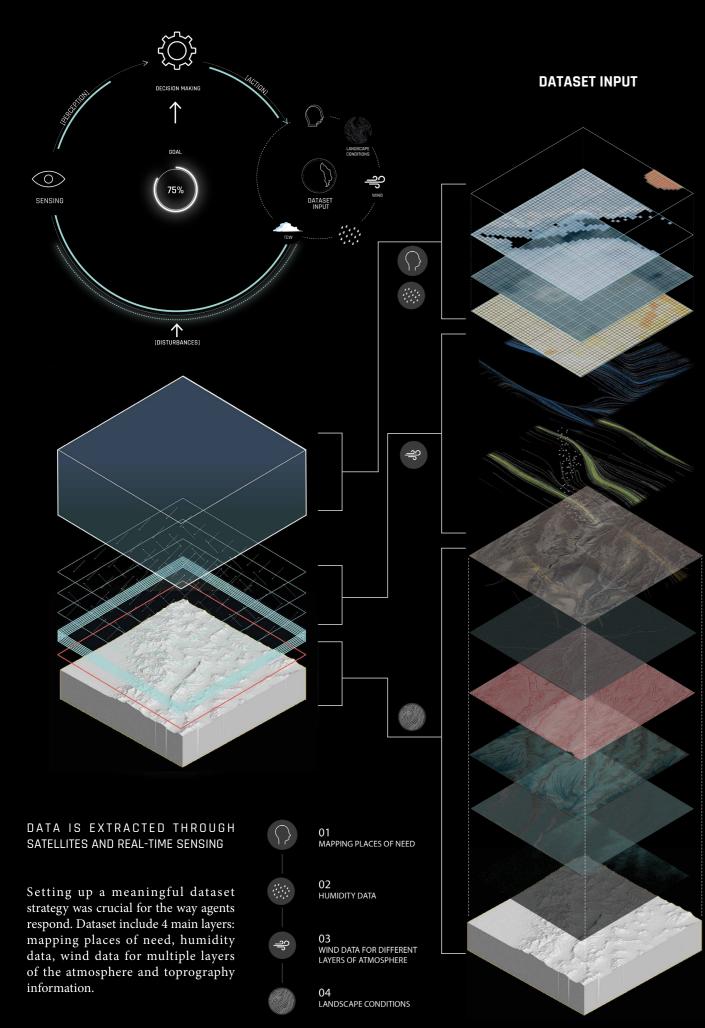


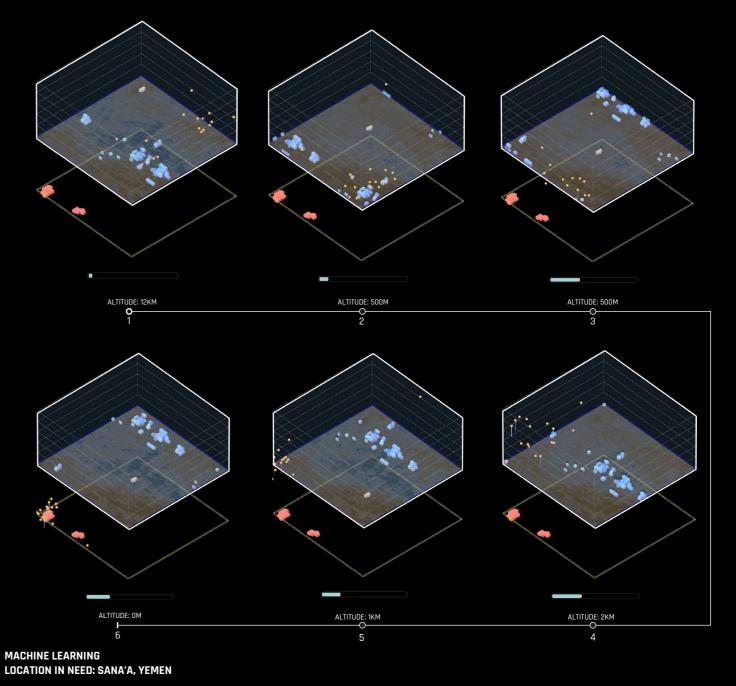
Density = 100

Density = 100







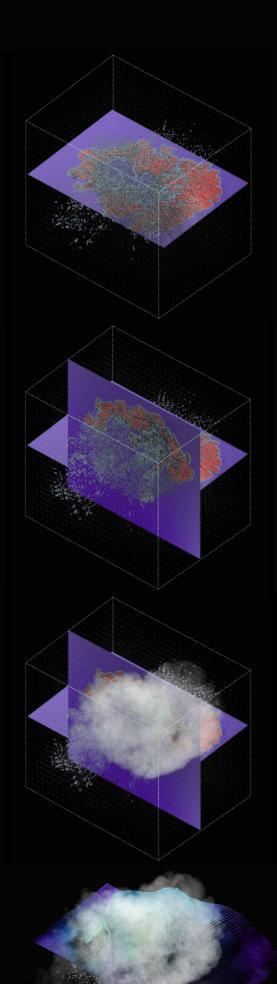


AUGMENTED WEATHER SYSTEM

Machine learning is used in the augmented weather system to facilitate a feedback loop with the environment. The system is driven by goals and the intelligent agent decides on its own what it should do next to get more information. It continuously extracts, understands data and updates with real-time sensing and eventually acts on it. Humans are out of the loop into a cybernetic system. The strategy of communication is based on data constantly evolving and changing.

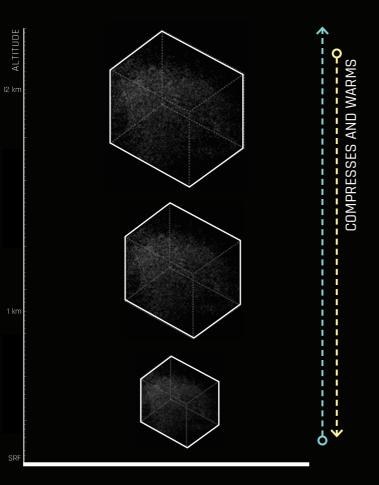






UNDERSTANDING MECHANICS OF CLOUD

PARCEL EXPANSION - COMPRESSION

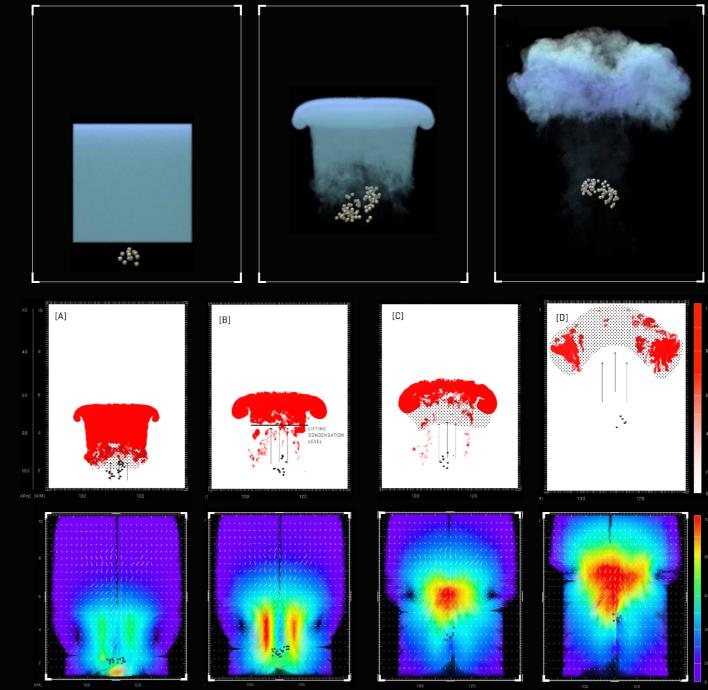


ATMOSPHERIC PROPERTIES

WATER VAPOR NUMBER OF AGENTS

ALTITUDE	9.536 kn
PRESSURE	30mb
TEMPERATURE	-38.2 c
DEW POINT TEMPERATURE	-38,2 c
RELATIVE HUMIDITY	100%
DENSITY	
WARMING BY RELEASE OF	
LATENT HEAT	12 c

ANALYSIS OF CONVECTION OF A CLOUD

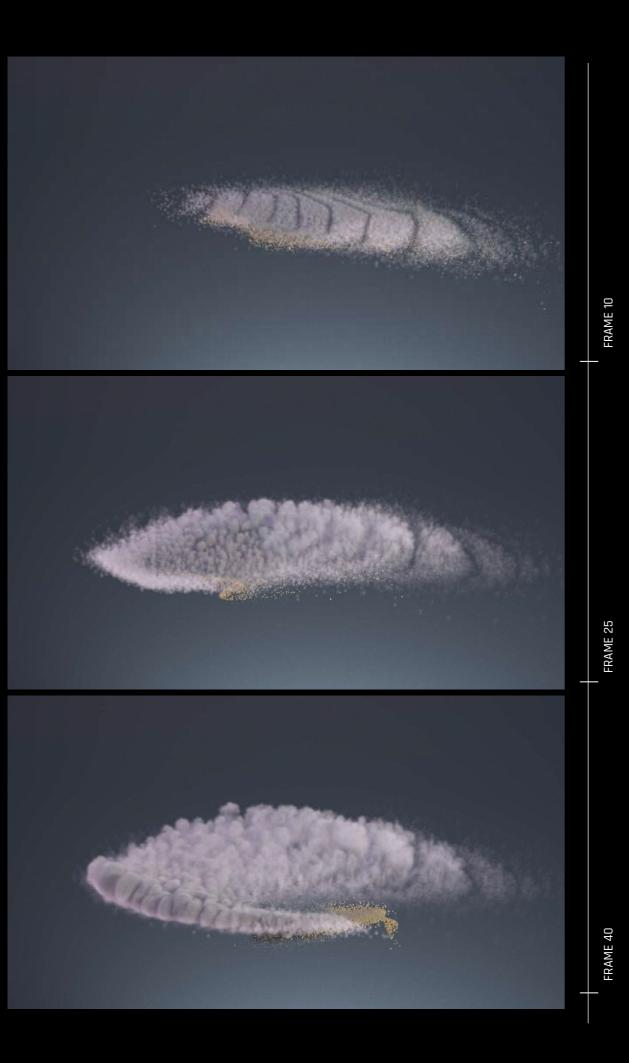


A PARCEL OF AIR

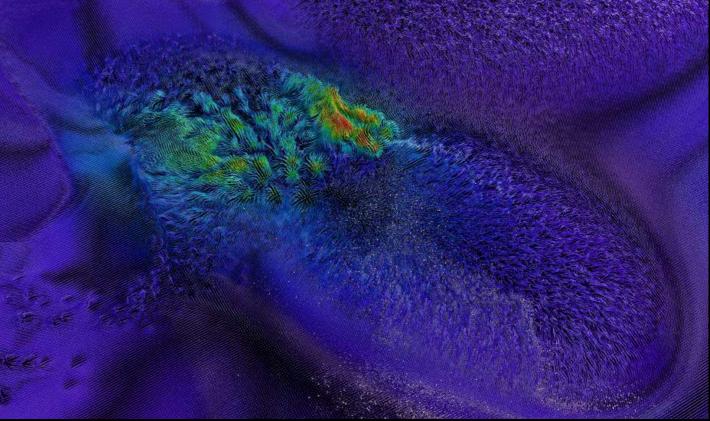
Each cloud differs in shape and density based on certain conditions that involve temperature, humidity percentage and direction of upward drift. Atmospheric properties include altitude pressure temperature dew point which we will assume as constant for the purposes of our simulations. NUMBER OF AGENTS: 10,000 DIRECTION: UPWARD/VERTICAL LIFTING AIR INITIAL TEMPERATURE AIR: 35c DEW/CONDENSATION: 10c CLOUD ITERATION TYPE A





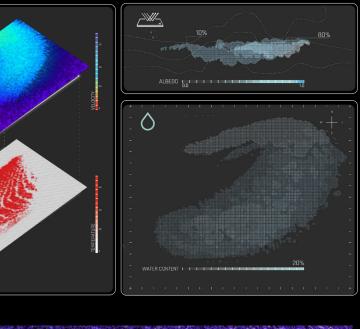


CLOUD COVERAGE 1000m²



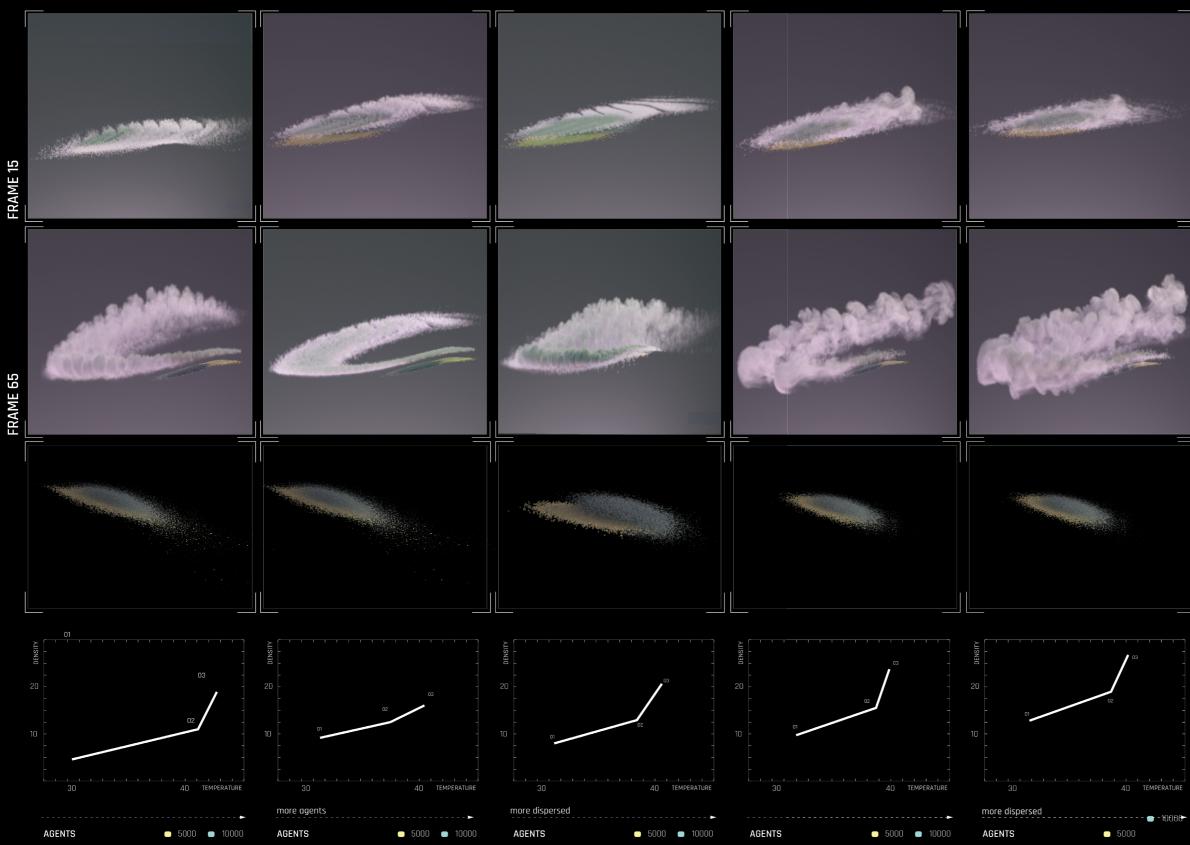
CLOUD TYPE A

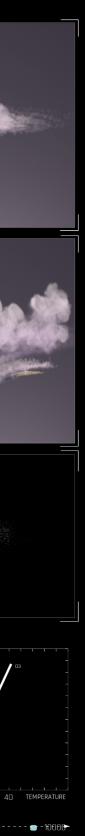
4 types of clouds were developed based on environmental conditions and variating agent populations. The agents' input triggers the velocity, density, and temperature field. From this wide range of cloud morphologies, their characteristics were evaluated. Their features are explored in digital space. As a result, different cloud morphologies were concluded. By programming the agent behavior and exposing them to certain environmental conditions the emergence is controlled and, subsequently, the transportation of a wide range of cloud types which exhibit different performative qualities. The outputs were evaluated based on three properties that constitute each cloud's identity finally defined by three properties 1. Water content. Based on which we can judge how much is of the goal is succeeded.



2. its capacity to reflect radiation and heat named albedo. This property along with the coverage can define how, and how much they can mitigate conditions of extreme heat. Affecting the microclimateAspiring finally to synthesize a variety of atmospheres that can eventually end in microclimate appropriate for living.

ITERATIONS BASED ON SWARM BEHAVIOR

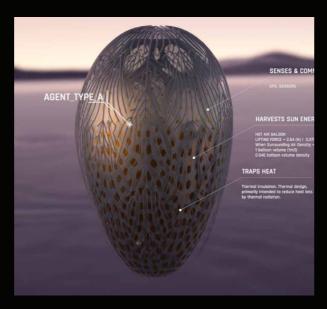






1m

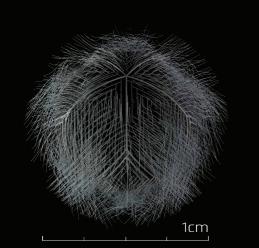


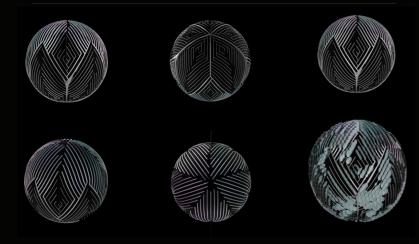


AGENT A - TRANSPORT AGENT

The two types of agents are mainly characterized based on their behaviors and their interaction between each other as well as their relationship and response with the environment.

AgentA are characterized by their ability to harness the sun energy and through the use of this resource, sail through the atmosphere by also harnessing the wind.

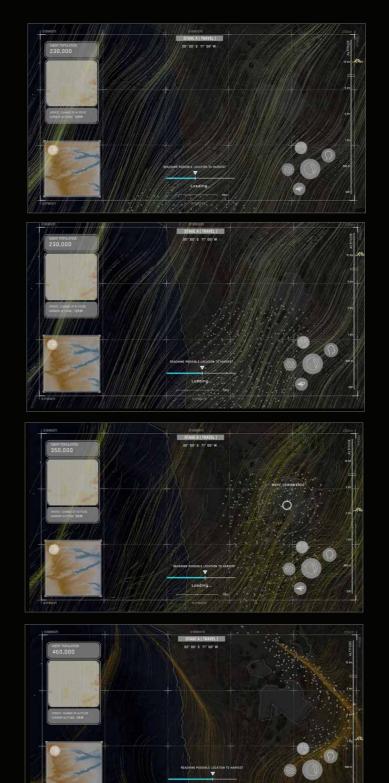






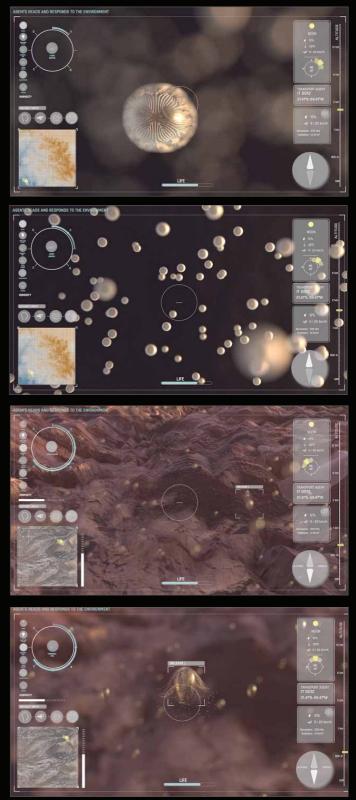
AGENT B - CONDENSATION AGENT

Agent B as condensation agents, are characterized by its immediate relationship with the environment through its hygroscopicity.





From the high resolution of the weather scale where agents sail in the winds seeking for moisture and to the lower resolution of the agent scale that undergoes distinct phases from transport through adjusting its altitude.





As the agent travels by harnessing the wind, the condensation agents are released as population and the amount and distribution of condensation agents differ according to the different environmental humidity.







RELEASE OF WATER SCENARIOS





RELEASE OF WATER SCENARIOS

BEHAVIORAL NEIGHBORHOODS

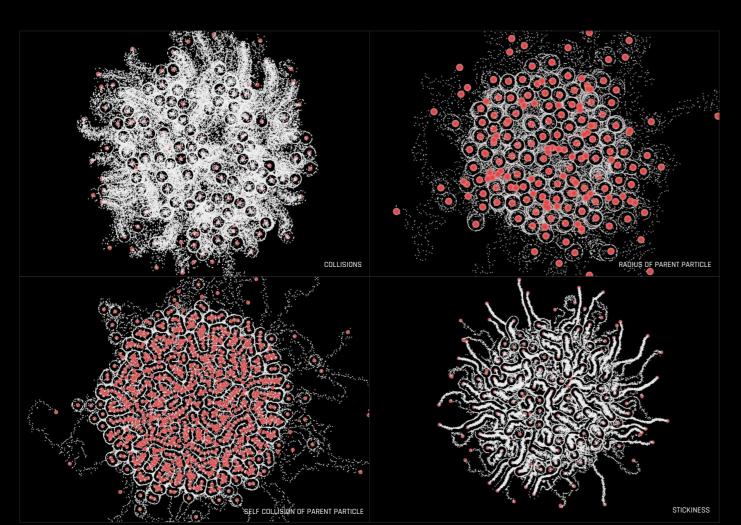
Project: Workshop, Masters AADRL (Architectural Association) Studio: Agent Behavior Workshop: by Mostafa El Sayed, Aleksandar Bursac Members: Oula Al-Eryani, Daniella Bedoya, Samaneh Karimelahi, Gaurav Janendra Postgraduate Program, AADRL, 2020-2022

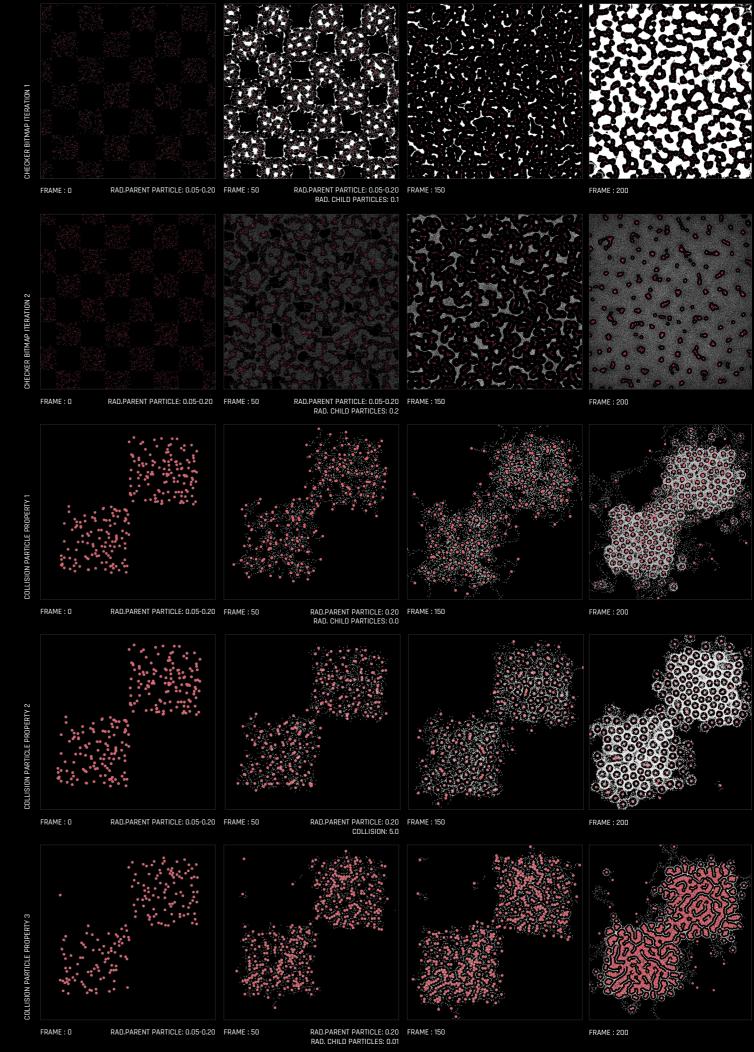
EMERGENT BEHAVIOR IN PATTERNS

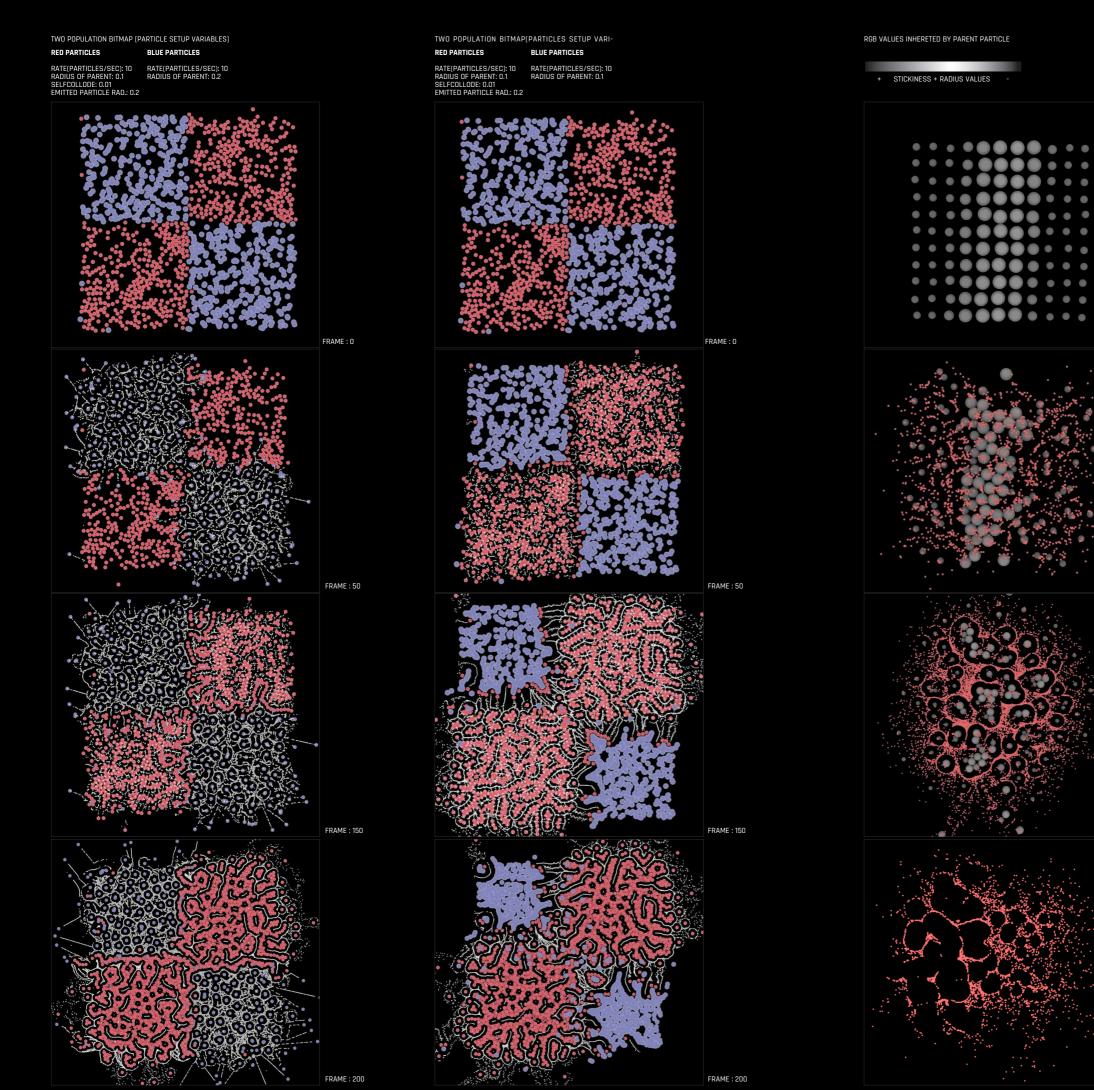
Through studying patterns and behaviors in nature, patterns in nature seemed to be completely internally driven through population, where particle be-havior (or agent behavior) in the population always seemed to drive the emergent patterns that we see in nature.

In this workshop, Maya nparticles engine was used to study the different behaviors that are triggered by inputing different particle properties with no exter-nal forces applied. Particles are very simple compu-tational objects that have a direction in motion in space.

The research was focusing on two agent types, one was the generative agent (the parent particle) and the second was the generated particles (or child par-ticles). Certain properties existed within the parent particles, these internally drove the particle's initial behavior.







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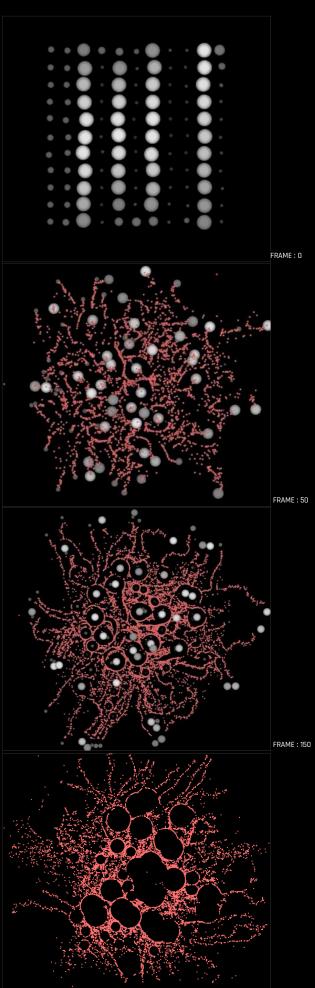
FRAME : 50

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ORASCOM CONSTRUCTION

LEAD Program Engineer May 2019 - September 2021 Project: Cairo Metro Line 3 Stations Location: Cairo, Egypt Professional Work

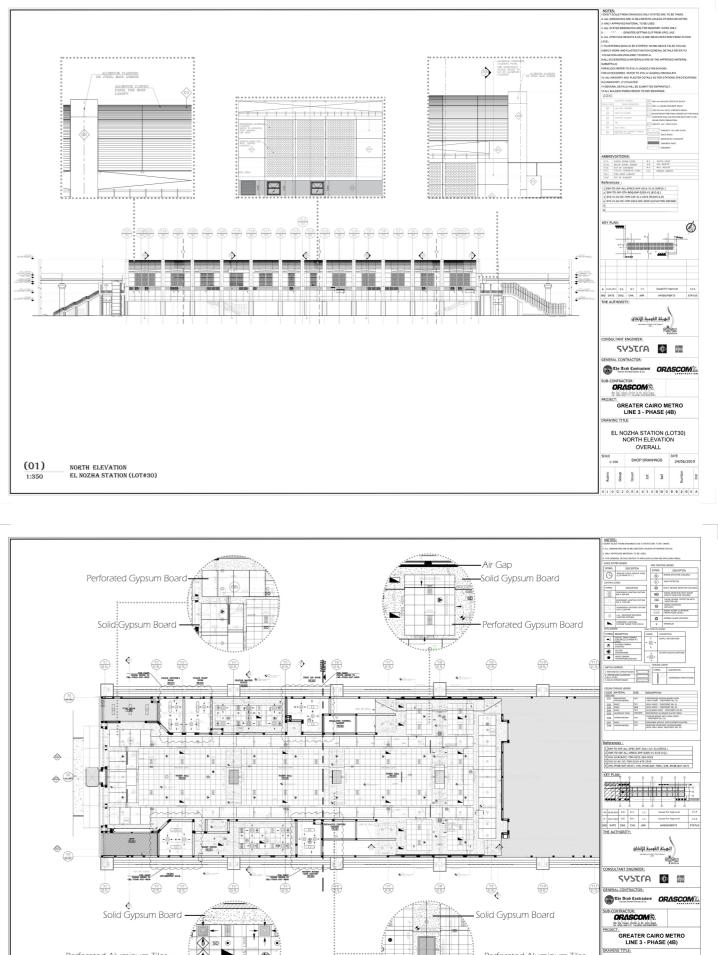
Lead Program Engineer is a rotational program within the company that includes working in different departments such as Technical office, site, quality control, planning and cost control and Contracts and claims.

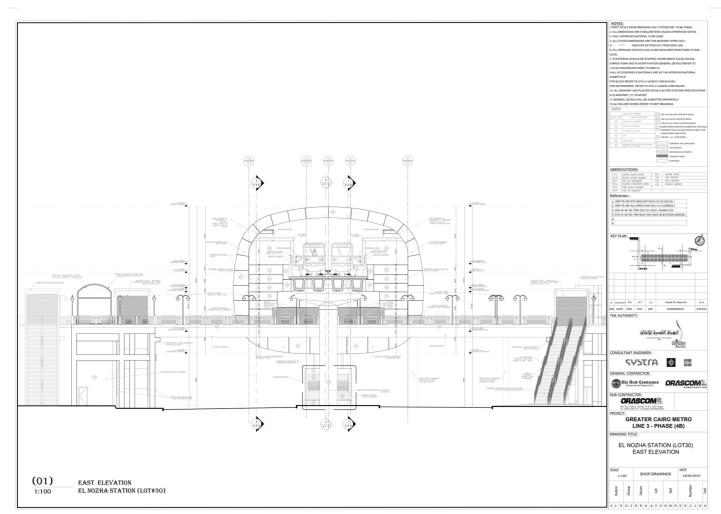
The following is a sample of the working construction drawings that I have done in the technical office phase as a Lead Program Engineer in Orascom Construction.

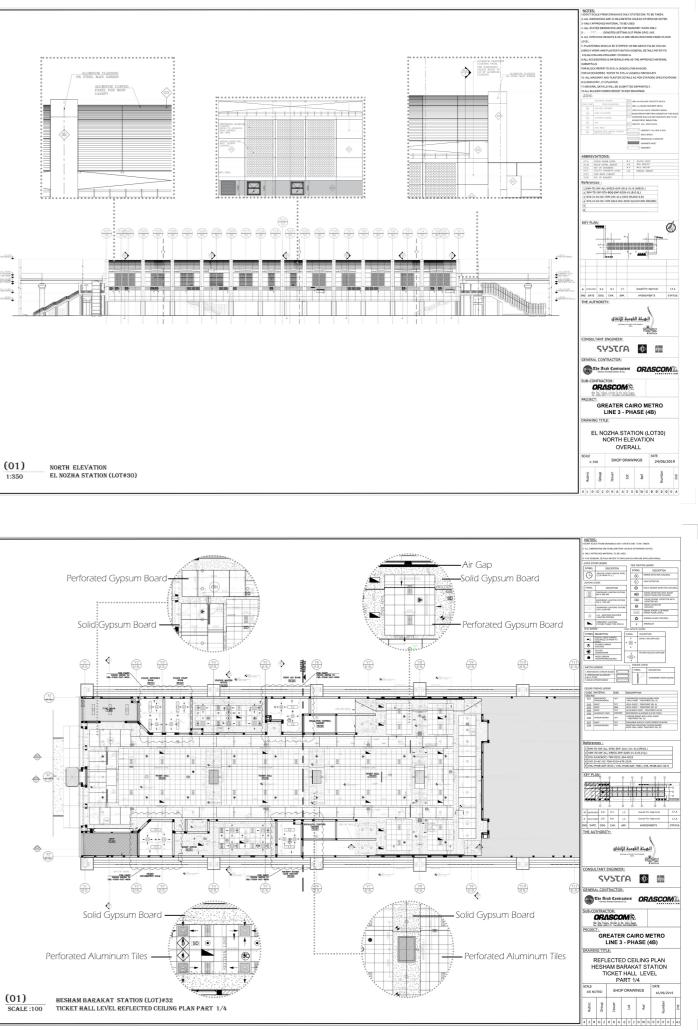
The project is a 4 Metro Elevated stations in Cairo, Egypt constructed by Orascom Construction and designed by DAR.







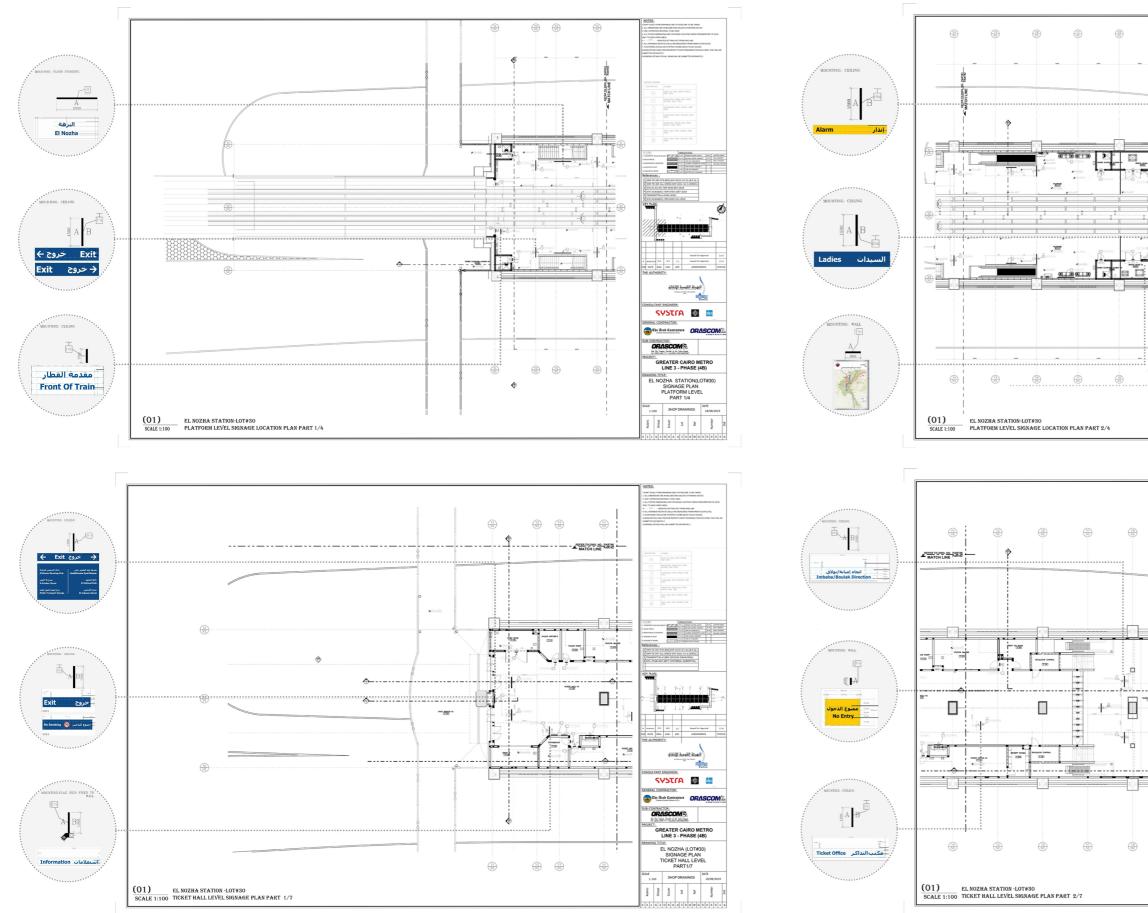




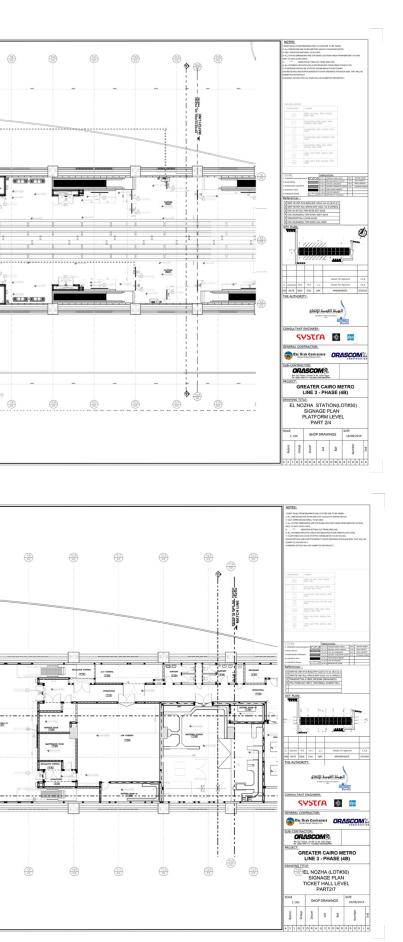
Metro Signage Plans

A sample of the work I have done on placing signages at locations without any clashes with other systems (through coordination) within the metro station.

Signages are used to help the users and guide them to their prefered destinations. All signages are located within the view range.



plans, quantity and reviewing fixation details provided by the supplier and material submittal.



My work on signages involved creating a construction document package for all 4 stations that includes signage location

MARTIAN HABITAT

Project: Bachelor's Thesis Project Studio: Thesis Individual Location: Vares Marines, Planet Mars Spring 2018 Undergraduate Course, The American University in Cairo

Questioning Habitation Typology

Set in the year 2041, this project visualizes what habitation on Mars would look like. Habitation on Mars plays an important role not only providing shelter or the minimum necessities for a life on

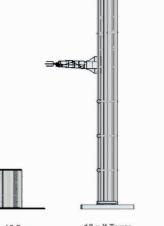
Mars but also introduces technology that will help sustain the human life on Mars. The main criteria for the Martian habitation are flexibility, speed and ease of construction.

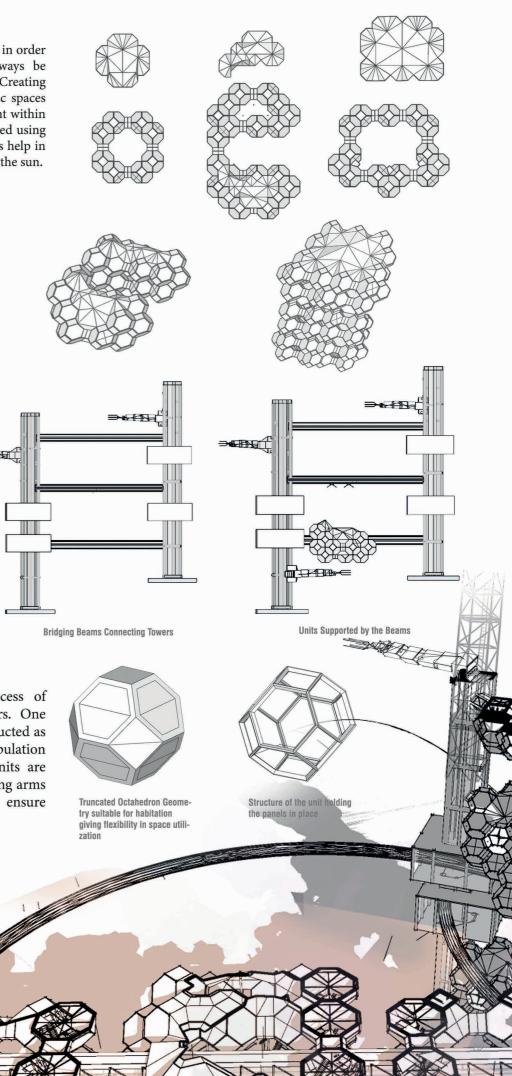
This project proposes flexibility that is based on fast track 3D construction and at the same time offers the users the choice and flexibility of lifestyle in a context with many constraint and extreme environment. The project grows incrementally vertically and horizontally with the growth of the population.

By questioning the typology of habitation in general, taking the approach of extreme conditions, the project aims to find innovative ways self sustainability from design approach of the utilization of interior space to rapid construction.

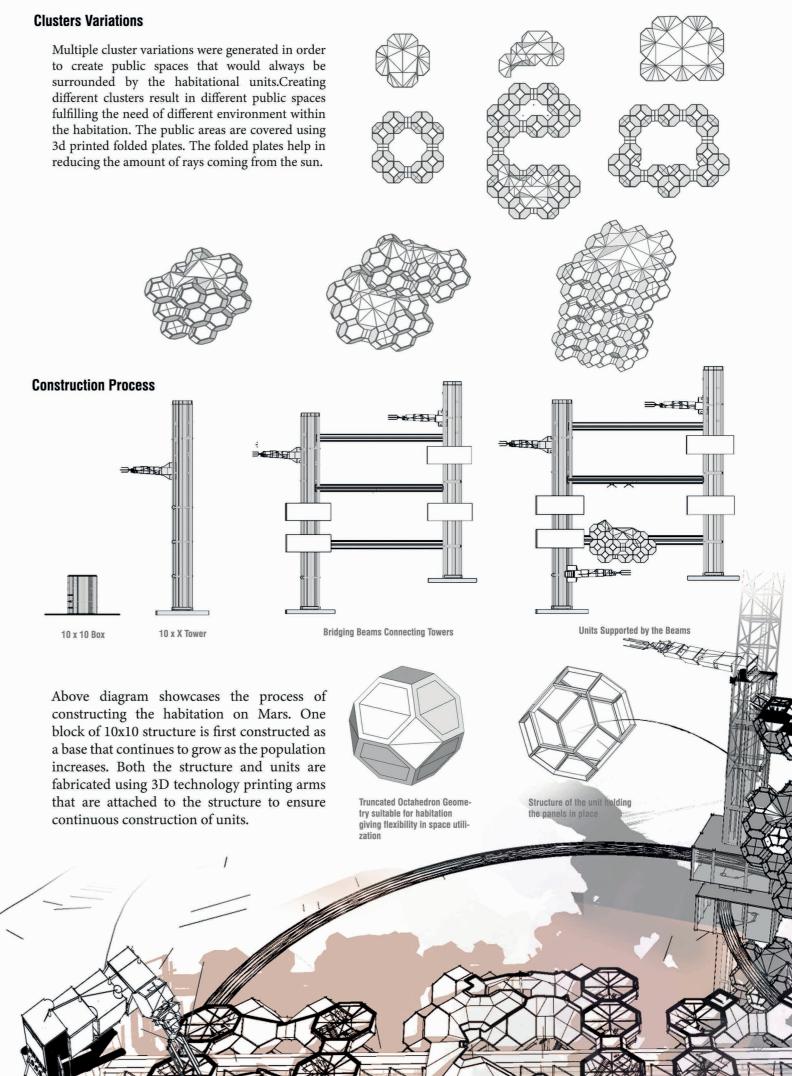


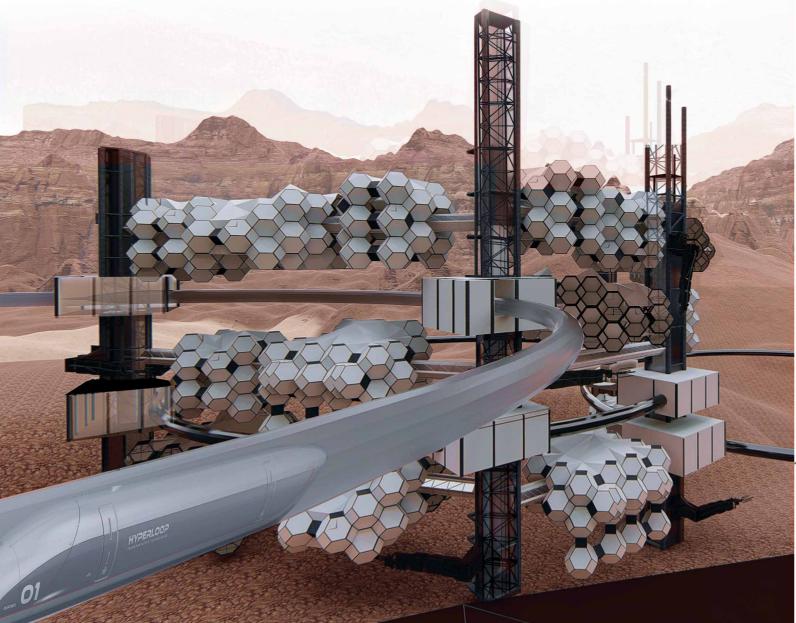


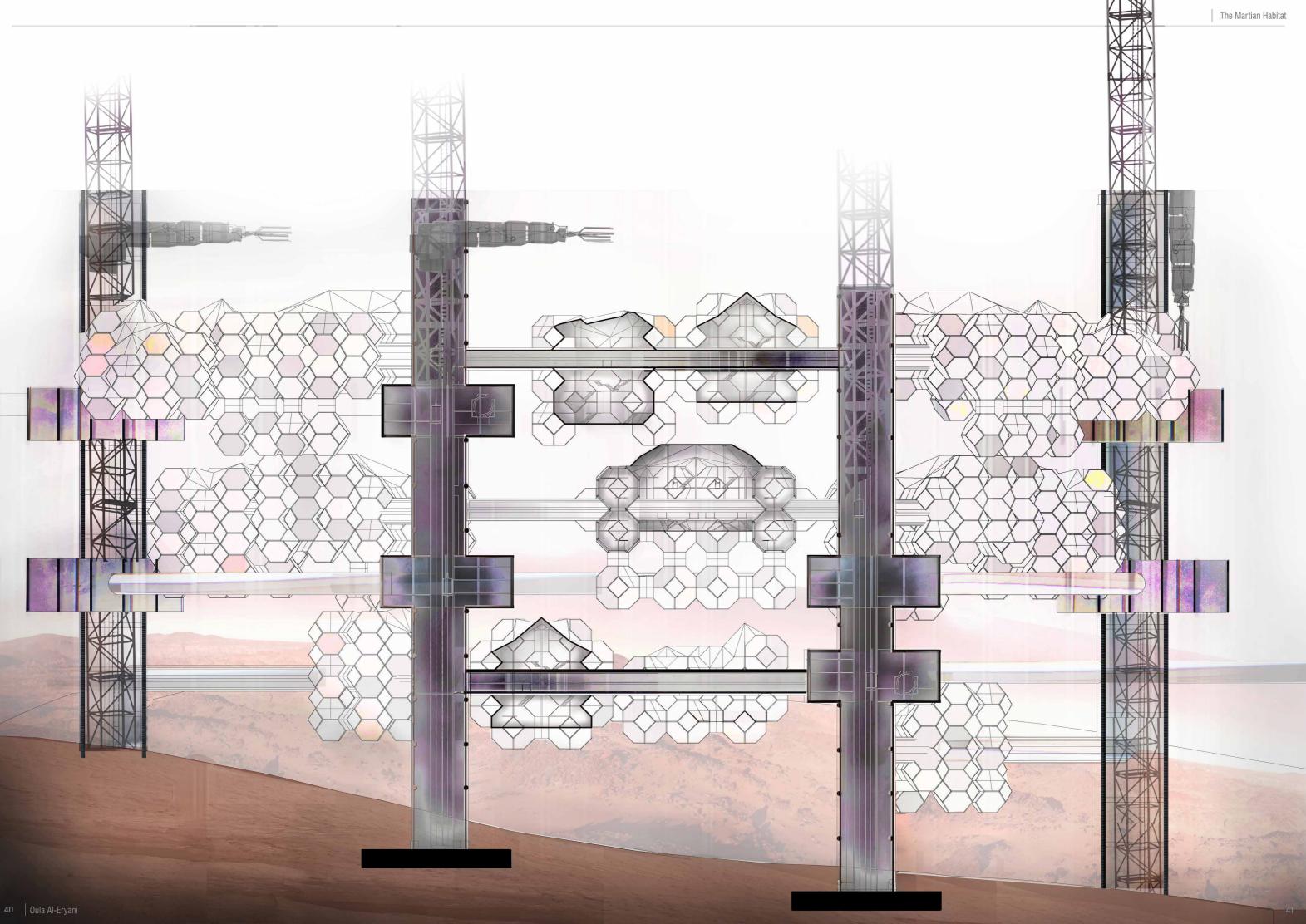






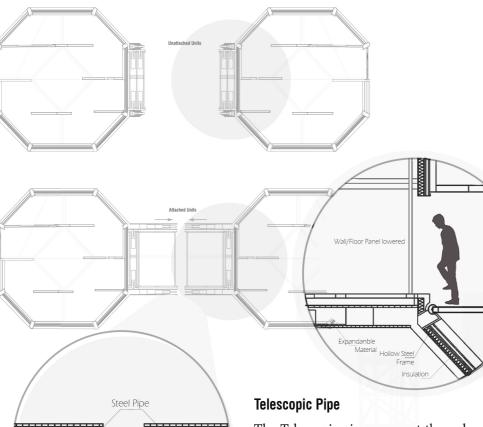


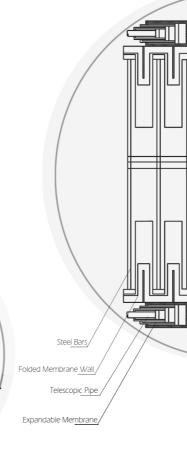




Telescopic Structure

The telescopic structure is used as a connection unit from one unit to the other. It also serves as an airlock units. The structure is composed of folded membrane that expands when in need to connect.





Structure & Enviromental Details

The Martian habitation uses materials produced from Mars resources. These materials shown below have all the necessary capacities to withstand the harsh environment on Mars. The ice panels offer a flood of light into the spaces while protecting these spaces from harmful radiation.

Ice Pane

Fragmanted Roof For Public Spaces

The fragmanted roof gives the ability to utilize different materials for insulation passively heat interior enable light flood using solar panels for collecting solar energy.

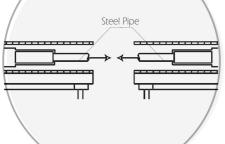
Habitable Checklist

Daylight

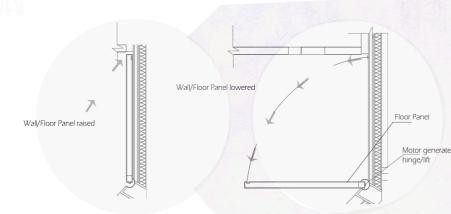
Solar Panel ovoltaic Film

Energy From the Sun

Using Photovoltaic film, the roof is utilized to harness as much solar energy as possible. Some panels on the roof are covered with the photovoltaic film while others are covered with ice panels. Providing energy and daylight.



The Telescopic pipes connect through magnets attached at the ends of each pipe. This ensures no leakage and better connectivity from one unit to the other. The pipes are used to transmit oxygen, water and electricity throughout all units within the habitation. The pipes have valves that open when attatched to another pipe of another unit and close when there is no attachment.

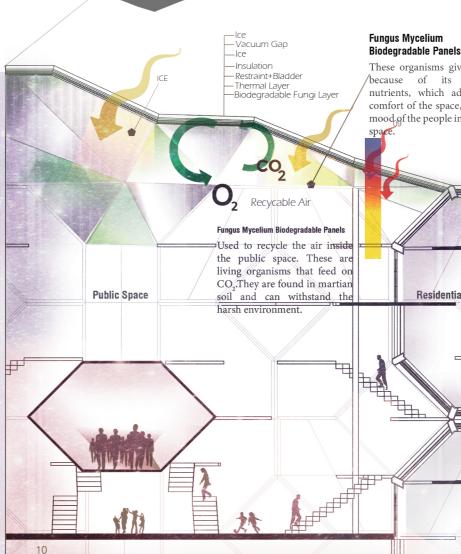


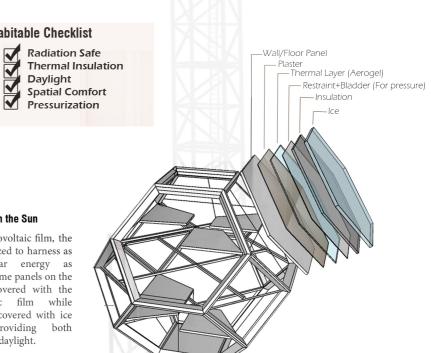
Flipping Wall Panels

Scenario of flippling panels from walls to floors. The walls/panels of the truncated octahedron geometrical unit is utilized by maximizing the number of floors within a unit. Hence, creating different spaces within one residential unit. This ultimately creates different scenarios that differs only through the utilization of the wall panels.

The wall panels are all installed with a motor generated hinge and are attached to the structure of the unit. Within the wall panels there are built-in foldable furniture.

Each wall panel can be replaced with new ones according to the need of furniture and whenever the panels are in need of replacement.





These organisms give off glow /because of its abudance nutrients, which adds to the comfort of the space, lifting the mood of the people in the public

Unit Panels Layers

The panels of the units are mostly made up of protective layers. The exterior side of the unit is composed of 6 layers including the wall/floor panel as shown on the diagram. The interior side of the unit facing the public spaces have less layers.

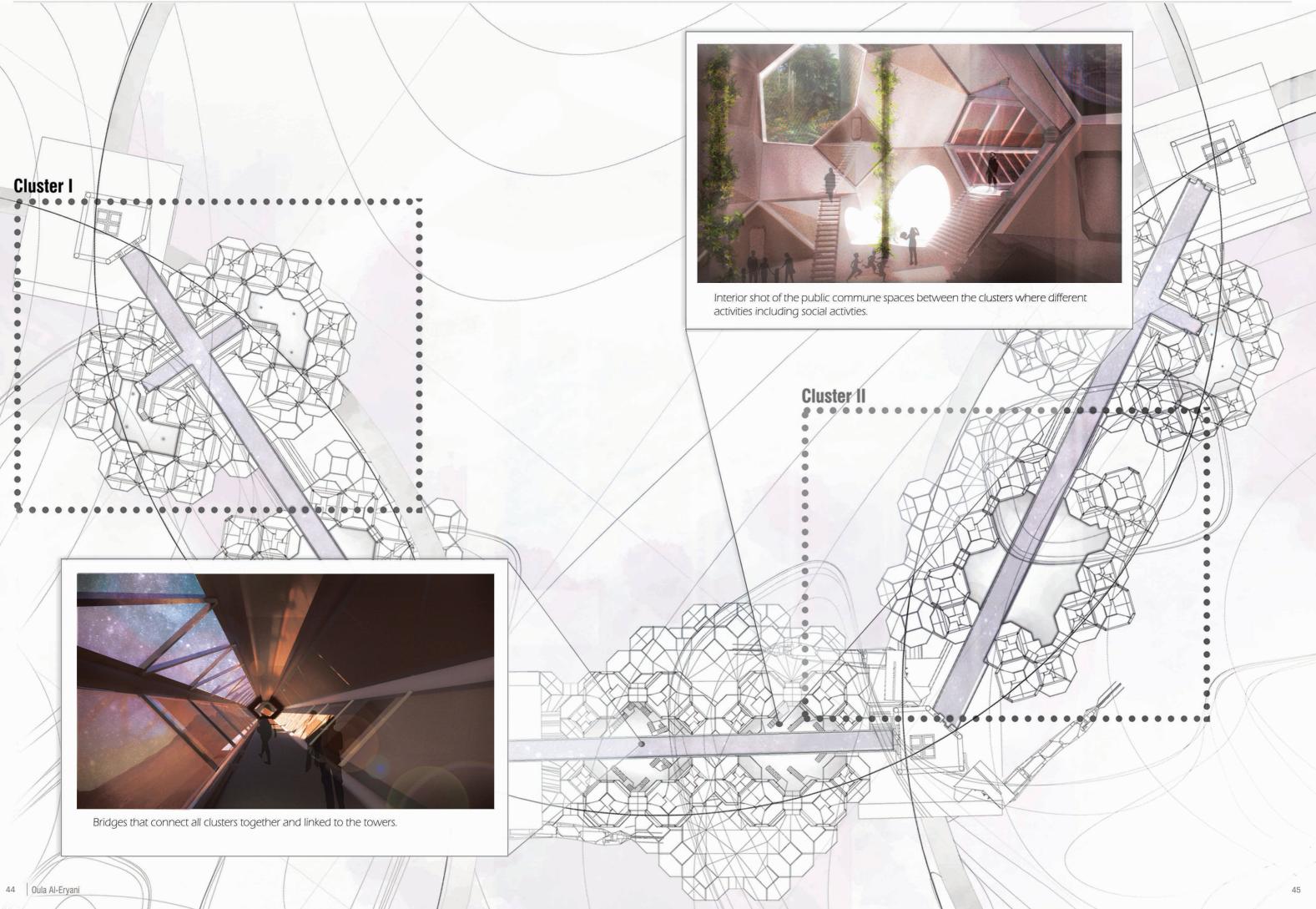
Martian Daylight

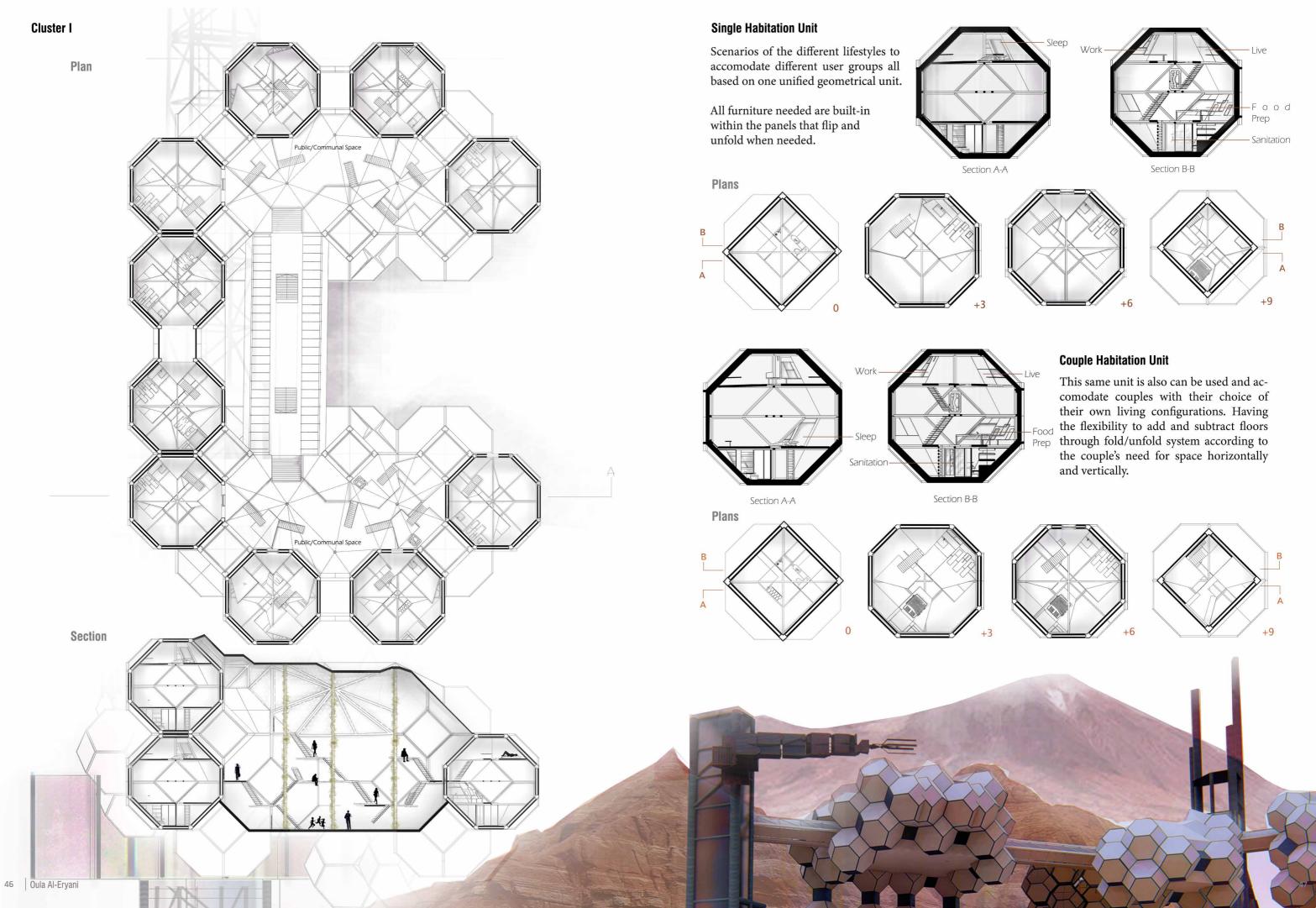
Heat from the sun radiation retained inside by the material Aerogel. Ice protects the units from harmful radiation coming from the sun and the cosmic ravs

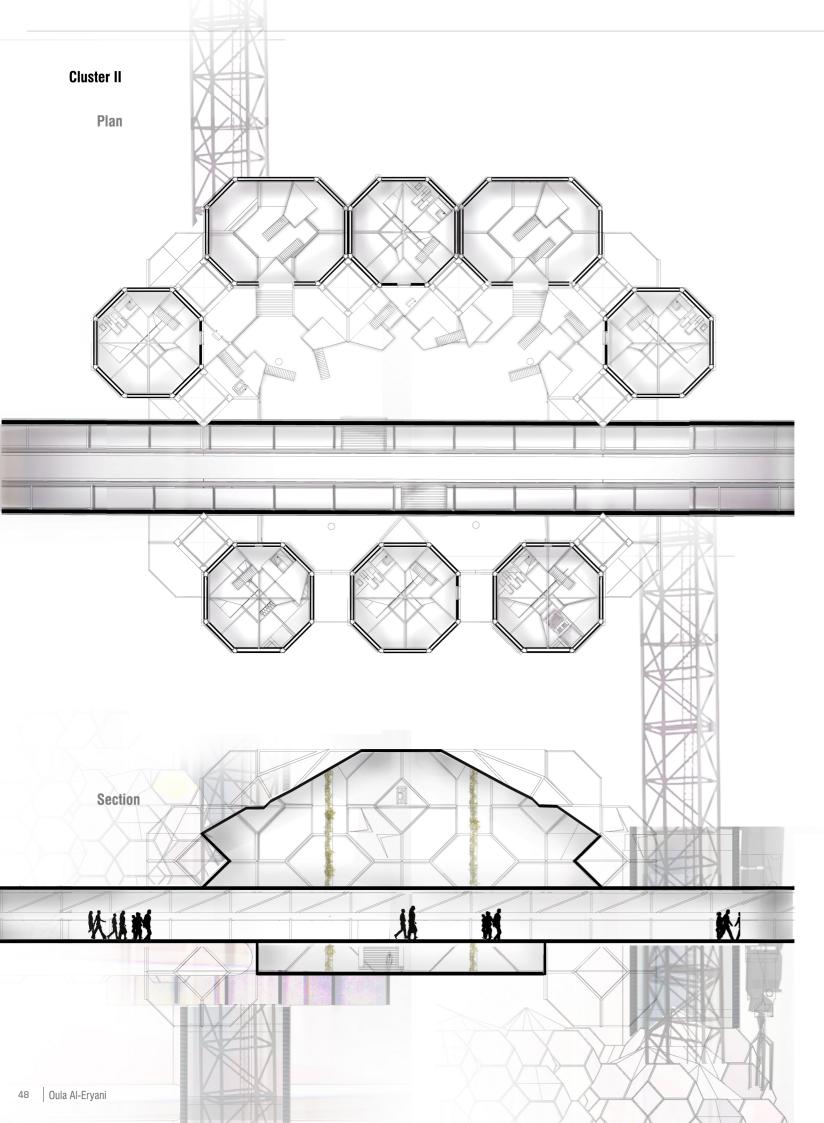
Temperature

Ice cold from the outside, warm habitable from the inside. The layers making up the wall/floor panels are able to warm up the temperature by retaining heat coming from the sun radiation.

Residential Unit



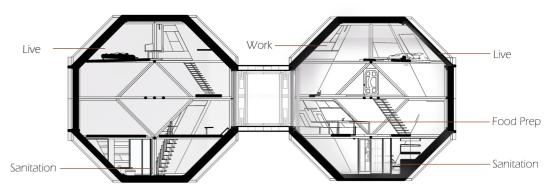




Family Habitation Unit

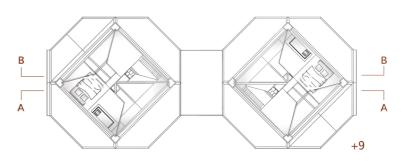
The unit could expand and connect to multiple units when needed for more space for family and ex-tended family. This is achieved by using the telescopic pipes.

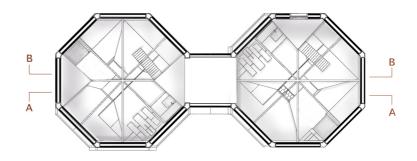
Section

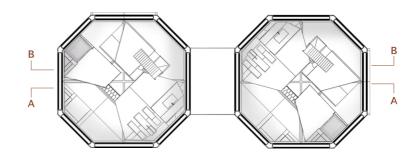


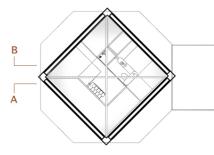
Section A-A



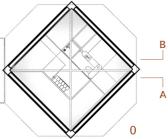








Section B-B



REINVENTING TRADITION

Project: 200 Bed Hospital Studio: Architectural Design Studio V Team Project Location: Downown Cairo, Egypt Spring 2017 Undergraduate Course, The American University in Cairo

Inclusiveness, reviving identity

Two hundred bed hospital is to be designed in downtown cairo, one of the busiest areas in the city. The concept is to focus on the healing process of the patients by creating a more extroverted hospital; one that does not make the patients feel like they are bounded or contained. Creating contact to the surroundings and people in all possible ways.

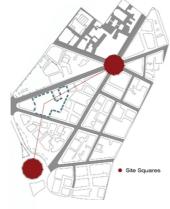
The approach was to find a form that would help utilize different ideas that would result in a hospital that is more interconnected and integrated in the site.

The site is rich with strong and long historical background that goes back during the rein of Khedive Ismail in the 19th century; where he commissioned french architects to design downtown Cairo.

The site also neighbours the old city of Cairo that was founded by the Fatimids in the 10th century.



Main Nodes



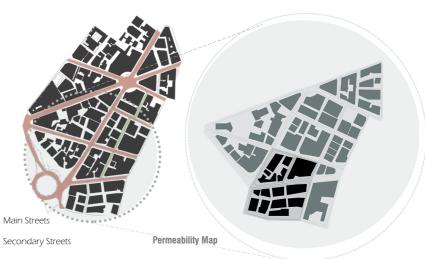
Pedestrian Movement

Site & Project Info

Area: Downtown Cairo # of beds: 200 beds Facilities: Outpatient unit Inpatient unit **Emergency Unit** Maternity Unit Intensive Care Unit Radiology and Imaging Unit Learning from Figure Ground-There is much to be taken from this easily overlooked spatial arrangement theory.

ment generous; the site is very permeable. You can easily believe then that Khedive Ismail had this city originally planned after Paris, which was replanned to be as big and open as possible.





Vehicular Movement

Secondary Streets



The streets are wide and the pave-

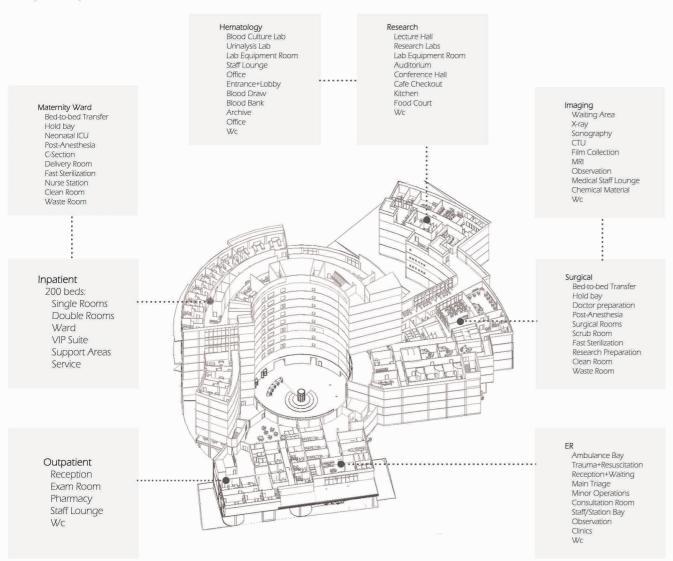
Wayfinding is easy in this site due to the proportion of enclosures. The width of streets is an easy indicator of whether the path is a main or secondary one, while side streets seem terribly narrow to almost unuseable in comparison, when really they're just dwarfed in comparison.

Form Generation

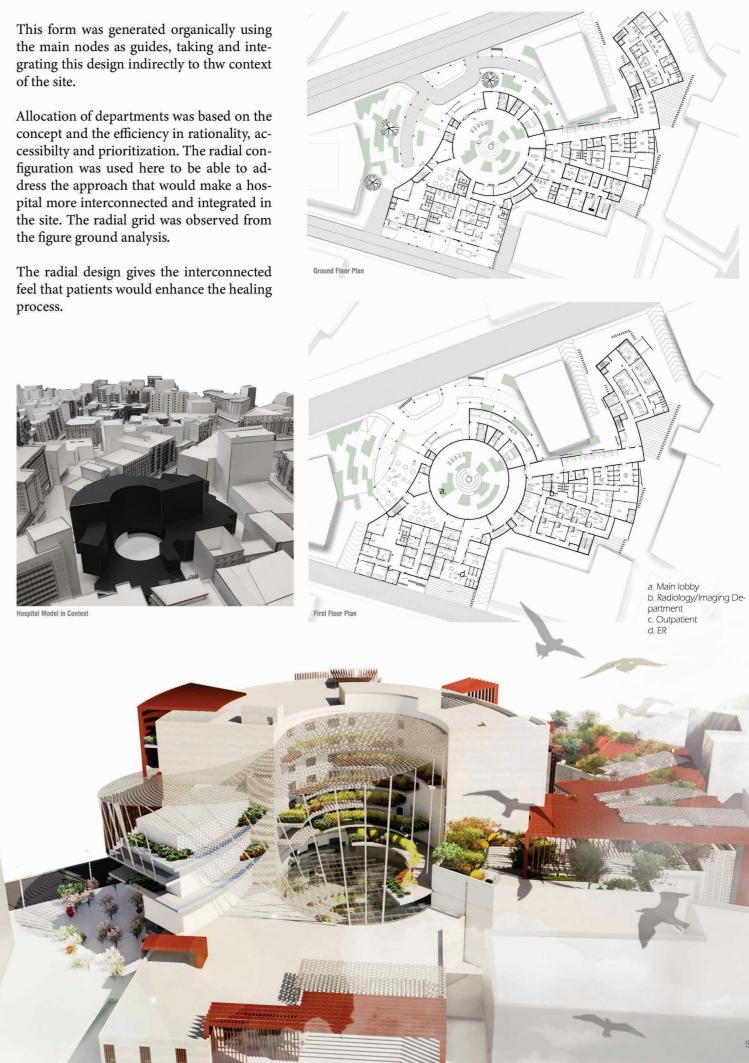




Zoning & Program







The concept of the building is to uncage those who would normally be stuck in a prison-like fortress instead of a healing zone. The idea is for the patients to feel like they've broken free of the cage.

In order to accentuate that feeling of newfound freedom, this project focuses on creating big open spaces as well as smaller 'stolen' areas for one's own. These spaces are healing areas to be used as pleased. We created views for these open areas to look onto in order to entice patients into using them. This led to creating the central rotunda as well as reclaiming other spaces to be used to create views.

We have achieved that using: a. Louvers b. Screens c. Protrusions + Recessions



Louvers

Louvers are mostly focused on the Northern facade, do not play a role in shading building. They serve the concept of the broken cage.

Screens

The screens, especially the mega-screen covering the rotunda, are crucial to shading the building. The site provides little shading since most buildings are shorter than the10-storey inpatient area. The use of climbing plants as well allows for extended solar protection. The screen winding around the in-patient rooms creates little inaccessible gardens specifically to entice people to want to get better and break out of their own cage.

Protrusions + Recessions This push-and-pull and play of solid and void creates this invigorating, revitalizing sense of freedom that this projects aims at



North Elevation

South Elevation

REDESIGNING DOWNTOWN FACADES

Project: Facade Design Studio: Architectural Design Studio V Individual Project Location: Downown Cairo, Egypt Spring 2017 Undergraduate Course, The American University in Cairo

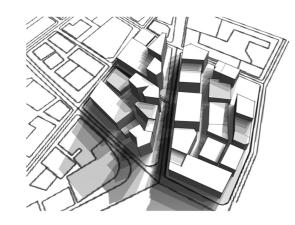
Inclusiveness, reviving identity

In this project, we were asked to study and analyze the facades in Downtown Cairo. Comprehensive analysis were made along with different proposals of facade designs.

In this individual elevation project, I experimented with the creation of free, open space through the use of protrusions and recessions. As well as to create free, socializing space. These spaces attempt to also connect the inner and outer environments, attempting to soften the barrier between the two.

The concept of the facade below is to keep the identity of the street through the use of the rotated floors which symbolizes dynamism, a big part of the street's identity is its high dynamic activities.

The facade is designed in which activities that are held inside the building is clearly seen to the outside.



The following is a study taken throughout the day of the shading on-site as a study for thedesign of self shading facade.



Buildings Height

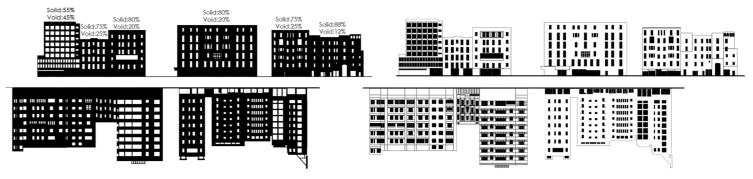


Datum Lines

The average building height is 28m. For most buildings, the narrower the building is, the taller it gets.

Majority of datum lines line up with each other, shows synchronization despite time lapses construction

Solid & Void



According to the void analysis, buildings with more "modern" facade design have more void percentage (mainly composed of curtain walls) than others.

Facade Design

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-	I	I				

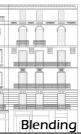


Rhythm & Module





Contemporary buildings tend to follow one set, standard module both in the horizontal and vertical, disrupting rythm to add excitement. Classic buildings tend to stick to one module but play with one element (horizontal or vertical), perserving overall rythm.



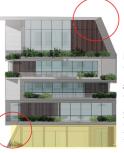




Facade Design Strategy Use of portrusion concept already exists in the street. Use of bricks. Datum line is preserved. Use of width of windows.



Facade Design Strategy Use of portrusion concept already exists in the street. Use of modern material fore screen. Datum line is preserved. Use of width of windows.



Facade Design Strategy Use of portrusion concept already exists in the street. Use of modern material fore screen. Datum line is preserved. Use of width of windows.

THE DEBATE CYCLE

Studio: Architectural Design Studio 4 Individual Project Fall 2016 Undergraduate Course, The American University in Cairo

Seeking Knowledge

Throughout history, debate has been an integral part of the human development tracing back to the Ancient Greek. This project proposes spaces for everyone with different backgrounds to come together and debate on all aspects of life, then these ideas would be recorded and published into books.

The organic design of the project symbolizes the scenario of a journey of an ongoing adaptibility through time.

The spaces within are designed based on the journey that each user would go through in seeking solutions and knowledge.

Concept and Plan

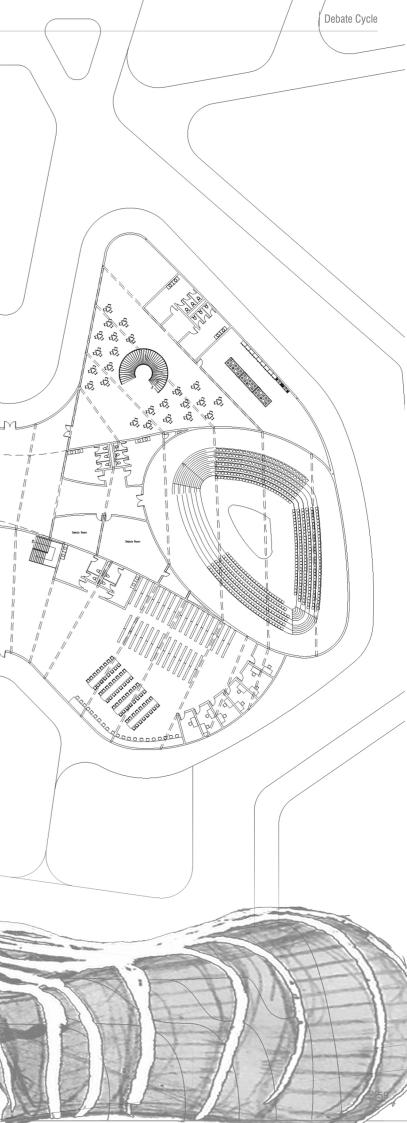
Stages of Debate | A journey of seeking for the truth and the thirst for knowledge

The concept here is to create an experience where the user goes through the different stages of;

Beliefs

Disbeliefs Searching (Through modern day technology and books). Finding Not Finding Searching The design of this project is based on the stages in which a user preparing for debate goes through. The lines represent different paths users would take. The space that looks like almost in spiral represent the cycle in which a person would constantly go through the stages of debate until finally seeks the knowledge that would be satisfying. It also emphasizes the value and importance of seeking through intensive search before finally finding conclusion.

The spaces within this building is composed of debate rooms in different scales to accomodate different group sizes. A library and a publishing spaces are also within the program



SHUBRA HOUSING

Studio: Housing Project Group Project Location: Shubra, Cairo, Egypt Spring 2016 Undergraduate Course, The American University in Cairo

Perserving Identity

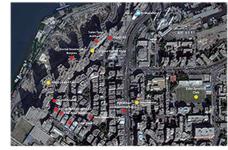
Shubra, now 200 years old, is a middle class residential area. However, back in 1800s, after Mohamed Ali Pasha made it an official district, Shubra was a favored place for the aristocrats to live in. One thing that has not changed throughout the years is Shubra's status as a residential city. Always a popular shopping district, Shubra's name means village in the Coptic Language, and true to this, it is home to a large Coptic Population

Shubra site has, until this day, been occupied by a heavily dense cluster of buildings, buildings of up to 22 storeys that are located on the waterfront of the Nile, which created both physical and visual barrier between the area and the Nile.

Site Info

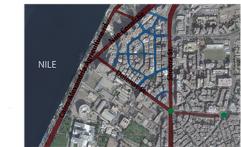
Total Area: 138, 483 m² Elevation Height: 16 m Population: 1,099,354 Density: 4100/km² Price of $1m^2 = 10,000 \text{ LE}$ Area range of apartments in Shubra= $150-200 \text{ m}^2$





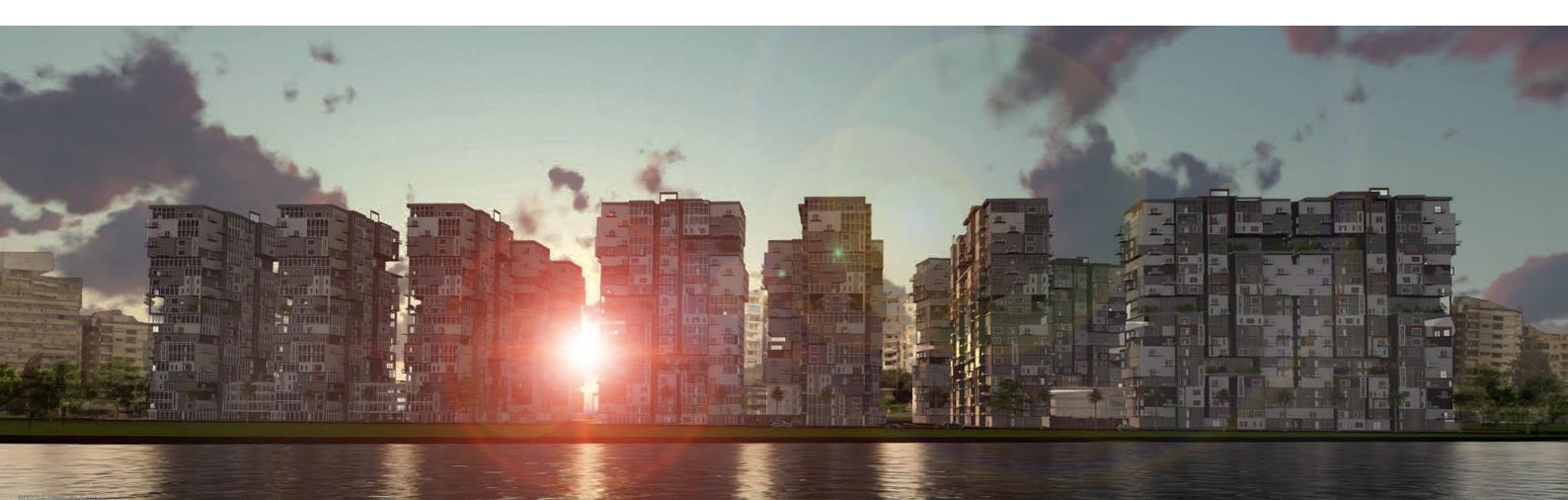
Green Pockets Surrounding Site Boundaries





Transportation & Facilities Surrounding Site

Circulation Primary & Secondary Streets



Nile View	No maintenance
Identity	Poor Road Network
Variety of Services	Disorganization of Buildings
Variety of Social	Type Distribution
Demographics	Lack of greenery within Site
Potential Green Area	Overcrowdness
Good Circulation (Liveliness)	Sparse Daylighting
Communal Nodes	Security in Communal Node

Greenery Inclusiveness Solar and Wind Maximization New bridge being built Topography

les Privacy in Waterfront Voids Increase of Population Poor integration of Social Classes

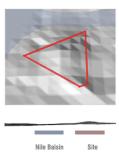
Contextual Entities Surrounding Site Boundaries



Sun and Wind Path



Solid to Void Ratio



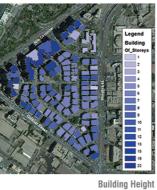
Topography Diagram

Existing Site Analysis

This site analysis aims to study the issues in this site which includes obstruction of view to the Nile, lack of greenery and public spaces. Poor use of land and poor condition of buildings.





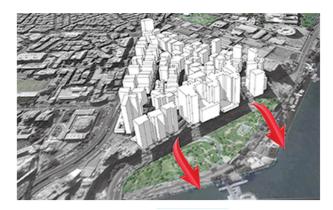


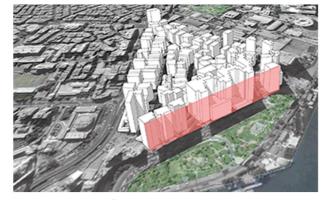


Construction Type

Building Condition

Land Use





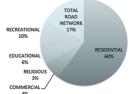
Housing Program

Target Users

The users in this housing project composed of upper average and average.

UPPER AVERAGE	30%
AVERAGE	70%

ТҮРЕ	AREA REQUIRED (M ²)
RESIDENTIAL	83,089
COMMERCIAL	5676
RELIGIOUS	3406
EDUCATIONAL	8514
RECREATIONAL	14256
TOTAL ROAD NETWORK	23542



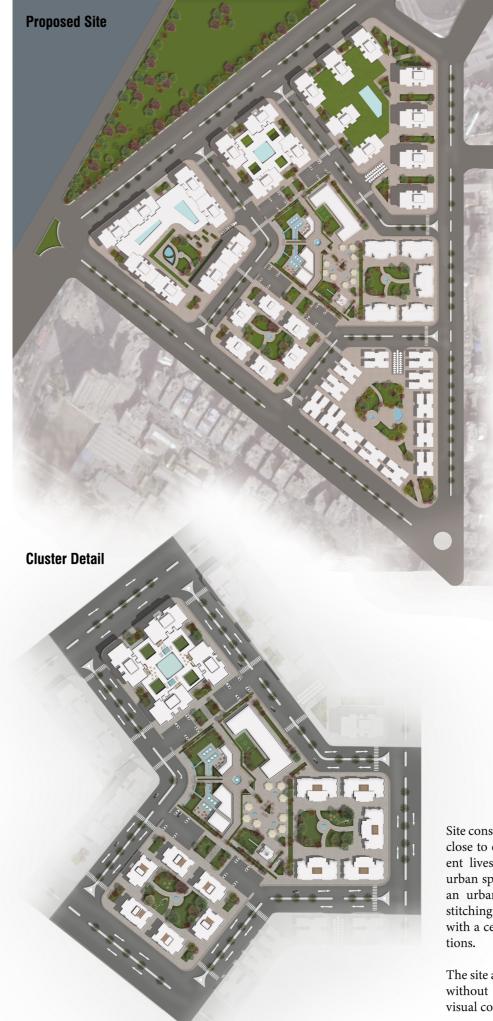
Score

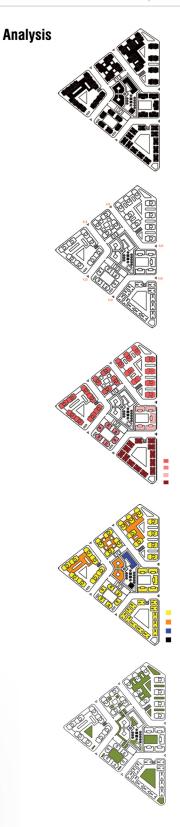
Morp Sca	hology Matrix le 1:10000				
1	X				
2			X	X	
3	000		XXXXX		

CRITERIA	OPTION 1	OPTION 2	OPTION 3
VIEW	5	6	8
PERMEABILITY	6	5	7
ZONING	7	5	7
CONTEXT CORRESPONDENCE	6	8	7
WASTED SPACE	5	5	7
CONNECTIVITY	7	6	8
CIRCULATION	8	6	5
VARIETY	7	5	8
ENVIRONMENTAL BENEFITS	7	6	8
LEGIBILITY	7	6	5
TOTAL	65	58	70

Design Concept is to build high waterfronts while maximizing view through multi-leveled intersected axes viewpoints and play of solid and void ratios, always making sure not to waste space.

This site is an urban neighborhood with communal areas stitching smaller units of the community together with a central piazza for larger events and celebrations.





Site consists of a diverse group of residents all living close to one another through they live very different lives. Many families brought together in an urban space that is still family-friendly. This site is an urban neighborhood with communal areas stitching smaller units of the community together with a central piazza for larger events and celebrations.

The site allows for higher density on the water front without compromising the rest of the residents' visual connection to the Nile.



Otto Harry

Ground Floor Plan



Prototype II

Analysis







Ground Floor Plan



Typical Floor Plan

Typical Floor Plan



Analysis



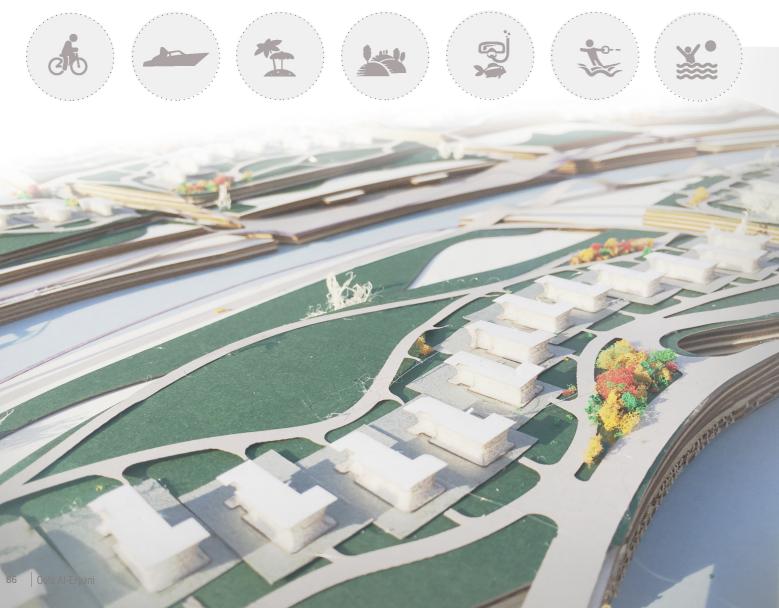
CANAL CITY

Studio: Urban Design Studio Group Project Fall 2016 Undergraduate Course, The American University in Cairo

Breathing new life into the canal city that lies between the calm seas and the rough terrain. An experiential design where even the parking is a visual treat.

This project aims in creating an artificial island to achieve a serene life without the exhaust of the cars and the chaos of a city. The island is mostly covered with greenery with terrain of different heights to achieve views, isolation and optimum ventilation.

The use of trees and green spaces also act as social connectors encouraging the residents to meet and interact. The sea is used not only as an isolator but also a connector between clusters of residential vacation homes.

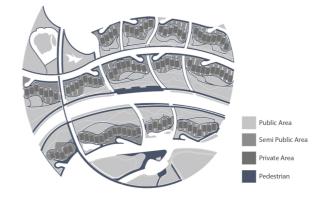


Site & Project Info

Total Area: 557572m² Length of Total Canals: 58000 m² Total Area of Plots: 55800 m² Residential Total Area: 27900 m²



Hierarchy of Spaces



This site encourages the people to be more outgoing and integrated within the community without compromising their privacy.

Public Areas consist of cafes and restaurants at the outskirts of the city and artificial beach-like areas in each cluster.

The pedestrian network is fully integrated within the site that reaches every cluster. Huge variety of passages through the landscape and water features are provided to encourage activity. The whole network is continuous throughout the canal city.

Commercial Buildings: 6475 m² Greenery & Landscape Total Area: 362436 m² Climate: Marine Site Type: Artificial Island

Entryways to Site

Here canals are used as routes around the canal city. The city is free of street vehicles, instead, people use private boats as transportation from one cluster to other. Other pathways are available such as the pedestrian and bicycle pathways.

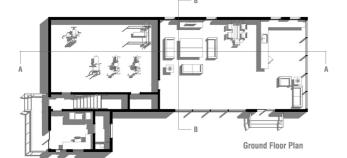
There are 4 main entrances to the public areas. Variable entrances to ensure maximum connection to the outside world while maintaining the privacy of the site.



Water Canal Route

- 1. Emphasis on waterscaping.
- 2. All plots viewing scenery
- 3. Plots can be flipped
- 4. Extensive transportation network
- 5. Variety of scenery (mountain, canals, rivers, sea, tunnels and play of heights
- rivers, sea, tunnels and p
- 6. Good site ventilation
- 7. The site is both extroverted and introverted at the same time
- 8. Green areas almost equal to plot size areas
- 9. Pronounced line of life
- 10. Safe for cyclists
- 11. Very good air quality (lack of vehicular exhaust)

Cluster & Prototype Design





Pedestrian and Bike network

- 1. Water level constraint on heights of landmass.
- 2. Isolation of first column on left side (farthest from mountain).
- 3. Lack of variety in overall site.
- 4. Moderate privacy within clusters



1. Varied landscape.

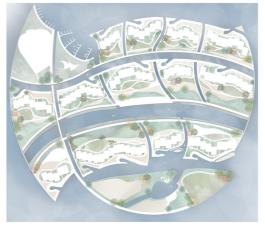
2. Each cluster zone has pronounced hierarchy of spaces.

3. Novelty of water transportation.

First Floor Plan

4. Room to include other forms of transportation such as bicycle.

 Grade separation provides opportunity for creative and unique site development.
 Division of entertainment spaces allows for balanced distribution of users throughout site.



Landscape and Hardscape

- 1. Water pollution
- 2. No self-shading clusters.
- 3. Lack of safety/security within clusters.

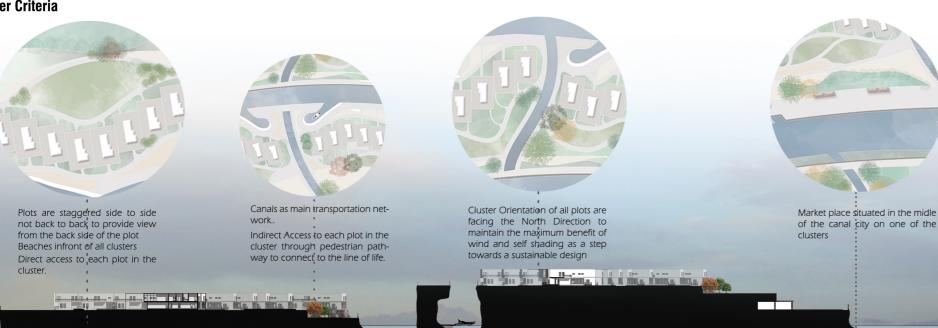


The units are designed in a way where they can be flipped according to the site's limitation without compromising the efficiency of the design.



Section A-A

Cluster Criteria





Main and Sub[®]bridges to connect all clusters to each other and provide continuous network





Physical model

Maximum rotation permitted is 20°



onnect nd proPublic Areas that include restaurants/cafes and entertainment are located at the outskirts of the Canal City

and the second

URBAN ABRIDGING

Studio: Urban Design Studio Group Project Location: Shubra El-Kheima, Egypt Fall 2016 Undergraduate Course, The American University in Cairo

What's unique about this site and gives it its edge is its connection to a rich history. The modern city always shuns the past. This project will be an attempt to bridge the gap between modern times with its harsh reality and the older, grander times of Mohamed Ali through urban design.

The goal was to find a suitable medium between two polar opposites of the palatial city Mohamed Ali wanted to build and the gargantuan city we live in now.

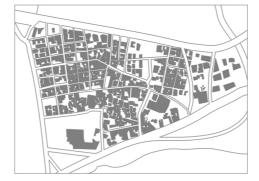
The second goal is to create a site that has a cultural identity engrained in it. Create an open site that has a range of private, semi-private, semi-public and public areas for everyday use.

Create a road netweork that doesn't disrupt the predominantly pedestrian/bycicle pathways. Finally, engage with the view of the Nile while also retaining an introverted nature.

Site & Project Info

Total Area: 244197 m² Elevation Height: maximum 80 m Population: 1,099,354 Built up Area: 67200 m²





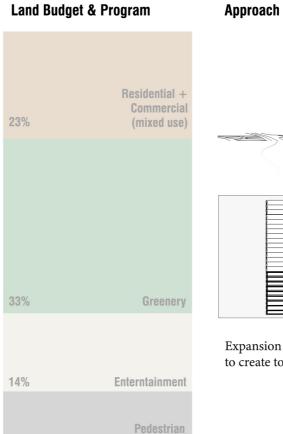
Rather a return to the time of Mohamed Ali and palatial cities, a project that abridges the gap between two very different eras in Egypt's timeline.

Creation of a vertical palatial city to allow for site's population while keeping the huge area per-person ratio- maintaing the feling of huge grounds by expanding upwards rather than just outwards.









walkways



Expansion upwards to create towers







1. Placed on waterfront, good views and fresh air available to all 2. Use of bridging building good for catching breeze

3. Direct relationship with historical site.

Corniche street passing 4. through lifeline.

1. Site gets narrow at bottom 2. Existing site conditions quite poor, low maintenance. 3. No hierarchy

4. Low greenery

1. Proximity to historical site brings in tourists.

2. Proximity to university campus brings in lots of consumers.

3. Waterfront residences very desirable

4. Waterfront hotel as site landmark

1. Surrounding site poor conditions.

2. Limited privacy may not match existing site culture

3. Traffic





Stepped expansion outwards to create large open areas for residents



Towers abridging pathways so as not to waste space.

Pathways extending underneath bridges to create large pavillions

71

NEO-ISLAMIC RESIDENTIAL

Studio:Architectural Studio 1 + Construction Drawing Studio Individual Project Location:Cairo, Egypt Spring 2015, Fall 2016 Undergraduate Course, The American University in Cairo

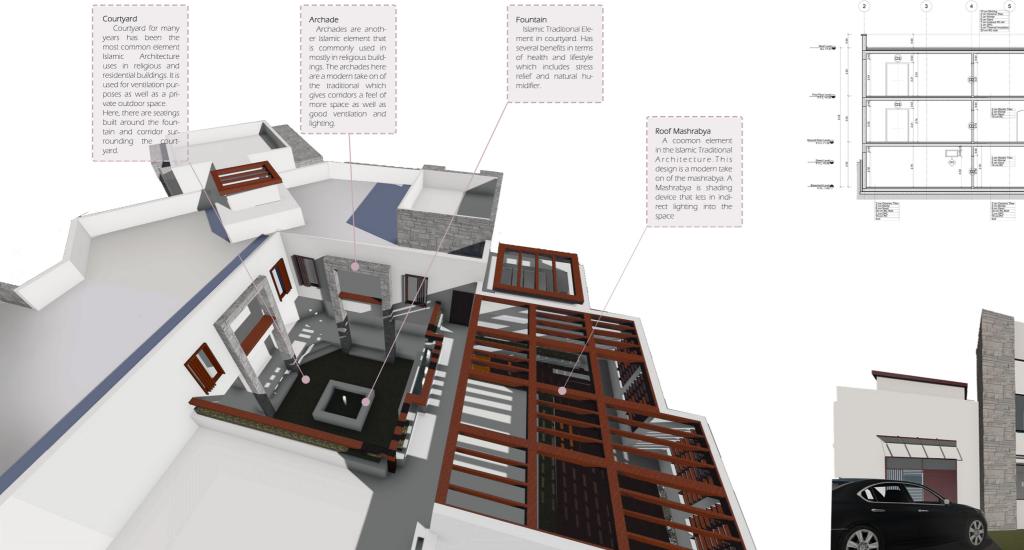
Neo-Islamic Identity

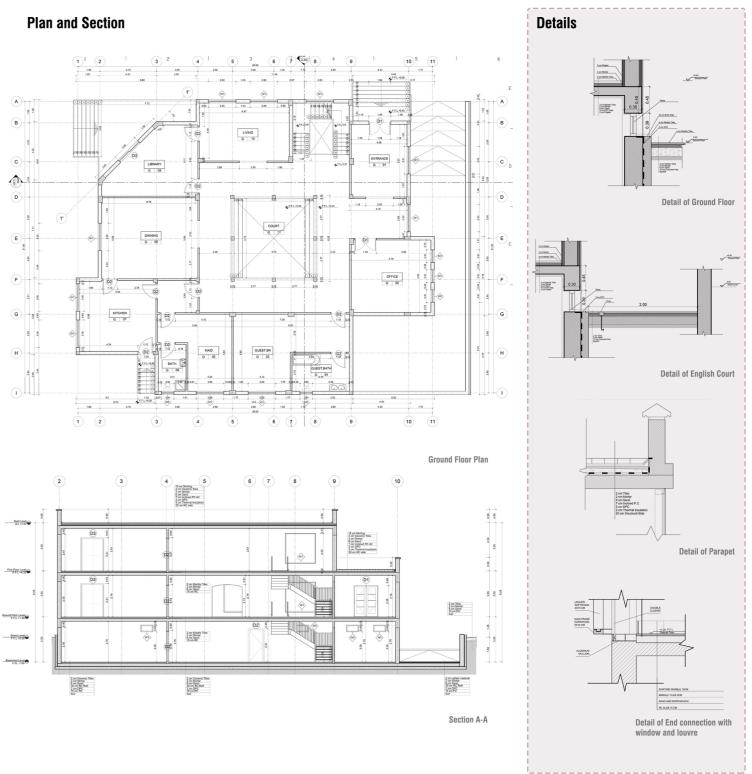
These Construction drawings were made for a Residential villa that I have designed previously in one of the Architectural Studios

These are selected works from a complete set of construction drawings for the Villa.

The design of the villa was based on the concept of integrating modern islamic elements into a modern home. Also, The surrounding context of the house was Islamic Neo-Islamic Architecture style was being followed in creating the design concept.

The design of the villa was inspired by the Syrian traditonal homes having a water element in this case is the fountain in the courtyard surrounded by seatings.





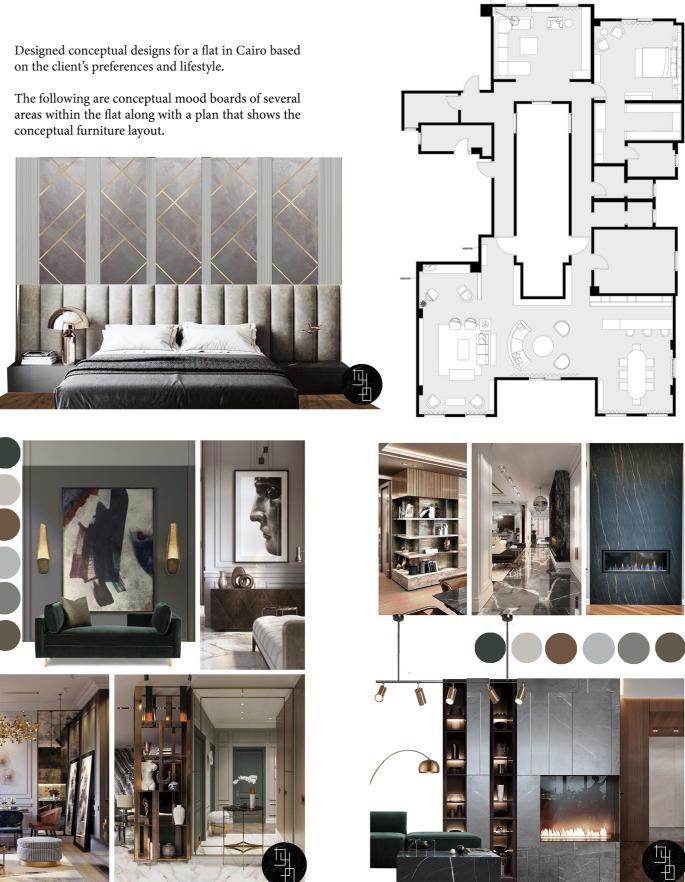


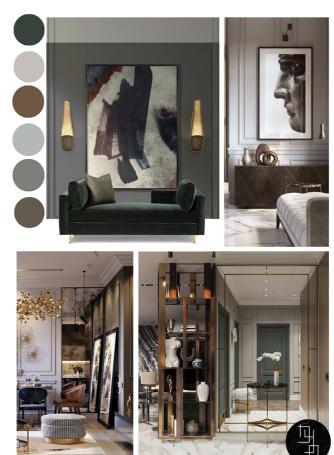
MONA HUSSEIN DESIGN HOUSE

Project: Landscape design of Residential Villa Summer Internship in Cairo, Egypt Interior Design & Landscape Firm Professional Work

FREELANCE INTERIOR DESIGN

Project: Residential Flat in the heart of Cairo, Egypt Professional Work





This is a selected work that I have done at MHDH. I was responsible for modeling the ladnscape of a private villa in Cairo, Egypt.

The villa included two pathways to the garden where a pool and poolbar is located. Utilization of trees as means of privacy from neigh-boring houses and also for aesthetic feels of nature as per the client's preference and the concept.

Modeling this landscape I used sketchup and rendered using v-ray and photoshop.











T-SA FORUM VISITING SCHOOL AA

Drawing and Sculpting Workshops London, UK Summer 2018

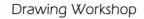
This is a selected work that I have done during my participation in Workshops held by T-sa Forum and the AA. The aim of the workshop was to study what figure means in Architecture.

We went through a series of workshops starting from studying figure through collage that is inspired by Henri Matisse.

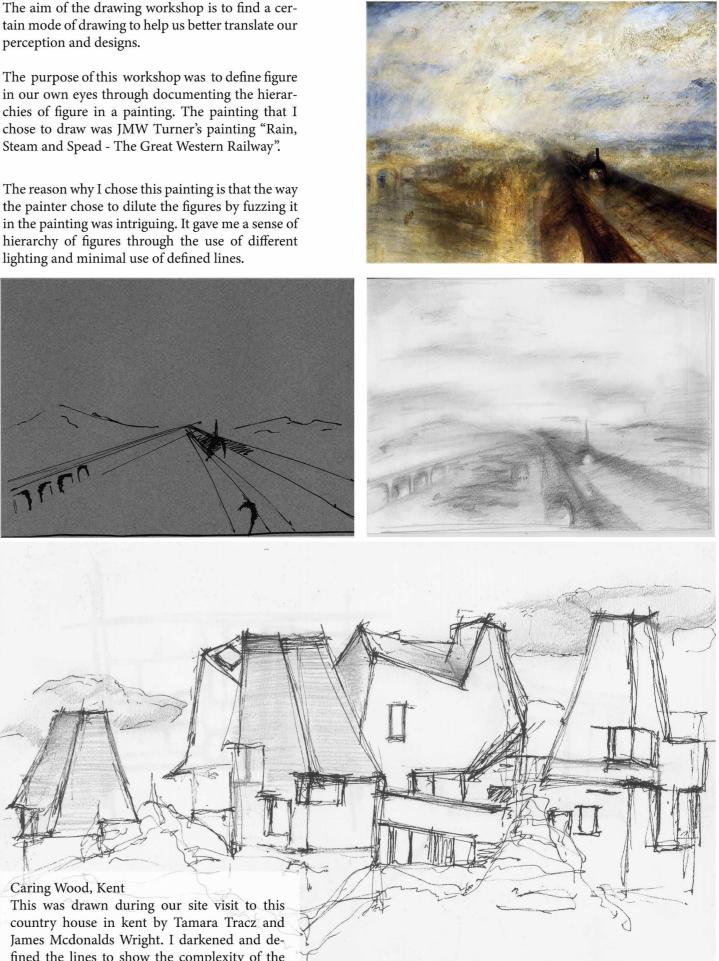
The collage that I have made studies the shadows casted by the figures that were brought to us to study.

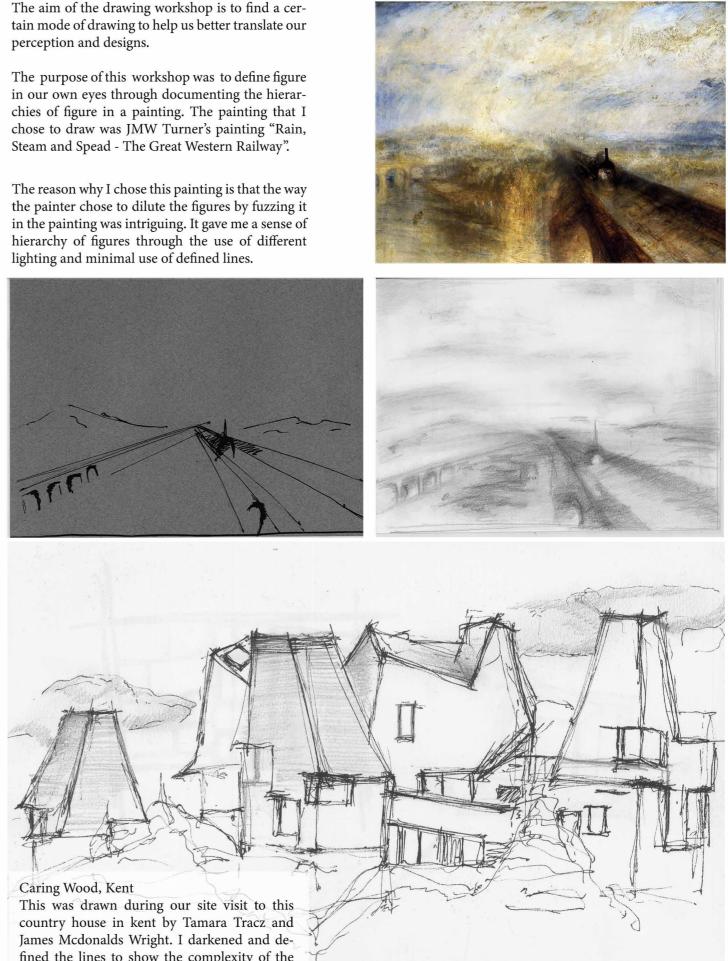
My approach was studying the compositions which make up the whole or the part of an object or a figure.



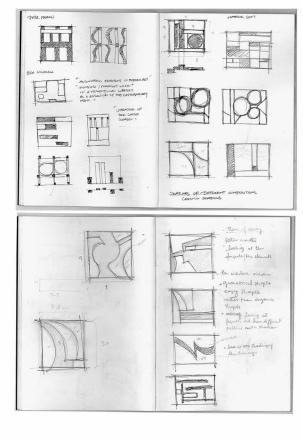


The aim of the drawing workshop is to find a cer-





fined the lines to show the complexity of the roof structure and its design



Modeling/Sculpting Workshop

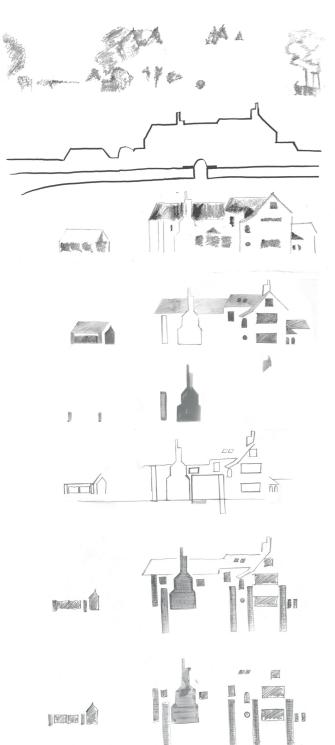
These were experimental modelings where I was studying how to balance the different compositions in a detail inspired by the works of Peter Markli



Drawing Workshop

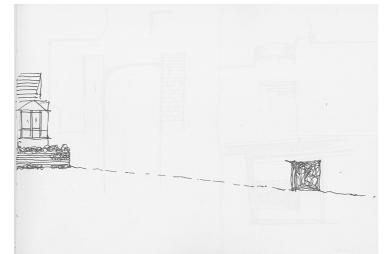
These were a series of drawings drawn on site

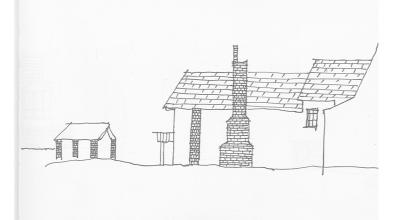
The purpose of these Workshops were to define figure in Architecture, and through my studies of compositions of the different elements of a building, I came to the realization that each element were characters that are part of a scenario that tells a collective story.











EXPERIMENTAL MODELING

Project: Material Experimentations Undergraduate Course, The American University in Cairo

This is a selected experimental modeling using different materials for texture. Texture and instant modeling is used to study the material and its flexibilty into creating different forms and texture when it is molded within different other materials.

The chosen material for study here is the spray foam because of its lightweight characteristics and ease of use.

One negative characteristic after various tests is that the material itself is sometimes difficult to control when modeling.

Silicon Fabric Foam Forming

Here silicon was used as a fabric that was easy to shape to create a mould. The spray foam was easily pumped and managed into the mould which created a seamless texture and taking into the shape of the mould without breakage.







The Nylon Emergence

Here nylon bag was used as a mould, the foam spray was pumped into the bag and had to be open to dry out and start strengthening. The foam was easily to manage and moulding was easily shaped however when it dried out the plastic mould was not easily removed, hence parts of the plastic was left on the model.



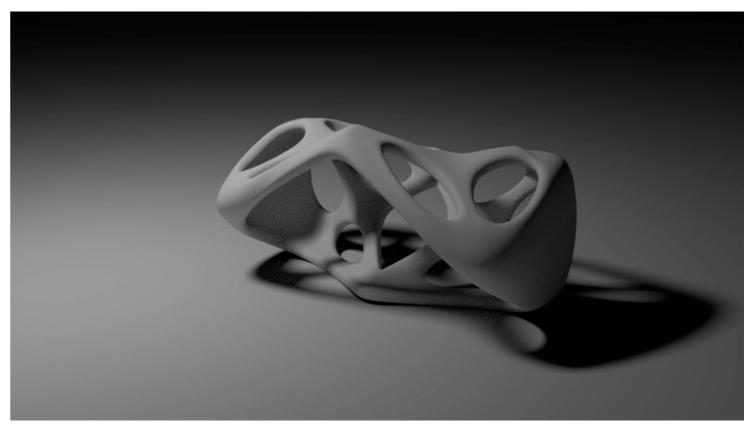
Other works

Models and renders works done as software practice Softwares: Autodesk Maya, Houdini









Models are designed based on Ruled surfaces on Maya

