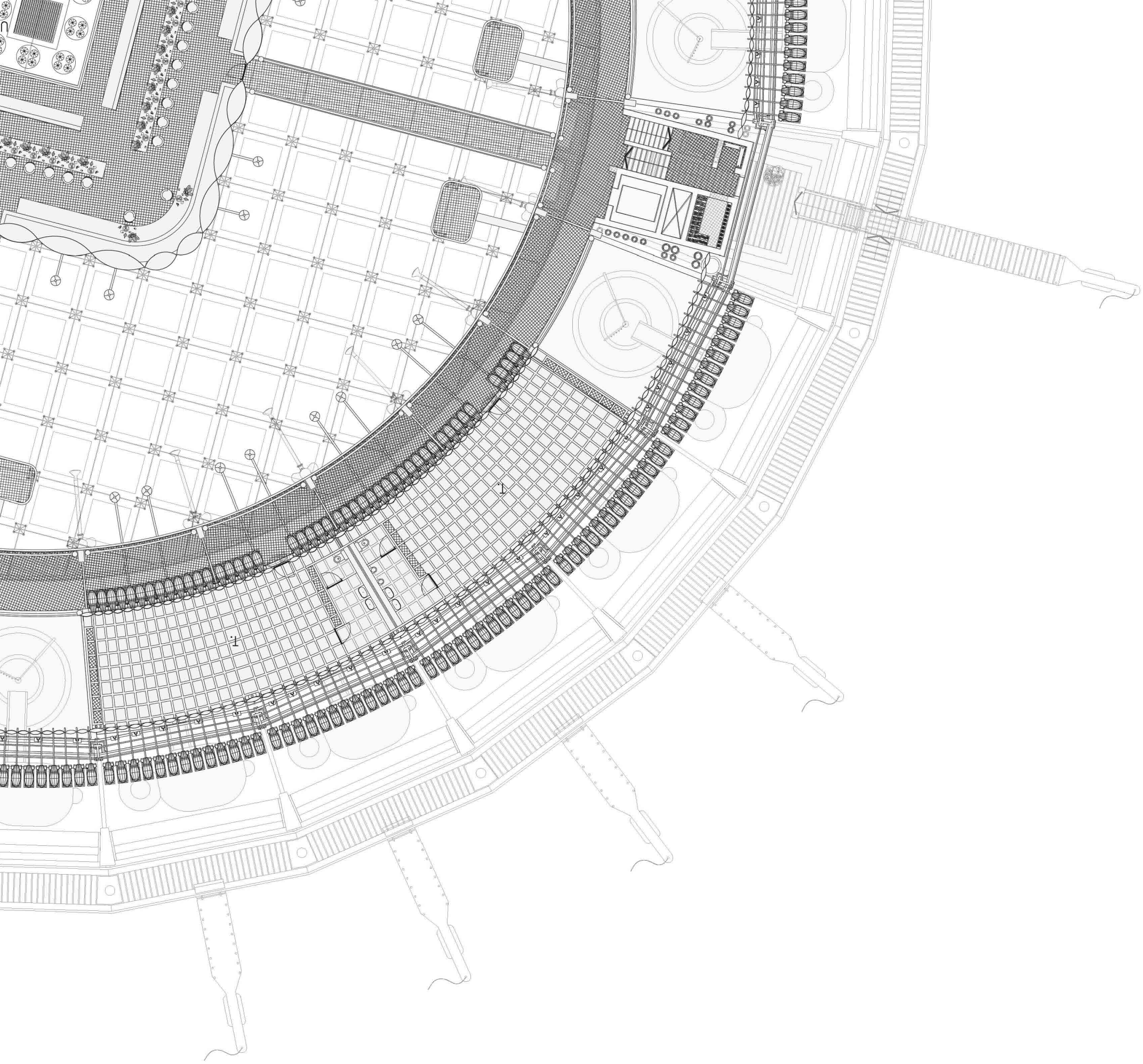
03_

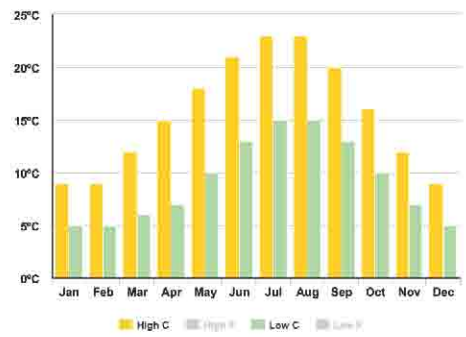
BUILDING PERFORMANCE



Greenwich Climate Data

Month	Max. temp (°C)	Min. temp (°C)	Days of air frost (days)	Sunshine (hours)	Rainfall (mm)	Days of rainfall >= 1 mm (days)	Monthly mean wind speed at 10m (knots)
Jan	8.1	3.1	6.6	44.7	41.6	11.4	n/a
Feb	8.6	-4.0	7.6	65.4	36.3	8.5	n/a
Mar	11.6	4.6	2.8	101.7	40.3	9.8	n/a
Apr	14.6	5.9	0.8	148.3	40.1	9.0	n/a
May	18.1	8.9	0.1	170.9	44.9	9.2	n/a
Jun	21.0	11.8	0.0	171.4	47.4	7.4	n/a
Jul	32.0	13.7	0.0	176.7	34.6	6.3	n/a
Aug	23.1	13.8	0.0	186.1	54.3	8.1	n/a
Sep	20.0	11.4	0.0	133.9	51.0	8.6	n/a
Oct	15.5	8.8	0.4	105.4	61.1	10.9	n/a
Nov	11.3	5.8	2.7	59.6	57.5	10.9	n/a
Dec	8.4	3.4	7.6	45.8	48.4	9.5	n/a
Annual	15.3	7.8	28.6	1410.0	557.4	109.4	n/a

Average High / Low temperatures



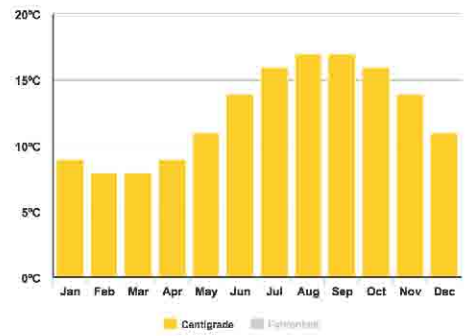
-4.0

Extreme year low

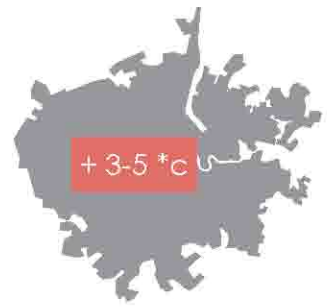
32.0

Extreme year high

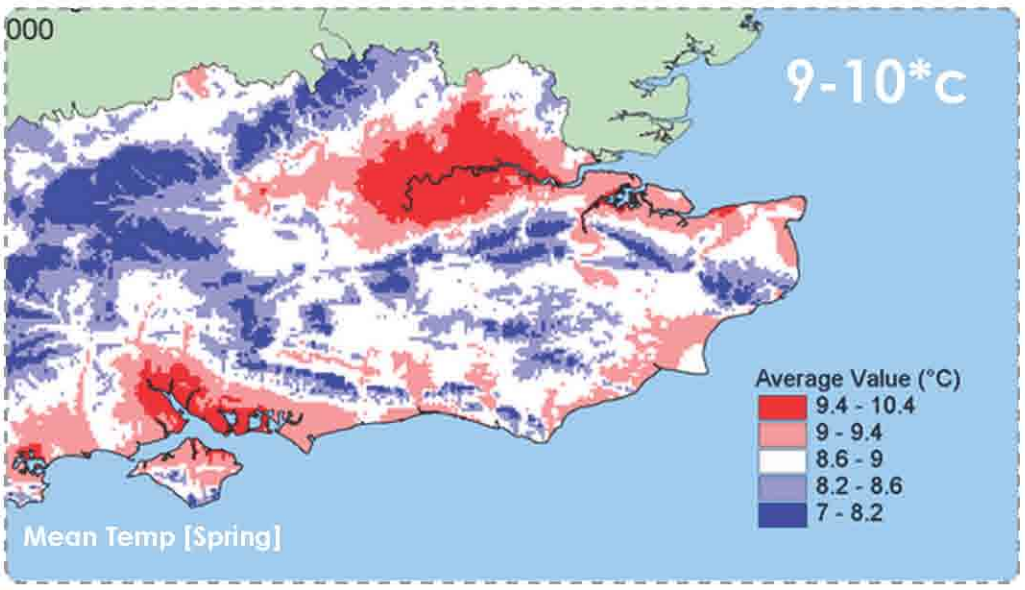
Average Thames temperatures

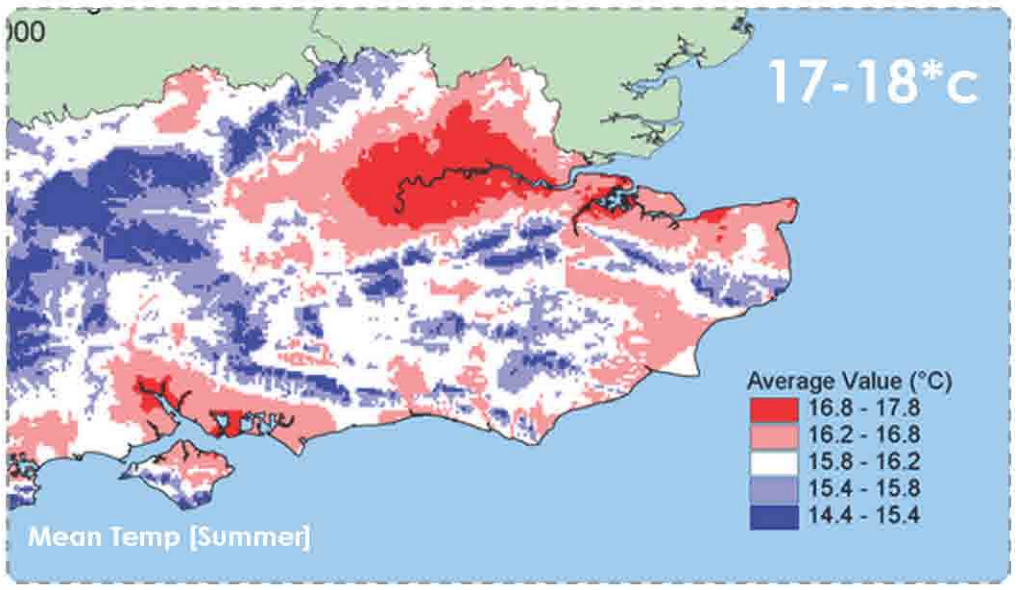


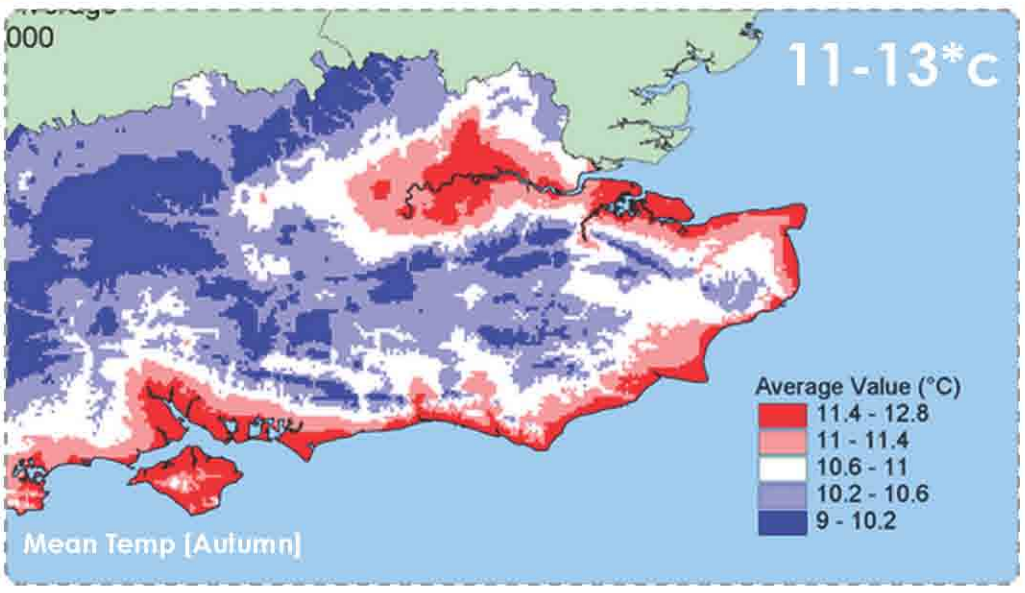
City = hotter

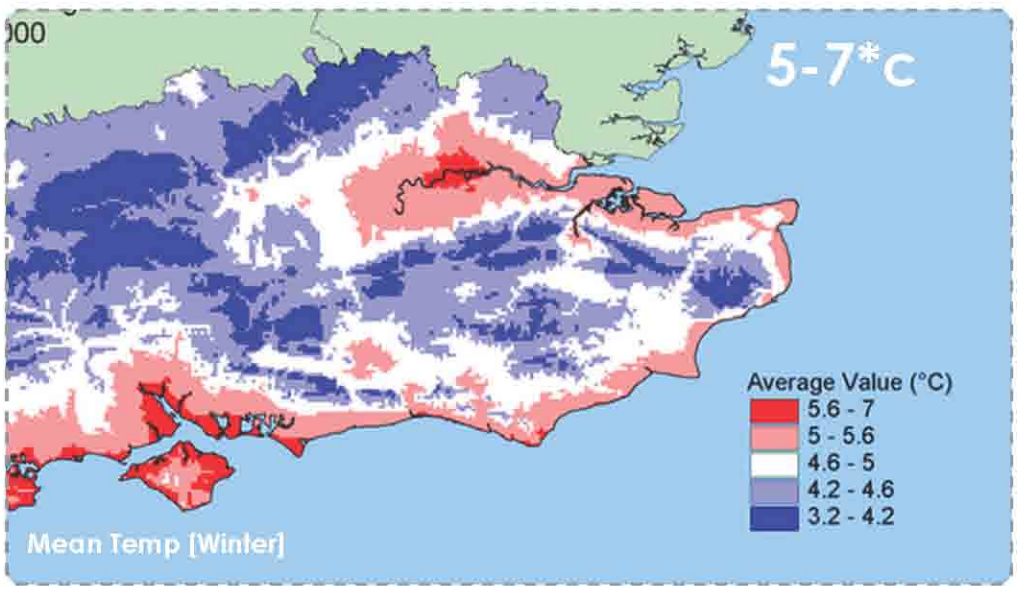


Seasonal Average Temperatures





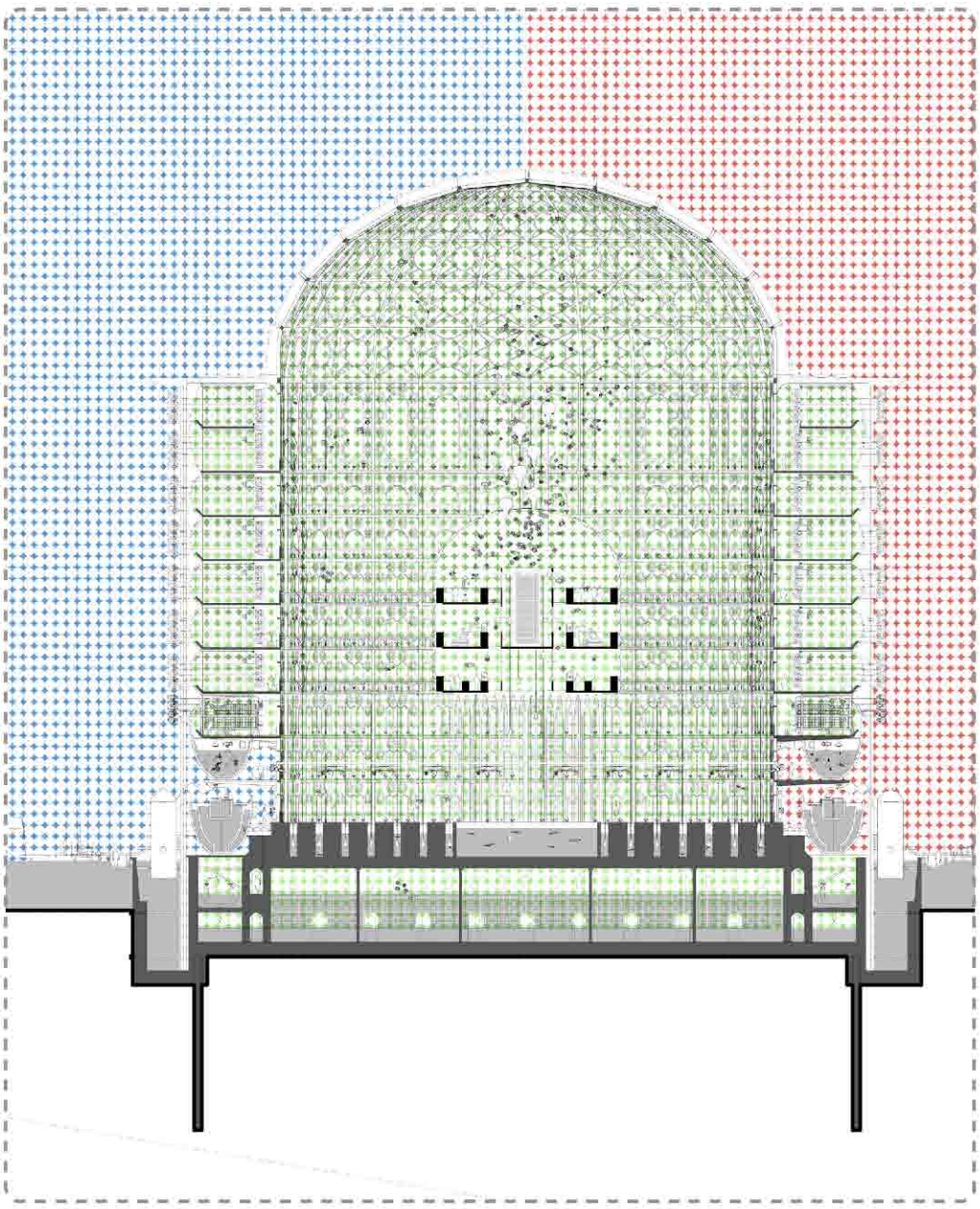


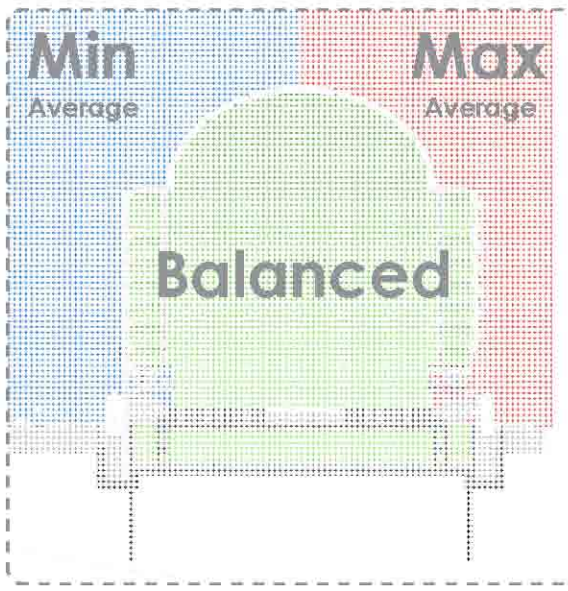


3.1 __CLIMATE

Analysis of seasonal average temperatures and temperature extremes in order to develop a climate strategy

Micro Climate Analysis



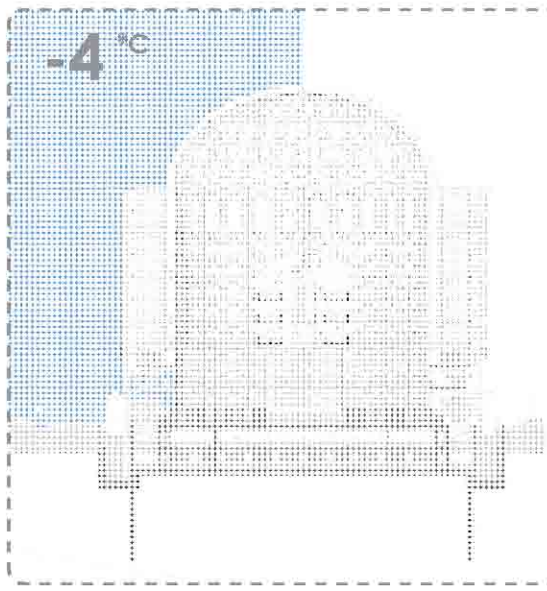


> Analysis of London **average** temperatures per month

> Climate **extremes** set parameters for design

- max average
-min average

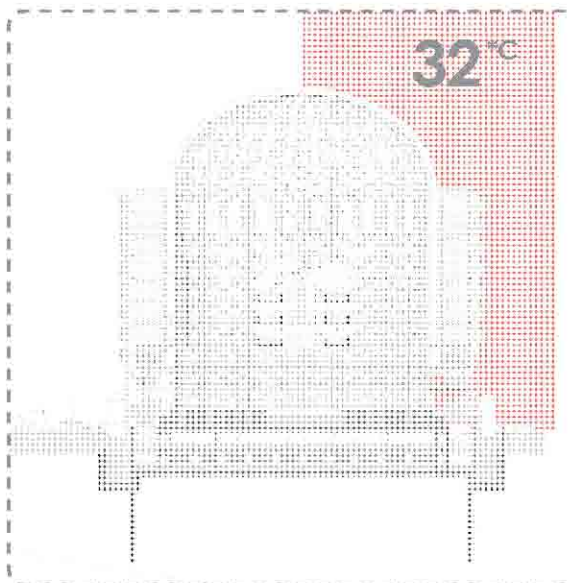
> **Internal climate** should remain **constant**



> Min Average = -4*c

> **Winter** climate

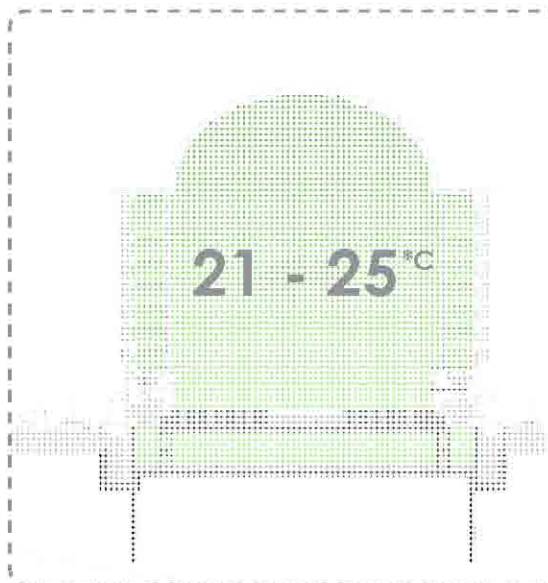
> When temperature **falls below 15*c outside = heating** required



> Max Average = 32*c

> **Summer** climate - 2 weeks per year

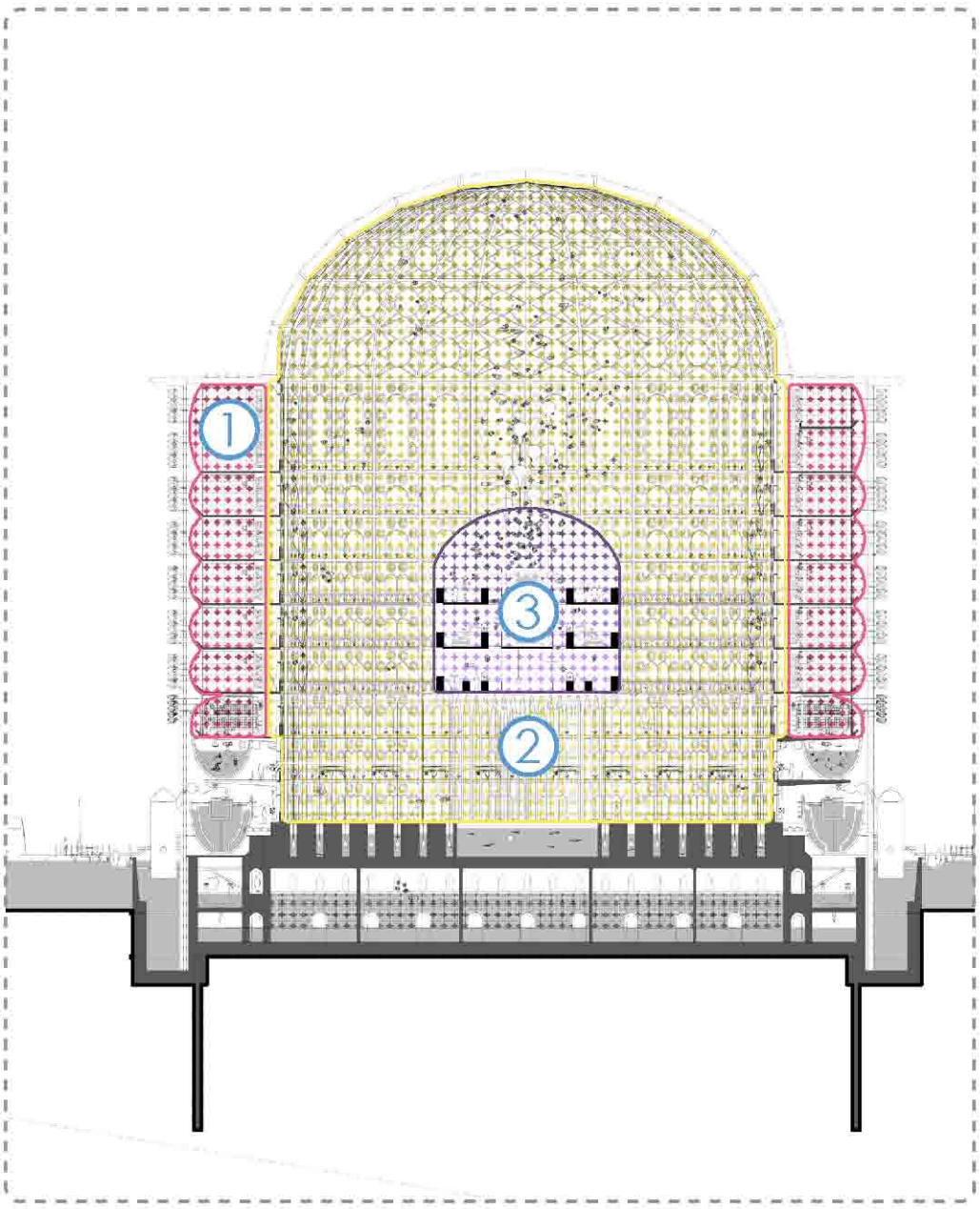
> When temperature **exceeds 25*c outside = cooling** required

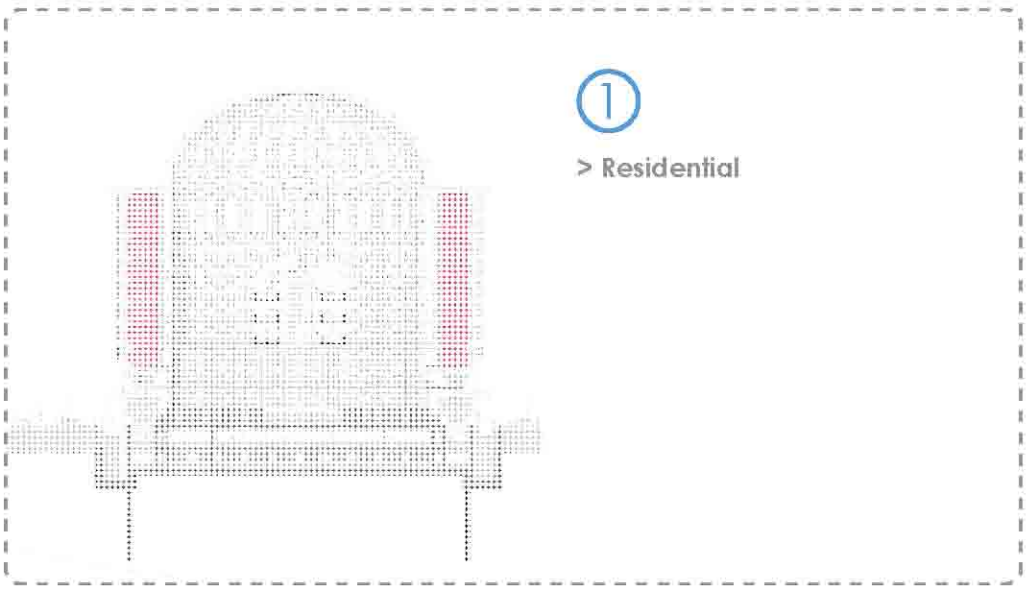


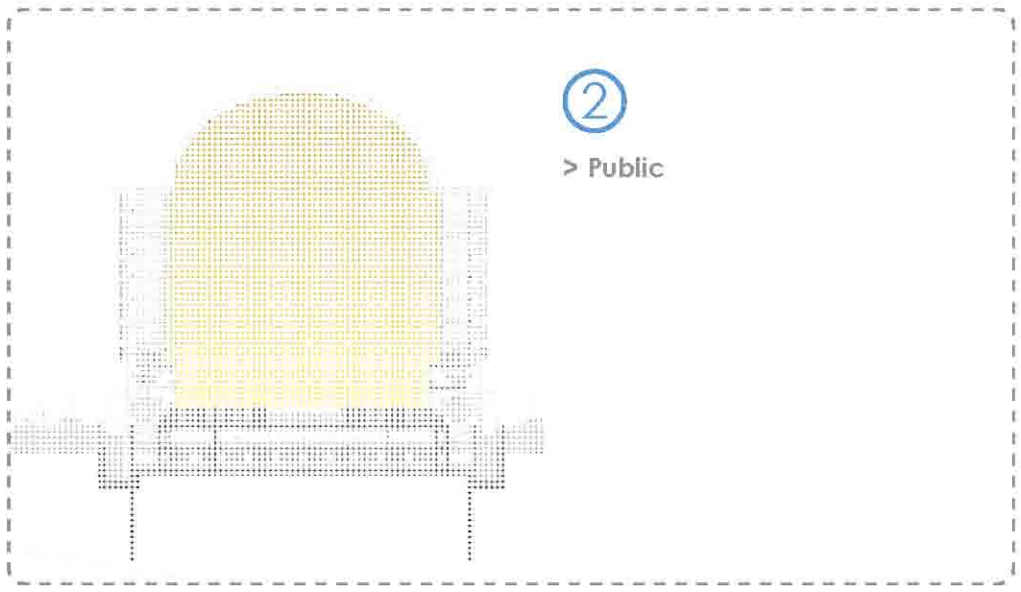
> Internal Average

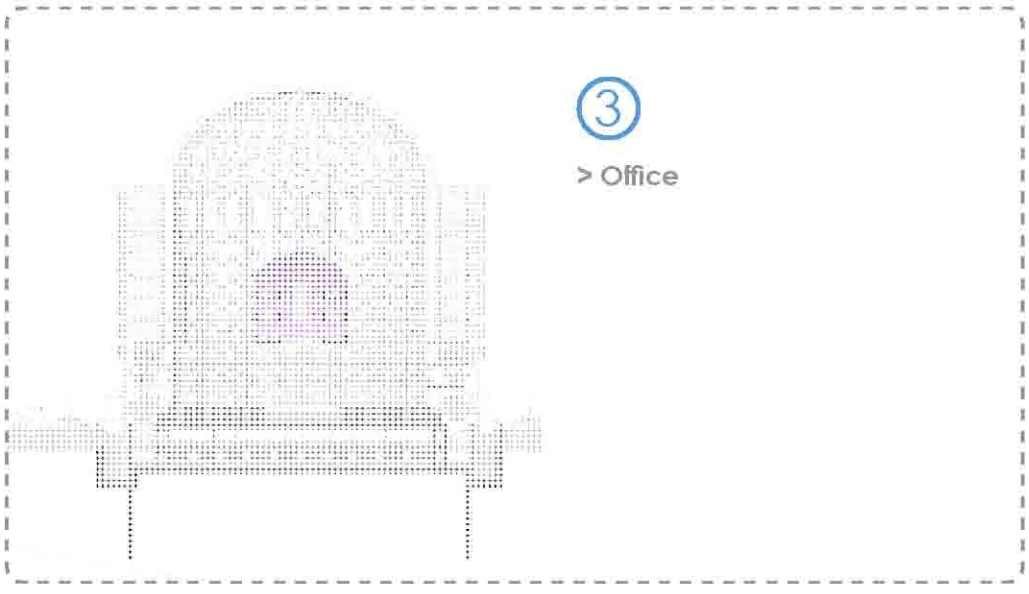
> to achieve a **comfortable thermal environment**, should maintain **temperatures between 21 - 25*c**

London Climate averages







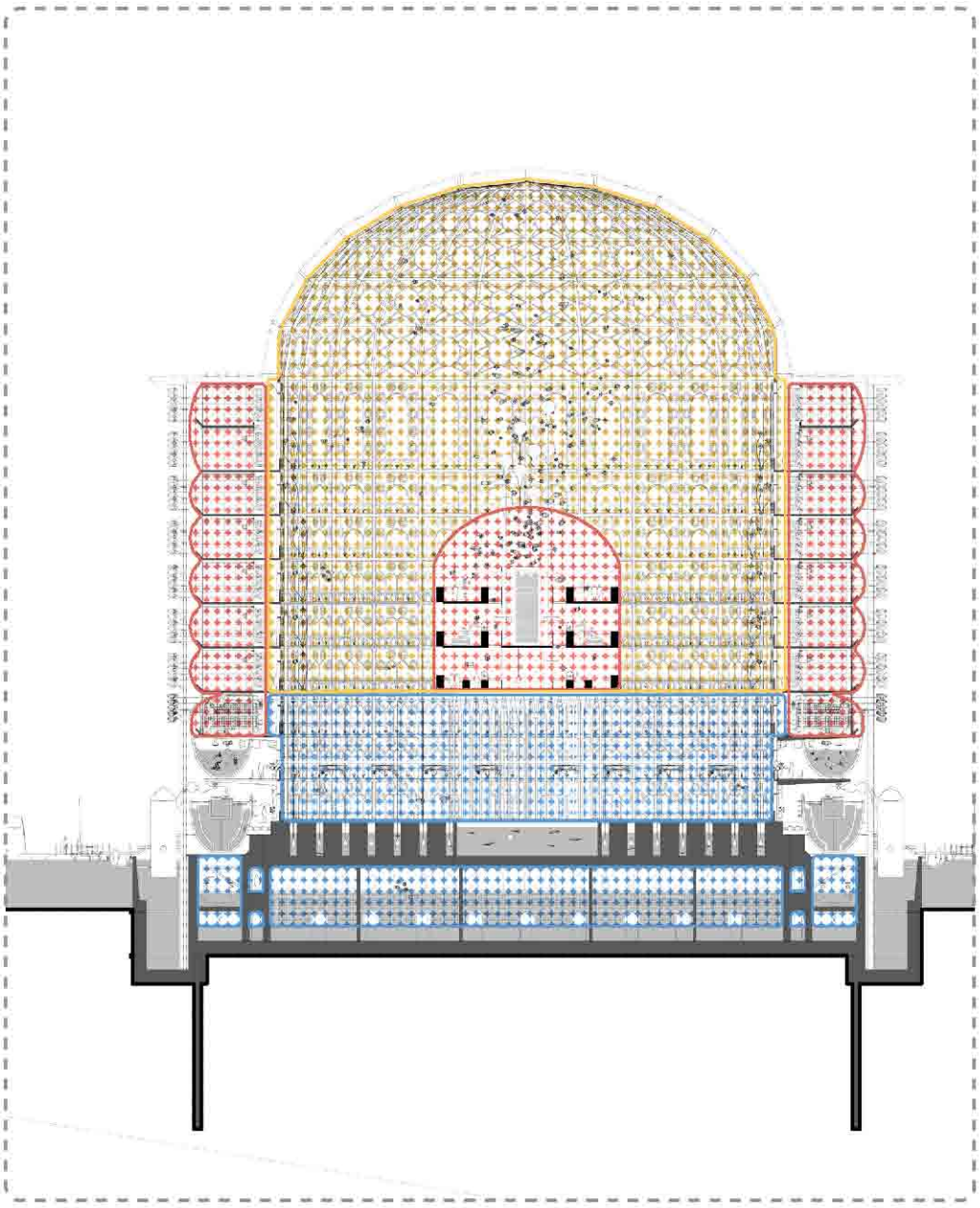


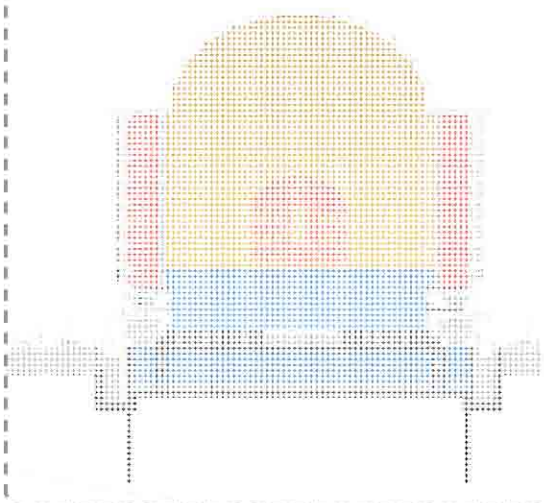
3.1 [1] __CLIMATE

Environmental Zoning

Defining 3 Climates to control:

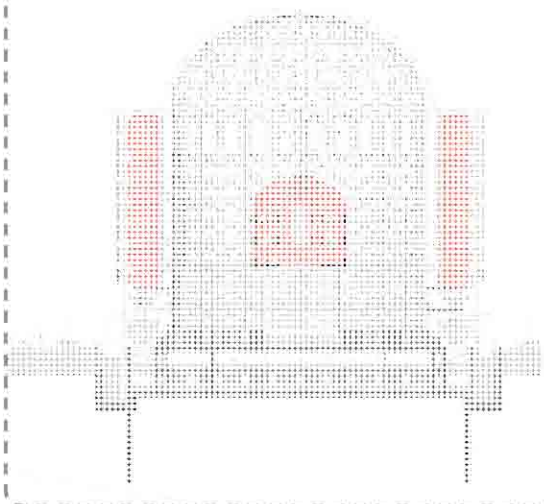
> Residential
> Public
> Office





> The **building** can be separated into **3 natural temperature zones**

> These are **dictated** by their **locations** throughout the building as well as the **activities** carried out in them



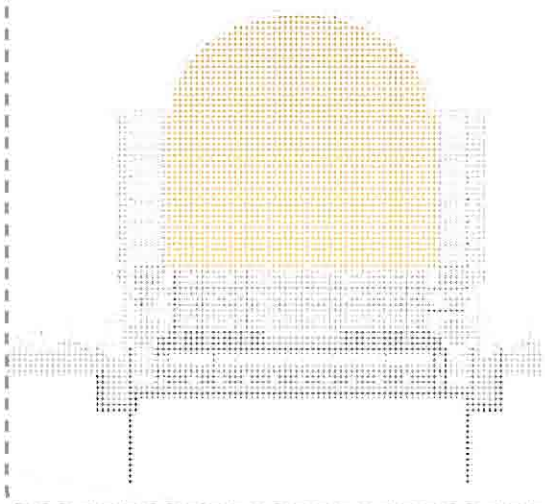
Hottest

> Prefabricated modules

> **Hottest** in the building

> **VR panels** and **industrial equipment** will **emit heat**

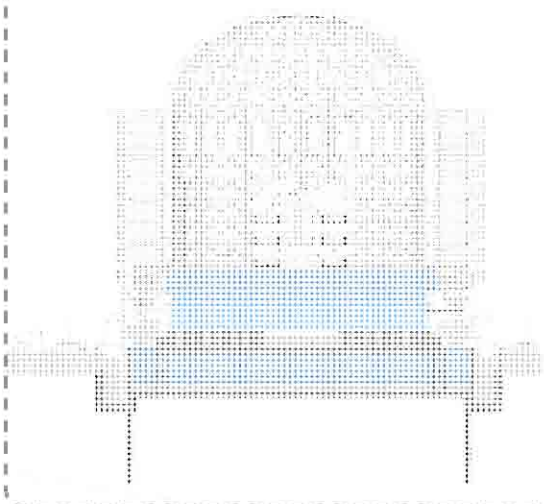
> **High levels** of **occupancy** night and day meaning **people** will also **emit heat** in these areas



> Atrium

> **Warm** air will rise into the atrium space

> Hot and stale ventilated air from the prefabricated modules will collect in this area



Coldest

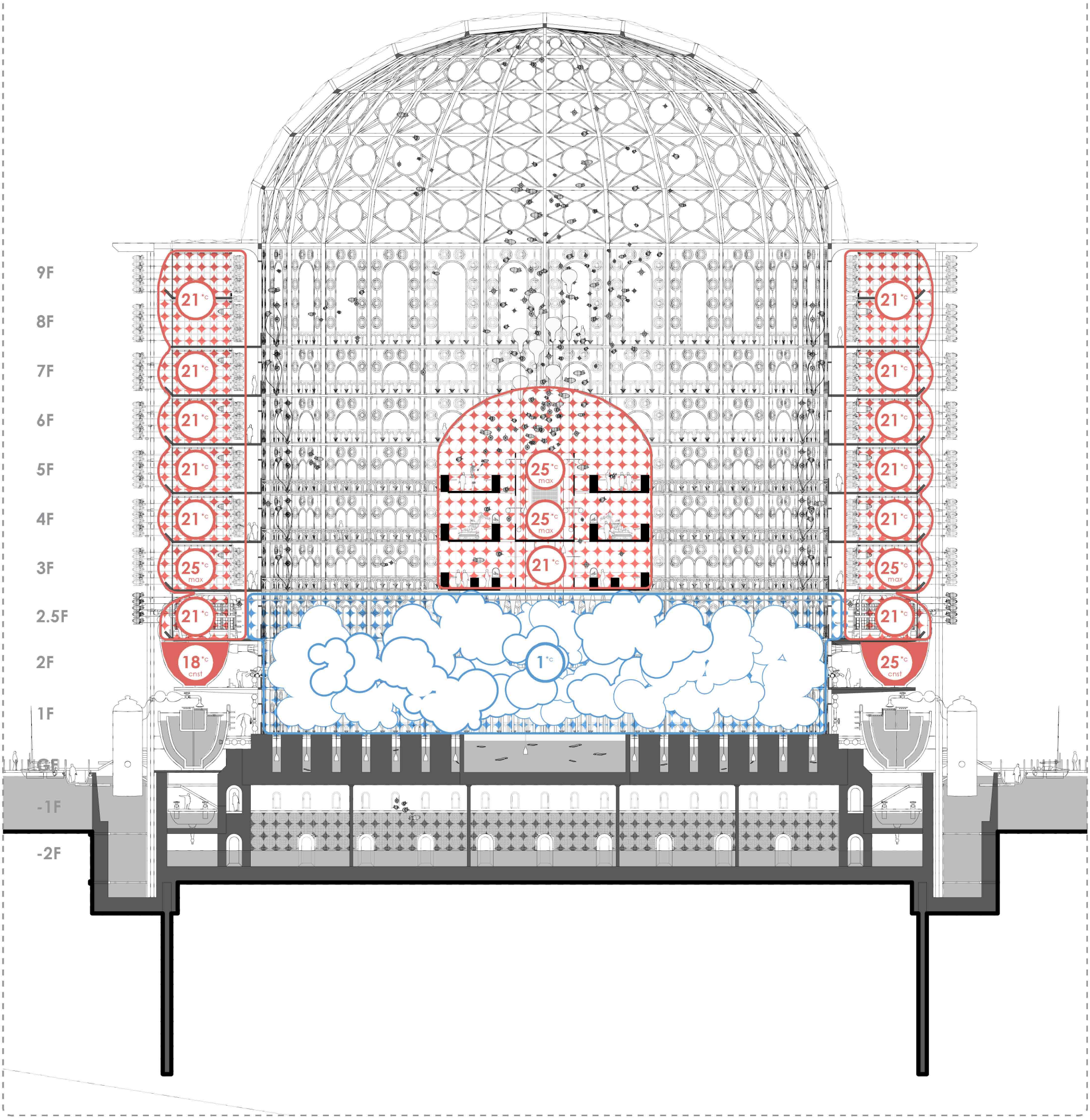
> Charged Landscape
> Reservoir

> **Coldest** in the building

> Thames water will reduce temperature of concrete base, sucking heat from the lower areas of the building

> Drafts through openings caused by individuals accessing the building via the North, South and Western cores will also increase heat loss from the lower levels

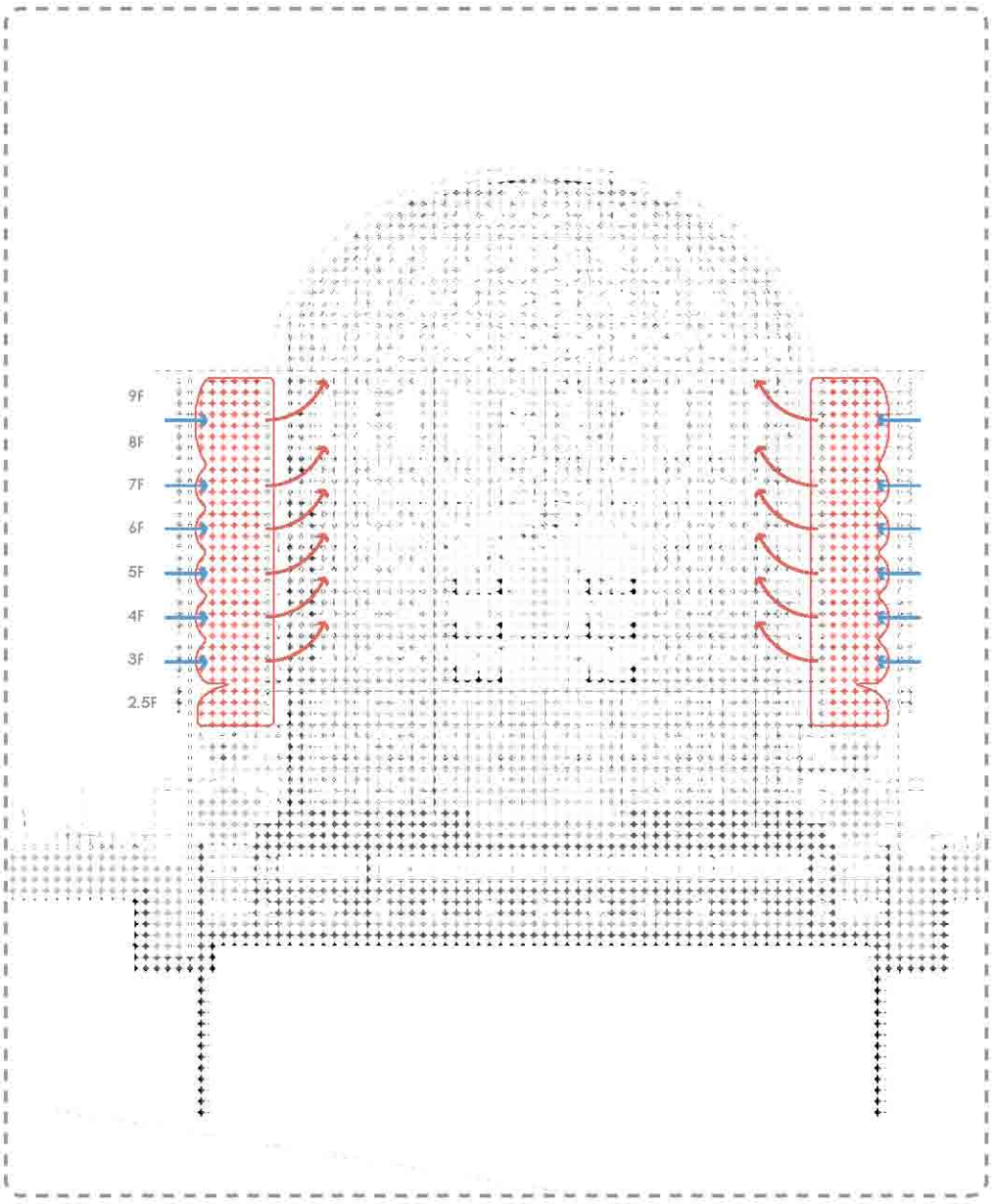
Building Temperature Zones

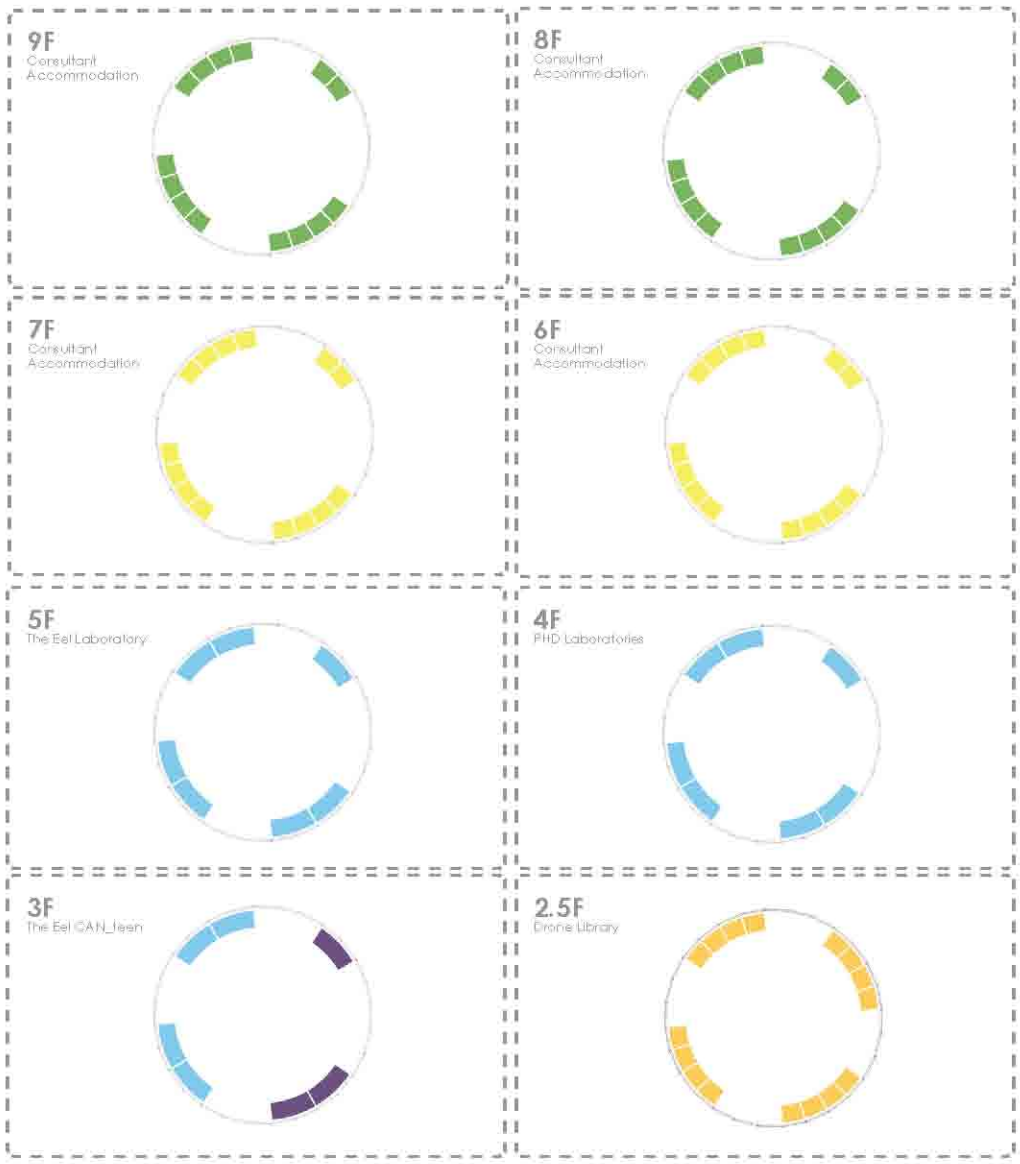


3.1 2 __CLIMATE

Environmental Zoning

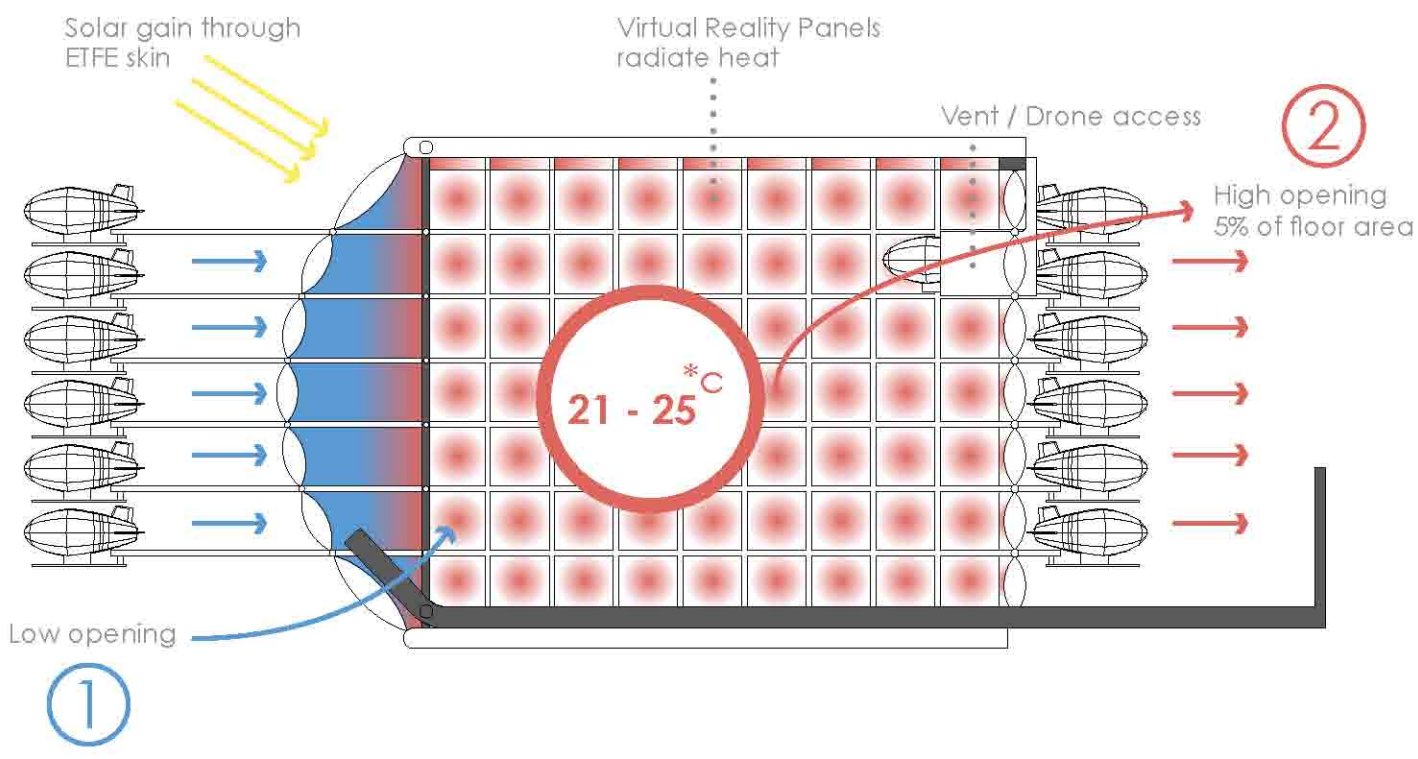
Desired Temperature Zones in order to create distinct desired climates

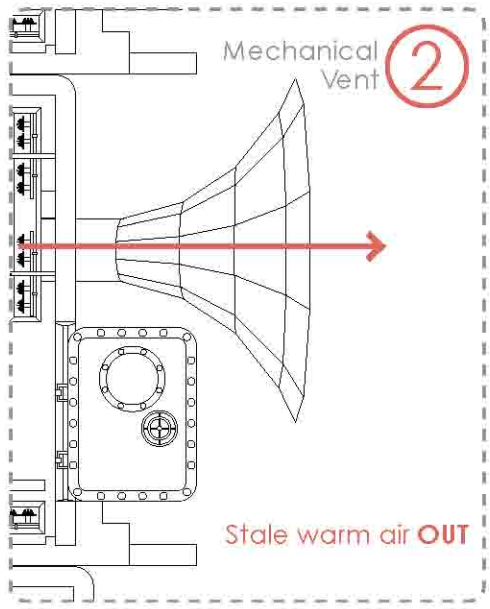


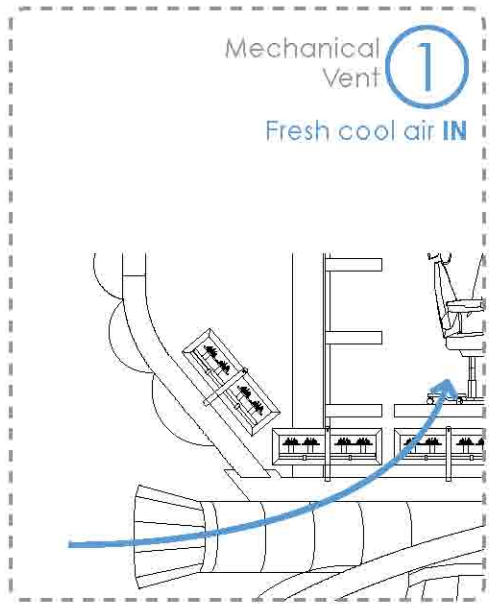


Environmental Strategy

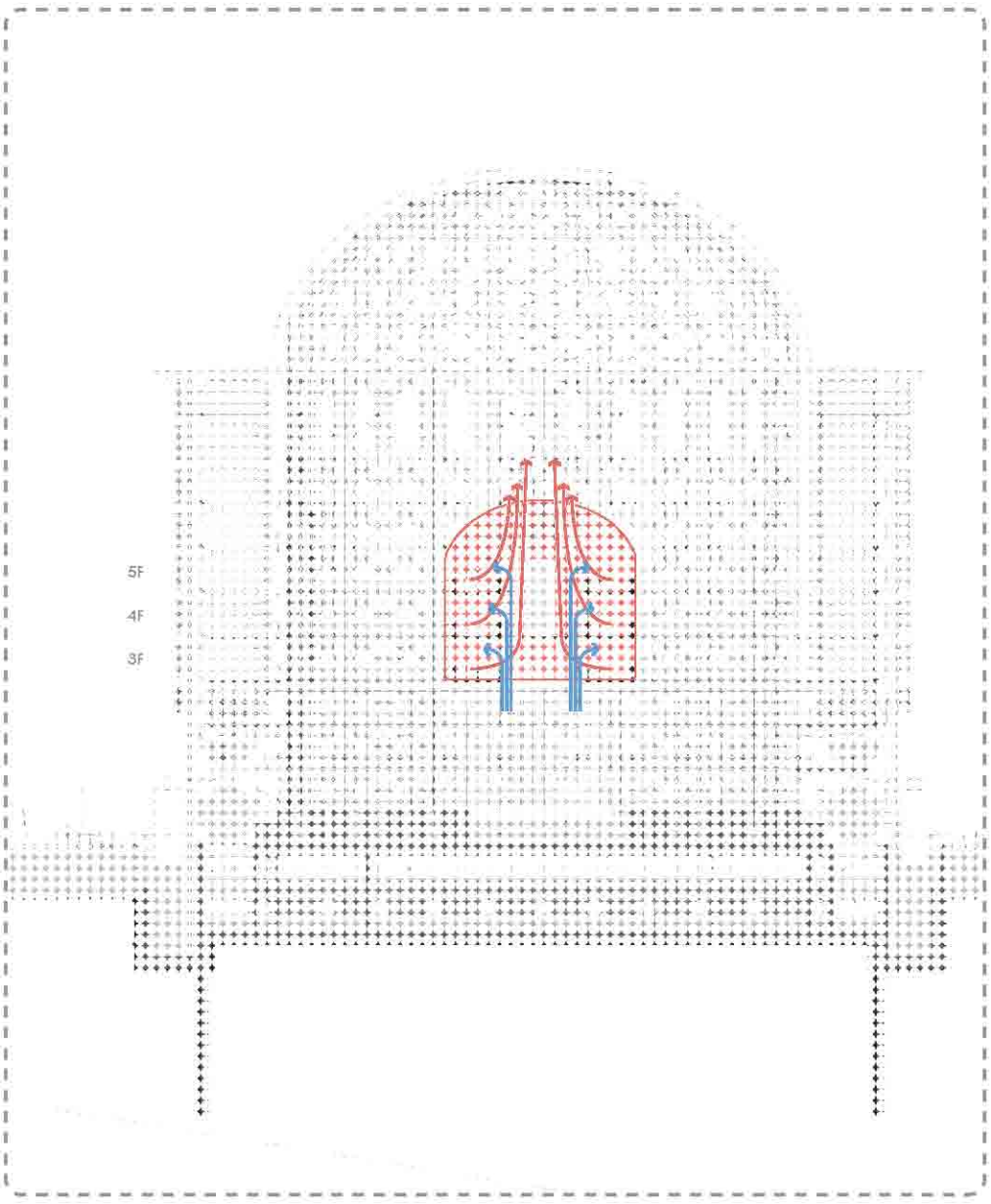
> **Ambition:** Maintain a temperature **between 21 - 25 *c**
> **Challenges: Over heating** will be a **major problem** due to ETFE skin and heat emitting VR panels
> **Strategy:** [Mechanically driven] **cross ventilation**
- Low external openings provide an inlet for fresh cool air
- High internal openings provide an outlet for stale warm air
- **Openings = 5% of floor area = maximum removal of heat**

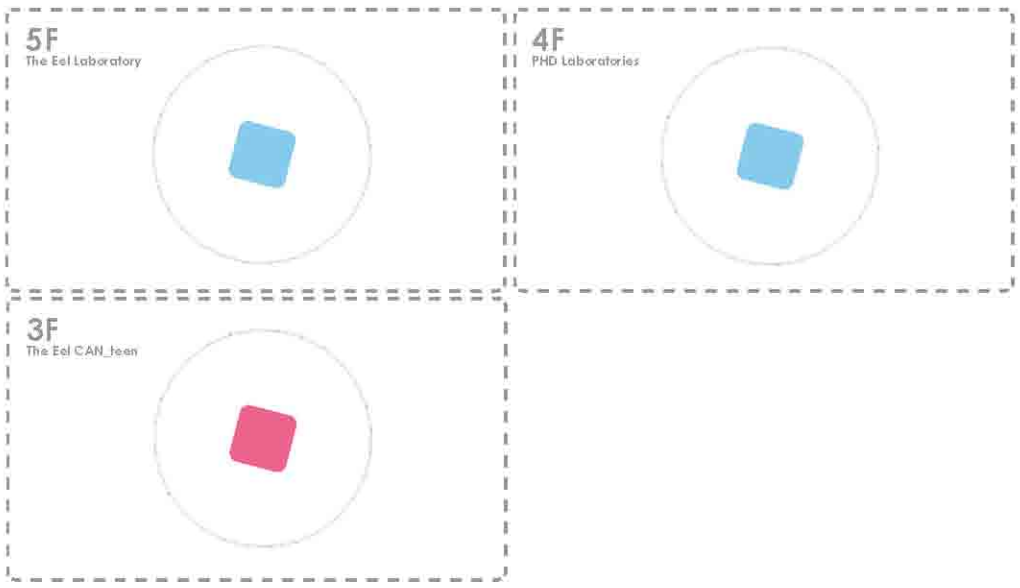






Desired Climate 1:
Residential and office environment





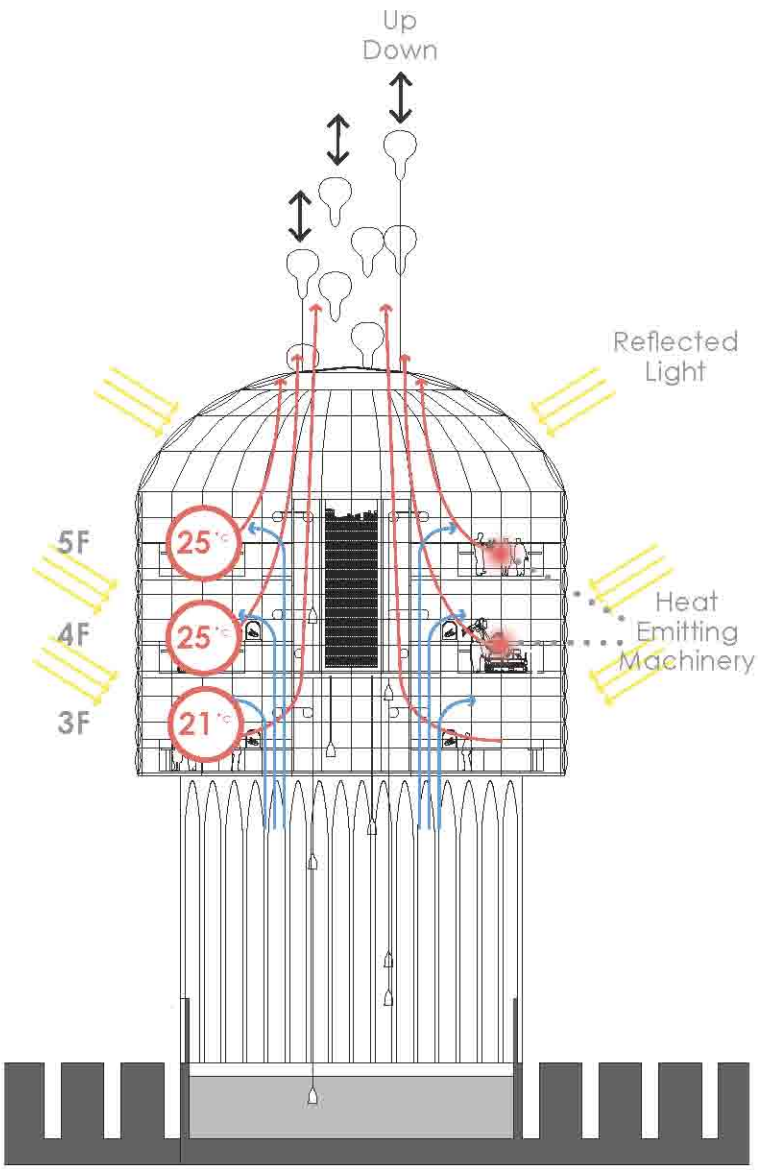
Environmental Strategy

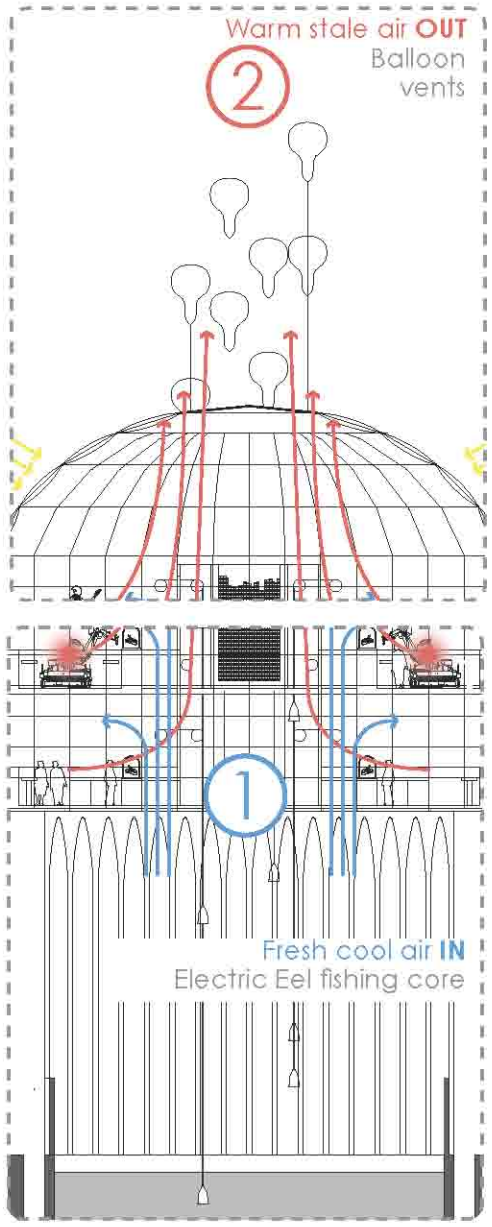
> Ambition:
- Maintain a comfortable environment to **dwell** and **eat as well as conduct 'Turin Test's'** in the **Eel CAN_teen**
- Maintain a suitable environment to **work** within the laboratory

> Challenges:
- **Prevent spread of odours** from the **Eel CAN_teen**
- **Extract excess heat** created by robotic **machinery** in the **laboratory**

> Strategy: Mechanical extraction
- **Eel CAN_teen** heat extracted through **Electric Eel fishing core**

> Strategy: Natural Stack
- **Eel laboratory** heat dissipated through drone access channels and out of the module through **balloon sealed openings**

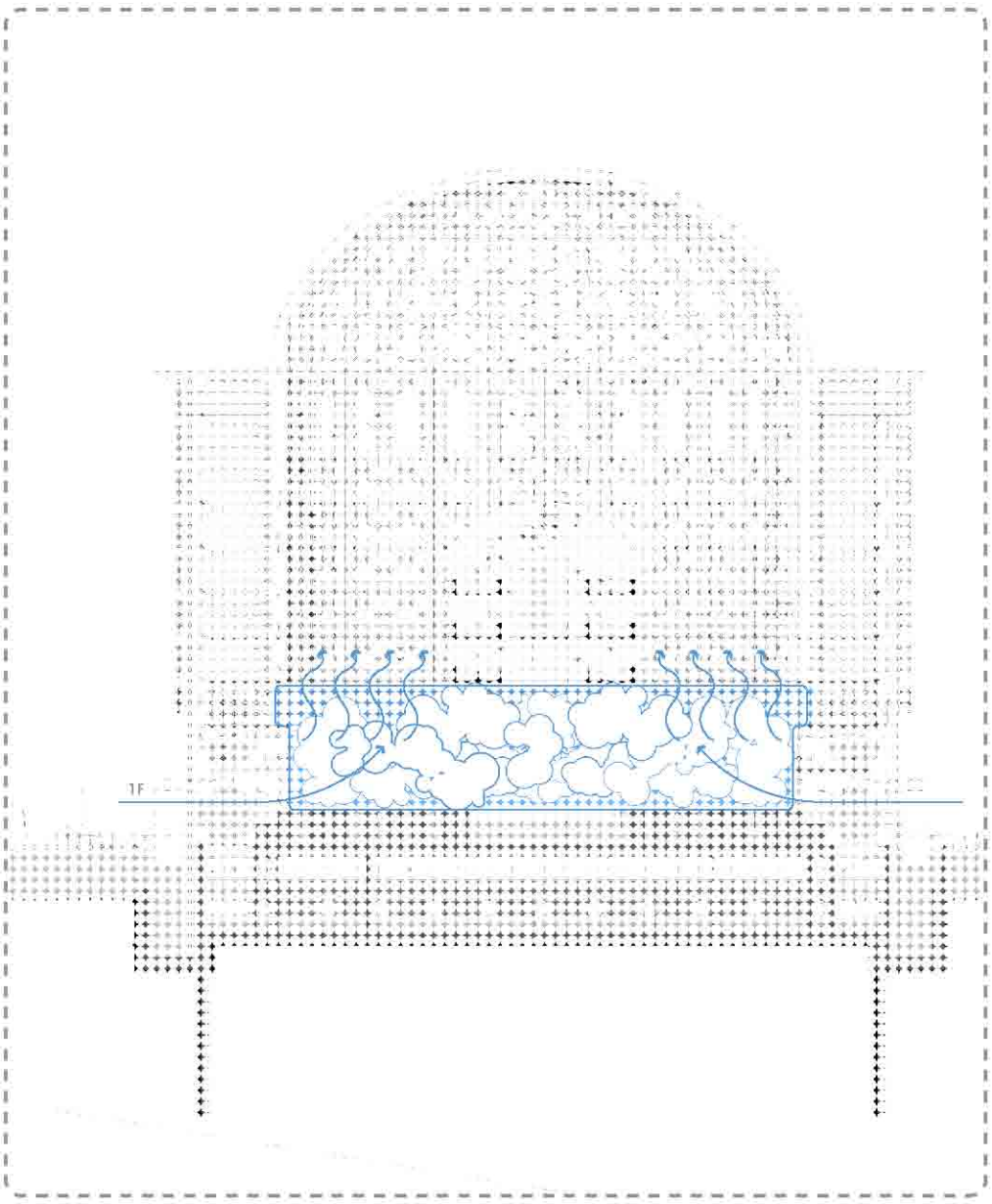


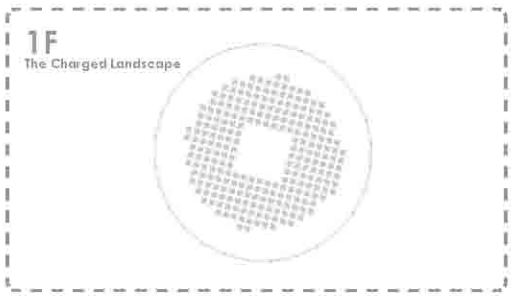


3.1 3__CLIMATE

Environmental Zoning

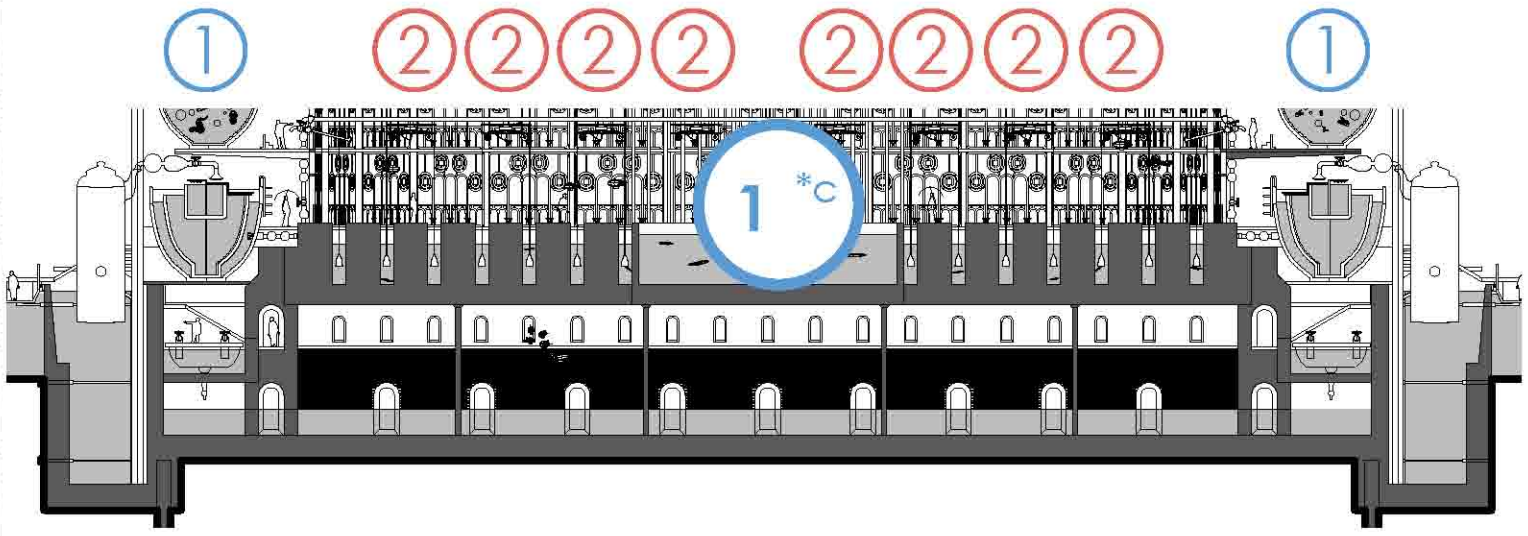
Desired Climate 2:
4F / 5F: A workshop environment in the Eel Laboratory.
3F: A dwelling and eating environment in the Eel CAN_teen as well as conducting Turin Test's on the Posthuman subjects.

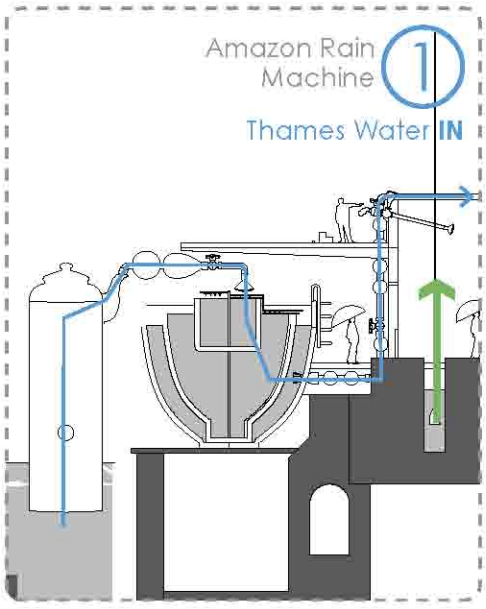


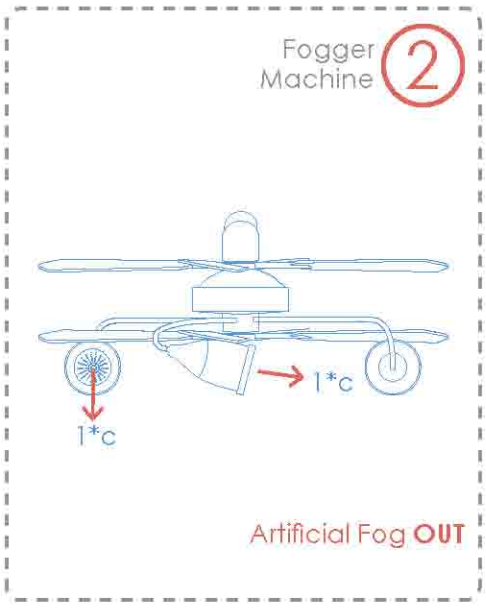


Environmental Strategy

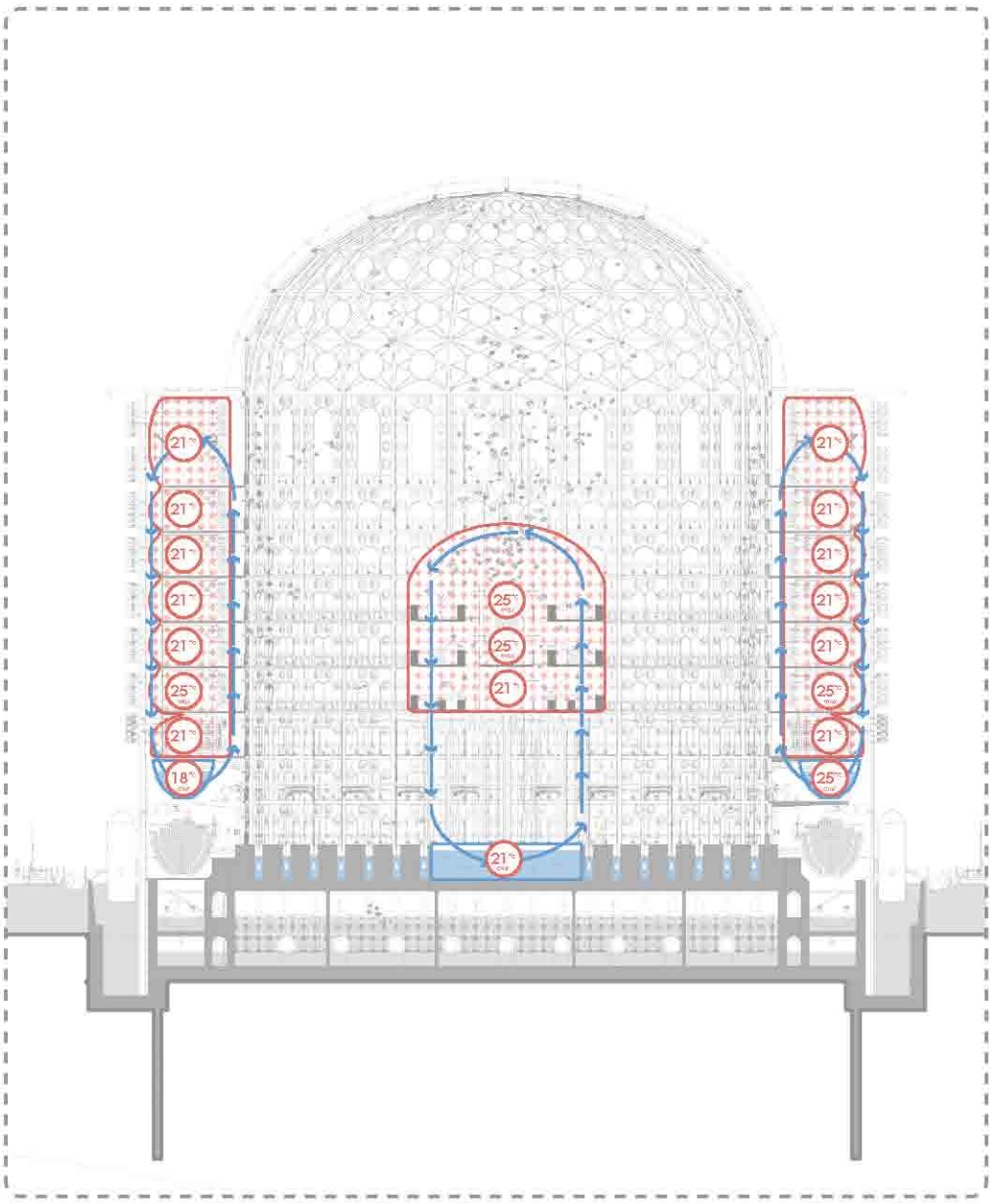
> **Ambition:** Suspend a temporary **blanket of artificial fog** intermittently throughout the day
> **Challenges:** achieving the **1*c 'dew point'** where **fog forms**
> **Strategy:** utilising **'Fogger machines'**
- extracting **Thames river water** and filtering
- supplying **'Fogger machines'** with cool clean water

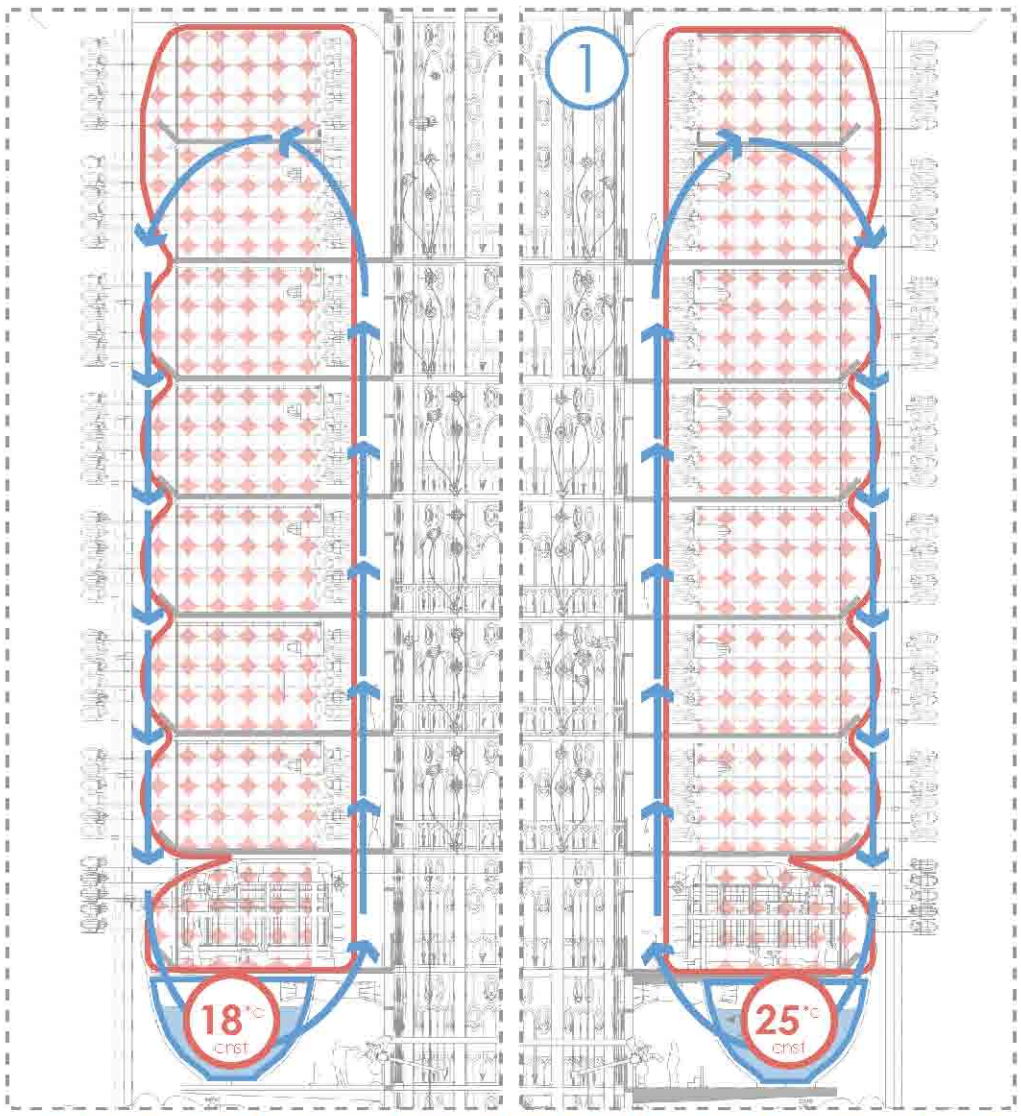






Desired Climate 3:
A unique spectacle: suspended cloud





Each Eel soup tank requires **heating** to **different temperatures**: the **optimum temperature** for the Eels to **grow at the optimum rate** in that **particular stage** of their growth cycle

Energy Strategy

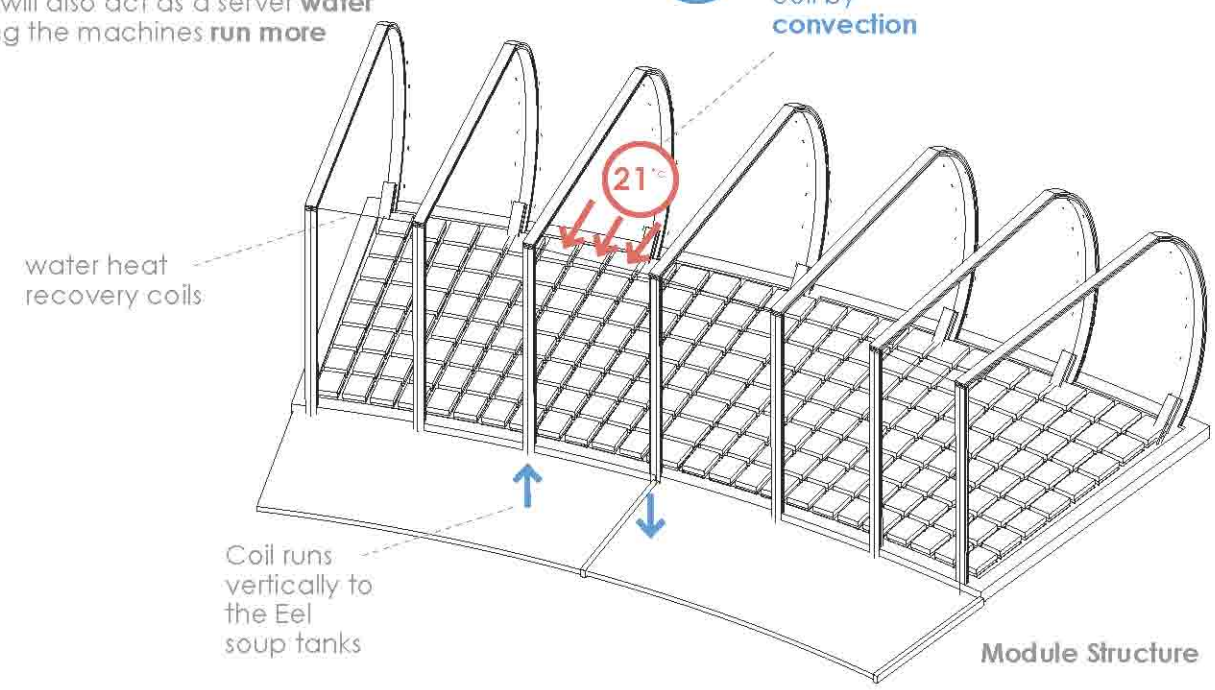
> Ambition:
- **Heat Eel soup tanks** to desired temperatures using **excess heat recovered** from the prefabricated **modules** and **server terrace's**

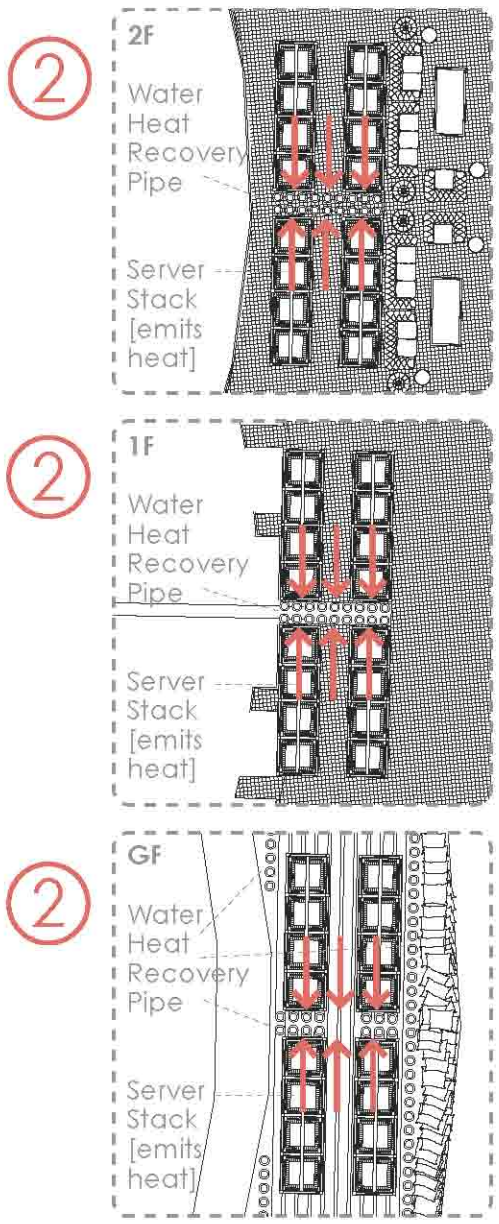
> Challenges:
- Heating **Each tank** to the **optimum temperature** for the **Eels to grow** at the **optimum rate** in that **particular stage** of their **growth cycle**

> Strategy:
- Utilise **'water heat recovery coils'** integrated into the design of each module running vertically through each stack of modules to the Eel tank.
- Heat can also be harboured from the **server terraces** in the same way. This will also act as a server **water cooling system** making the machines **run more efficiently**

2 **Heat** from servers **transferred** to coil by **convection**

1 **Heat** from room **transferred** to coil by **convection**

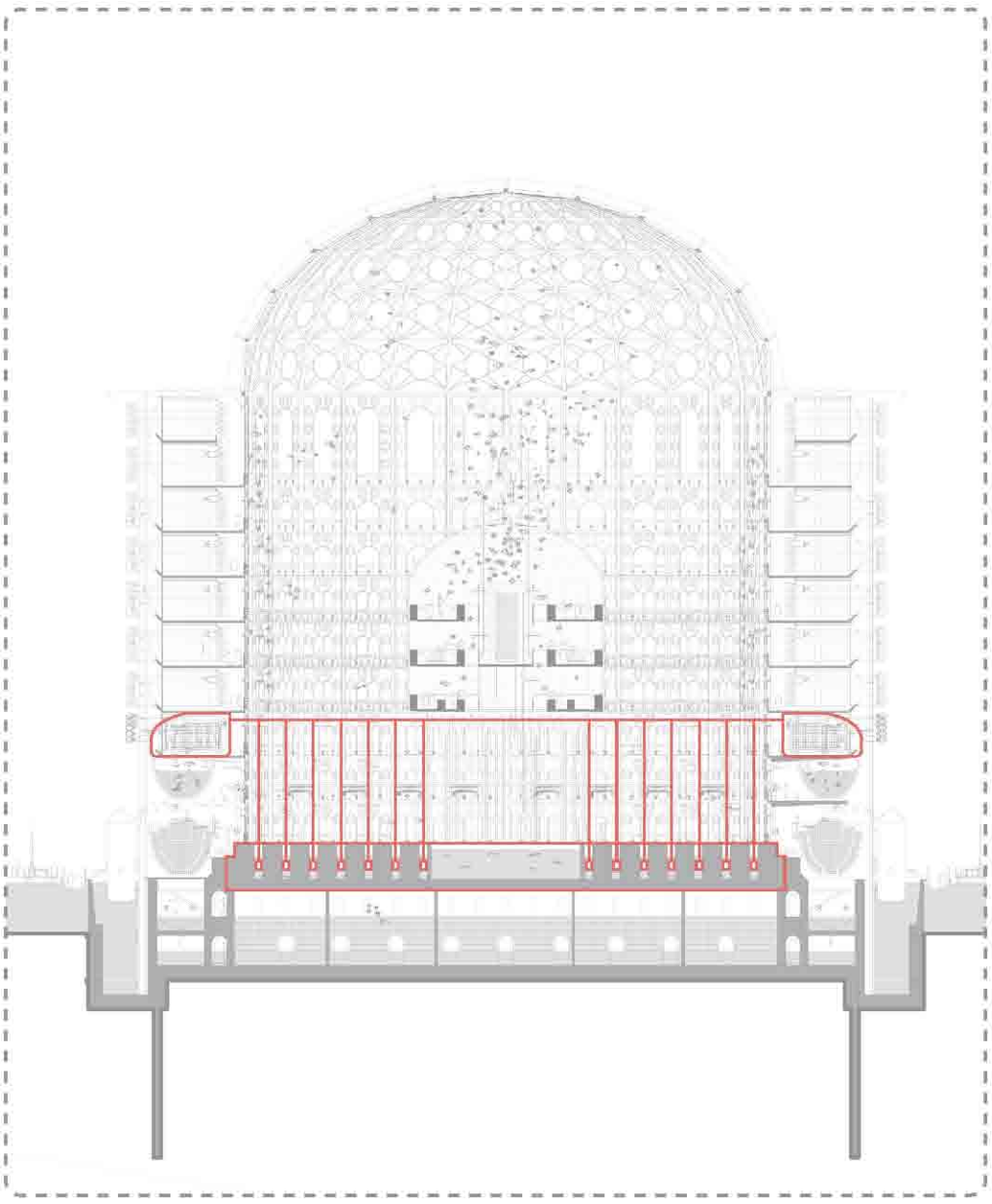


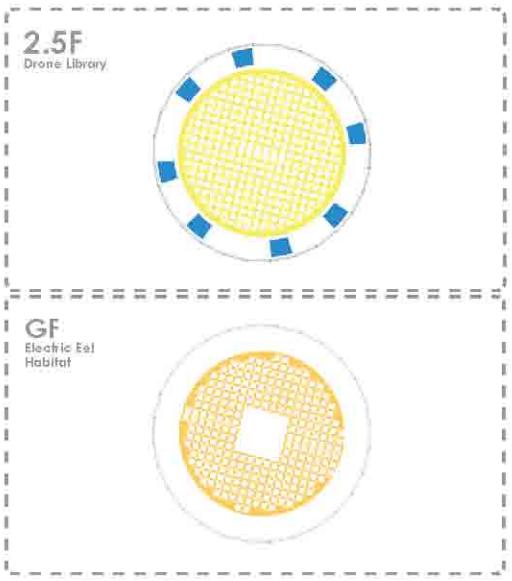


3.2_ENERGY

Energy Strategy

'Water heat recovery coils' utilised to heat 'Eel soup tanks'

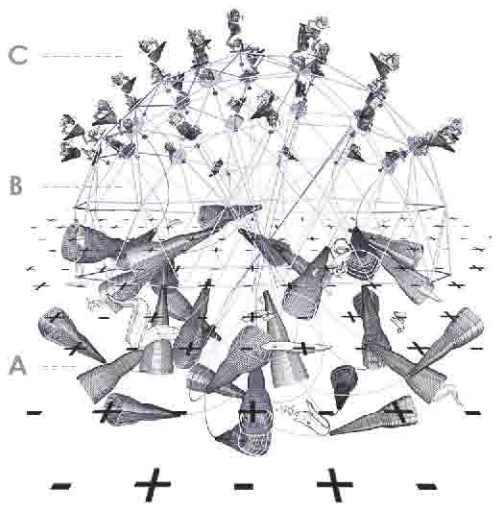


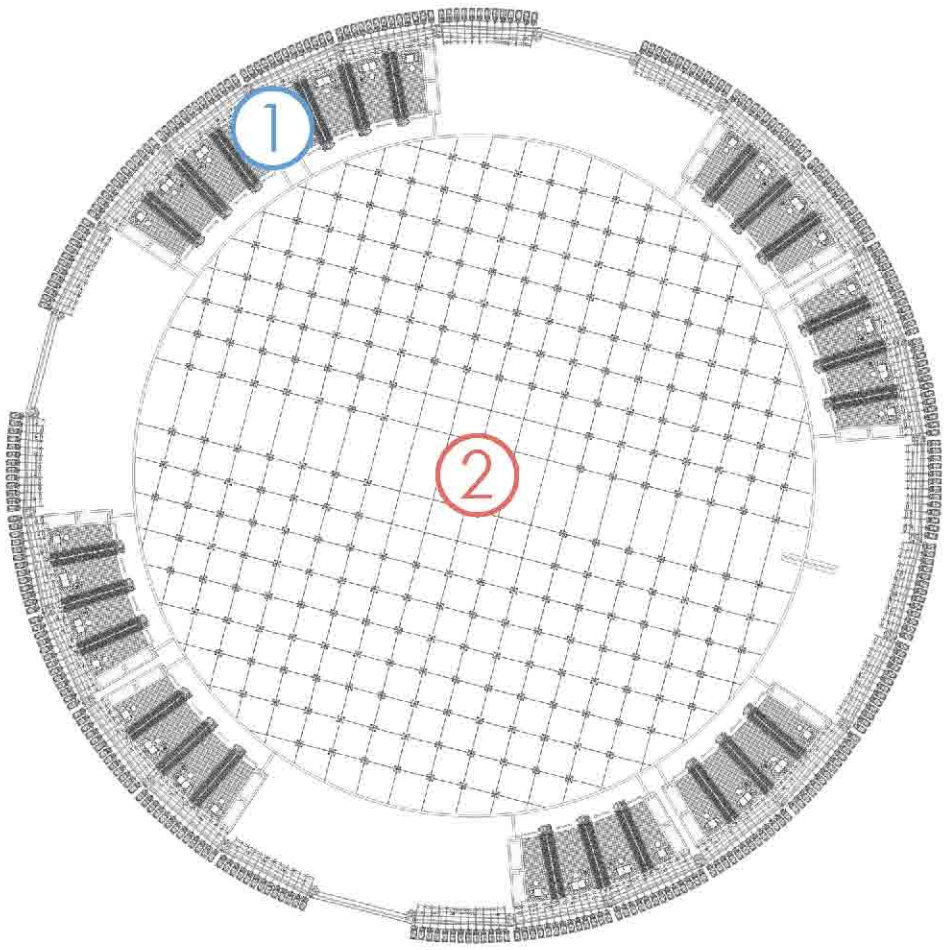


Energy Strategy

> Ambition: To re_charge batteries integrated into the design of the building with energy produced by electric eels
> Challenges: Collecting electrical energy that is produced passively as the Electric eel moves and hunts
> Strategy:
A: Reproduce an Electric eels native environment
B: Construct a network of adapted 'eel traps' that form a circuit capable of transfering electrical energy from the habitat to re_chargeable cells
C: Power ETFE inflation pumps and re_charge service drones

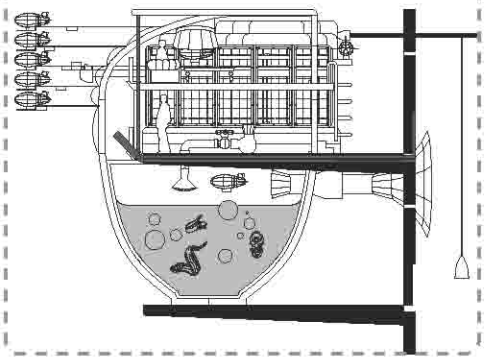
Original Concept Drawing





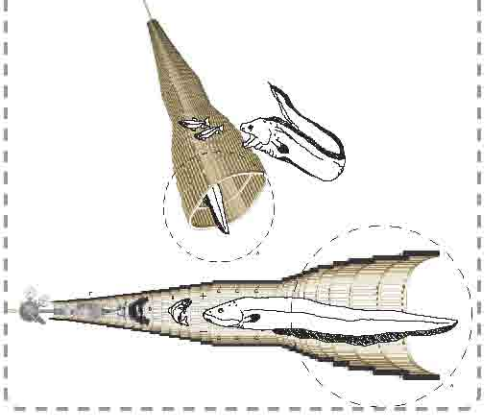
Drone Warehouse 1

Re_chargeable battery

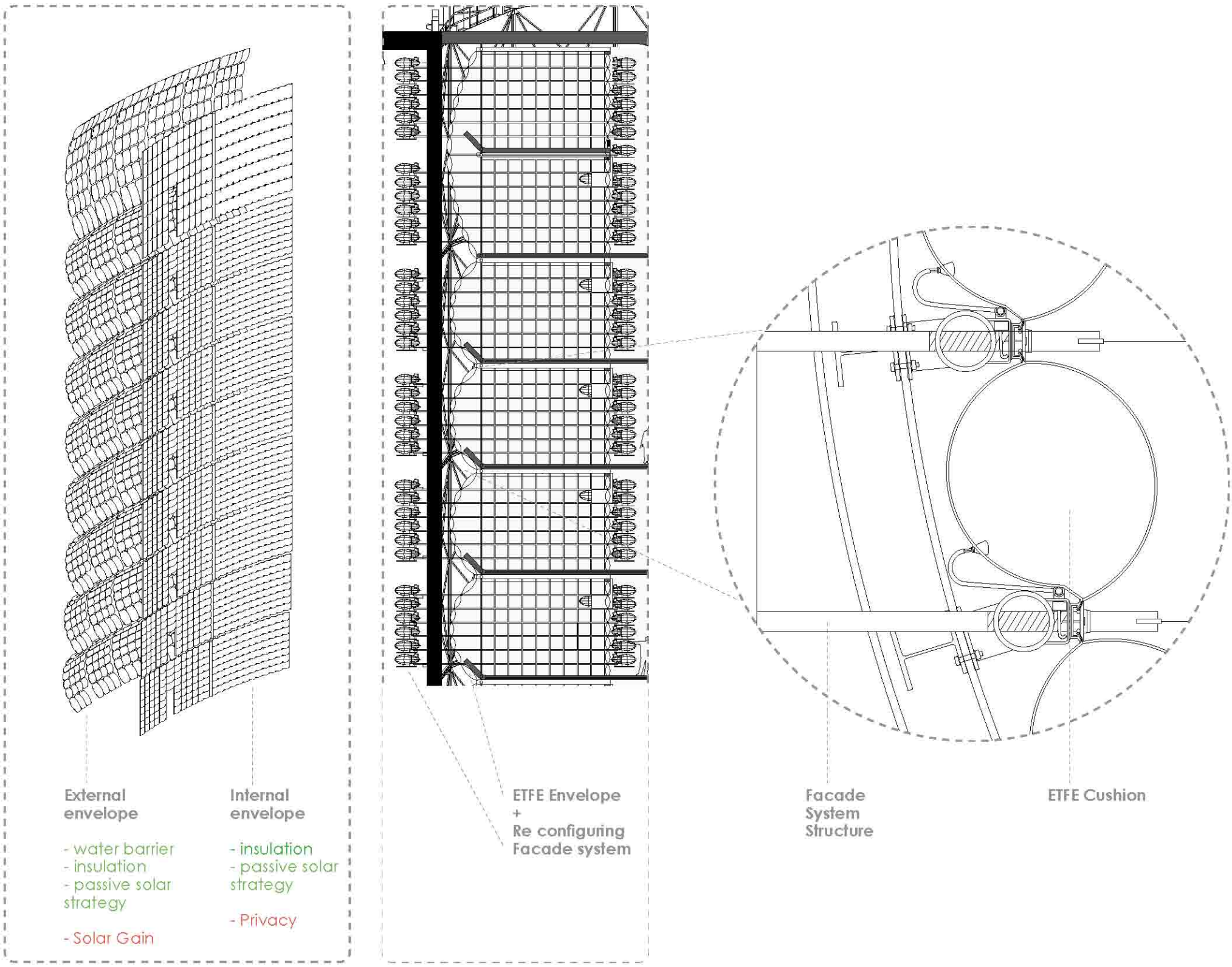


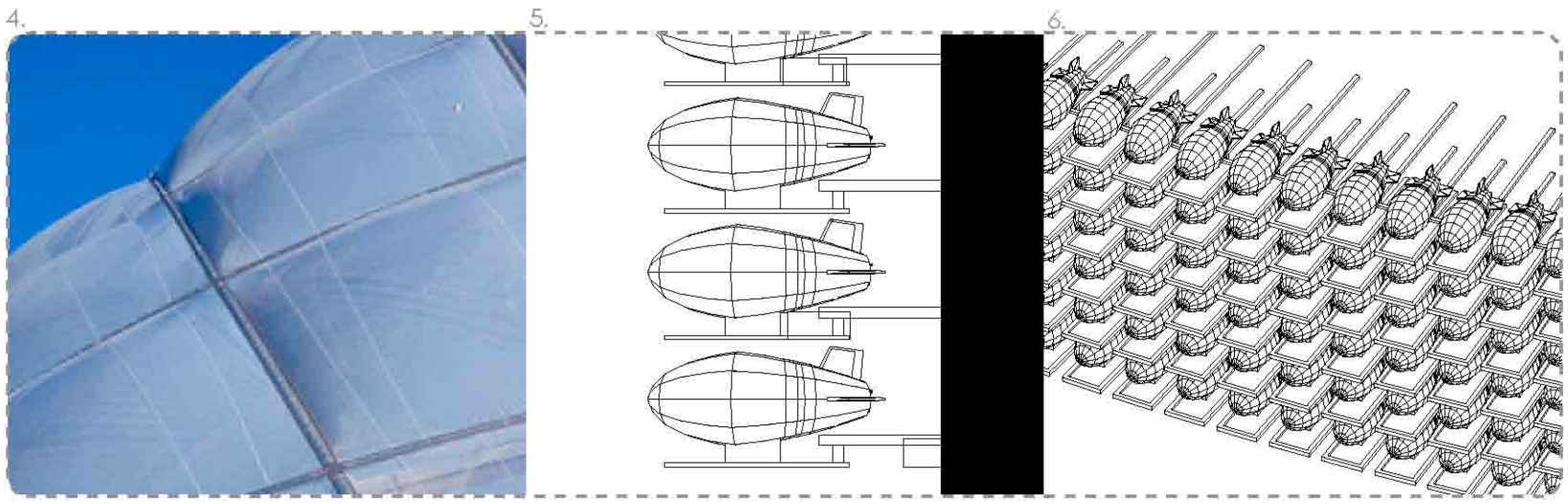
Eel Trap Network 2

Adapted Eel traps to collect electrical energy



'Electric Eel energy' utilised to power 'ETFE inflation pumps'

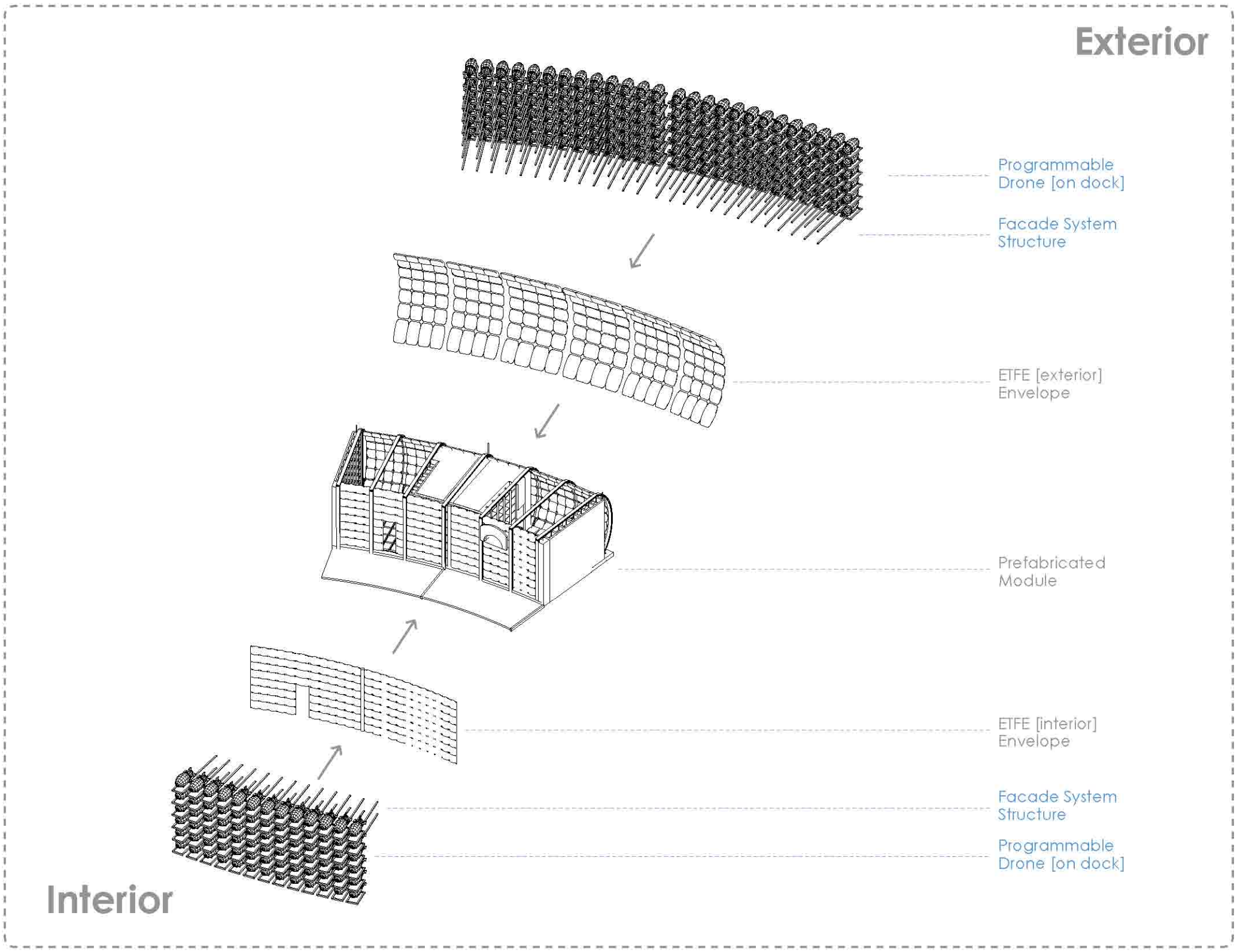


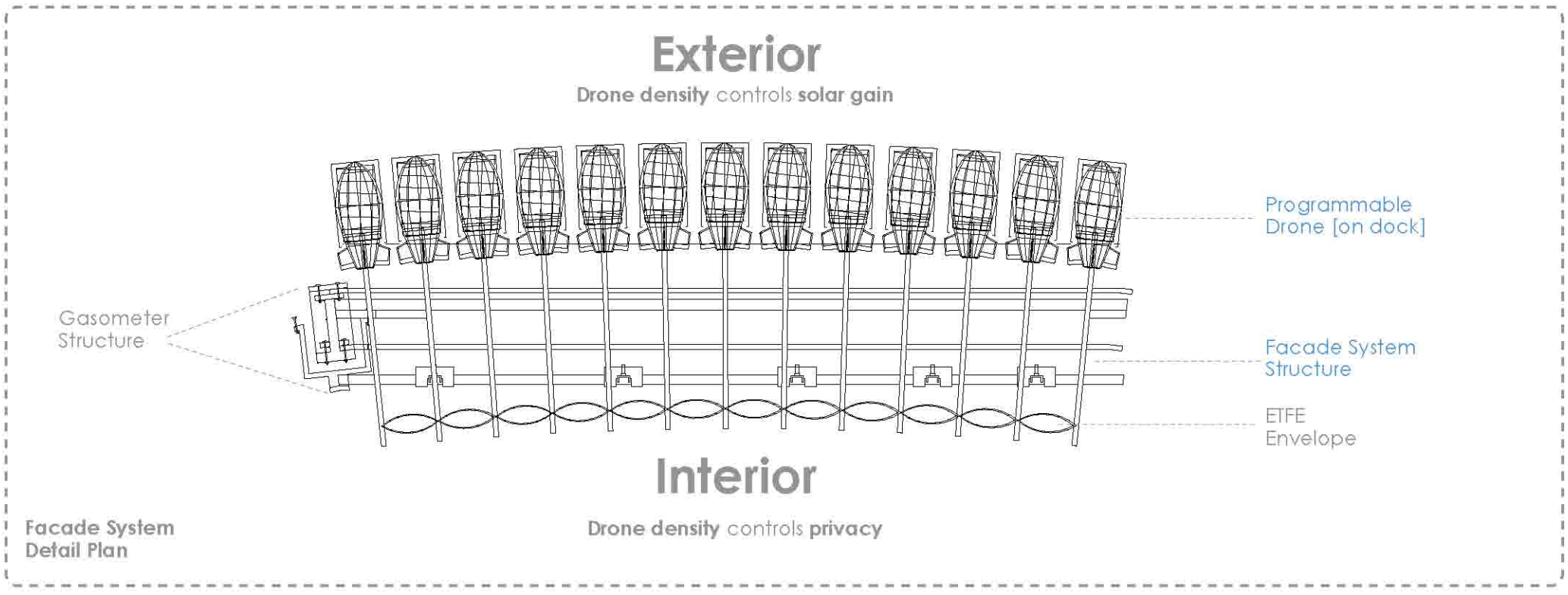


3.3_ENVELOPE

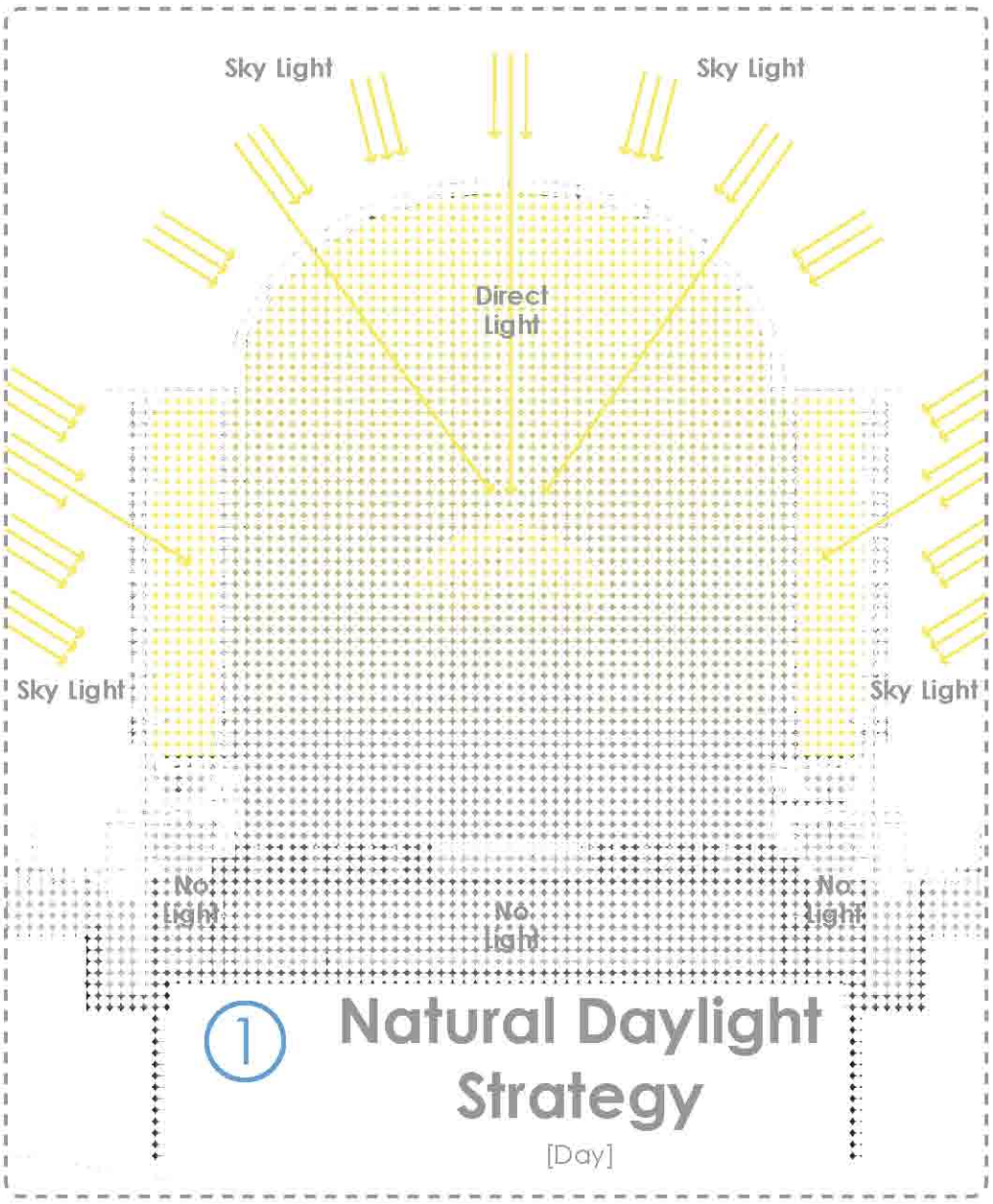
Building Envelope

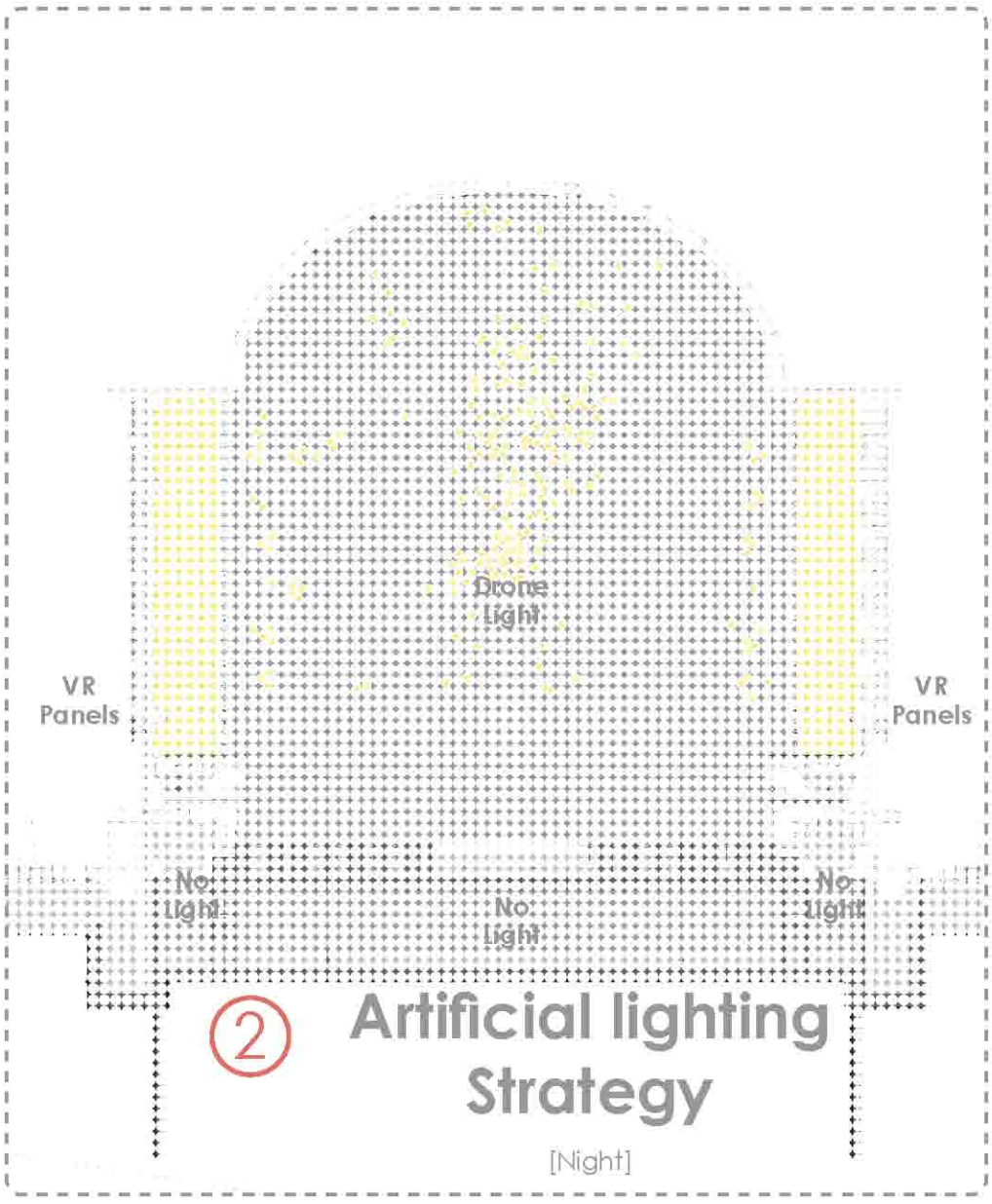
4. The building will be wrapped in an envelope of ETFE
5 - 6. with a re-programmable, re-configurable facade system





Drone density can be reprogrammed and re-configured on both the interior and exterior facades to alter both daylight penetration and privacy levels.



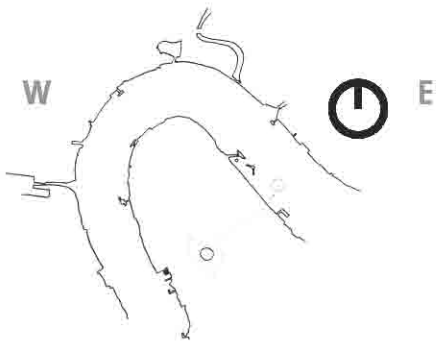


Site Over_Shadowing

> Natural Daylight Strategy:
- **ETFE skin** of modules and roof is **transparent** allowing **solar penetration** into the modules and atrium. The **lower levels** of the atrium will be **darker**, however this is necessary to **recreate** the correct **habitat** for the **electric eels**. This part of the building will also be **submerged in a man made cloud**

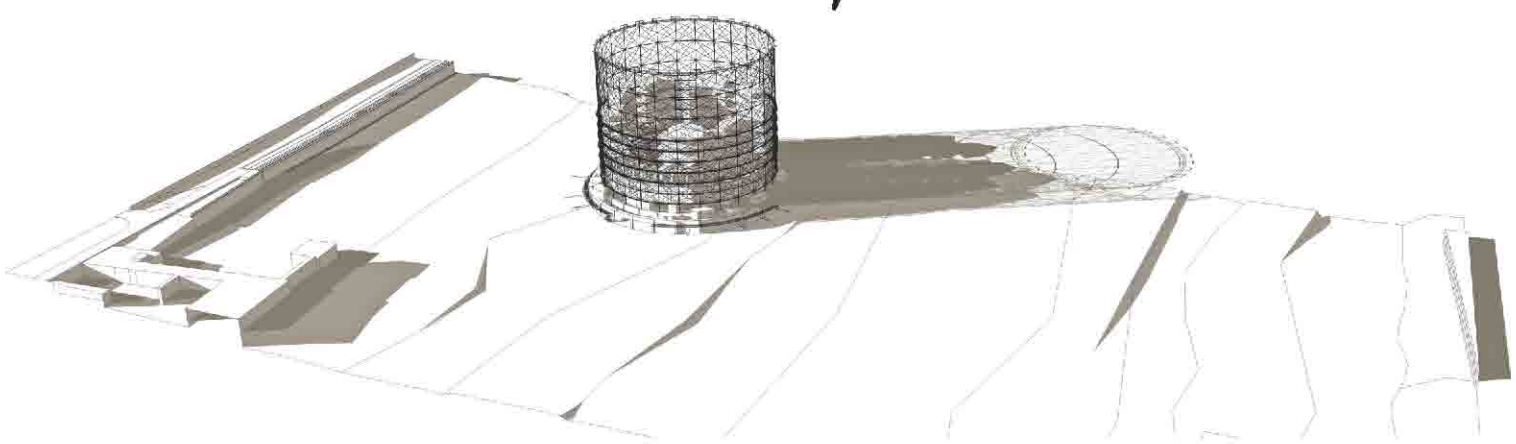
> Artificial Lighting Strategy:
- Virtual reality panels will emit light as well as service drones who act as mobile lanterns, lighting areas when required

> Site over_shadowing
- Tests conducted on the winter solstice when the shadows formed will be at an extreme

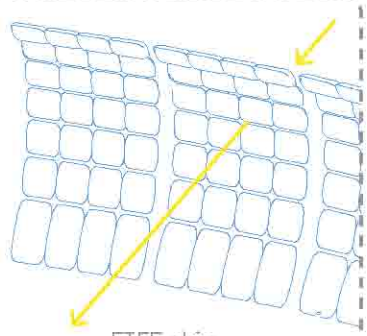


Majority of shadows cast on the Thames

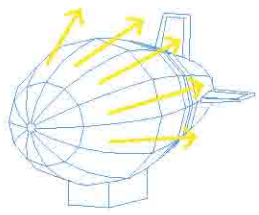
Winter Solstice : 12 Noon December 22



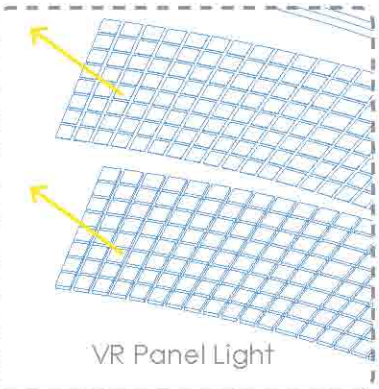
1



2



2

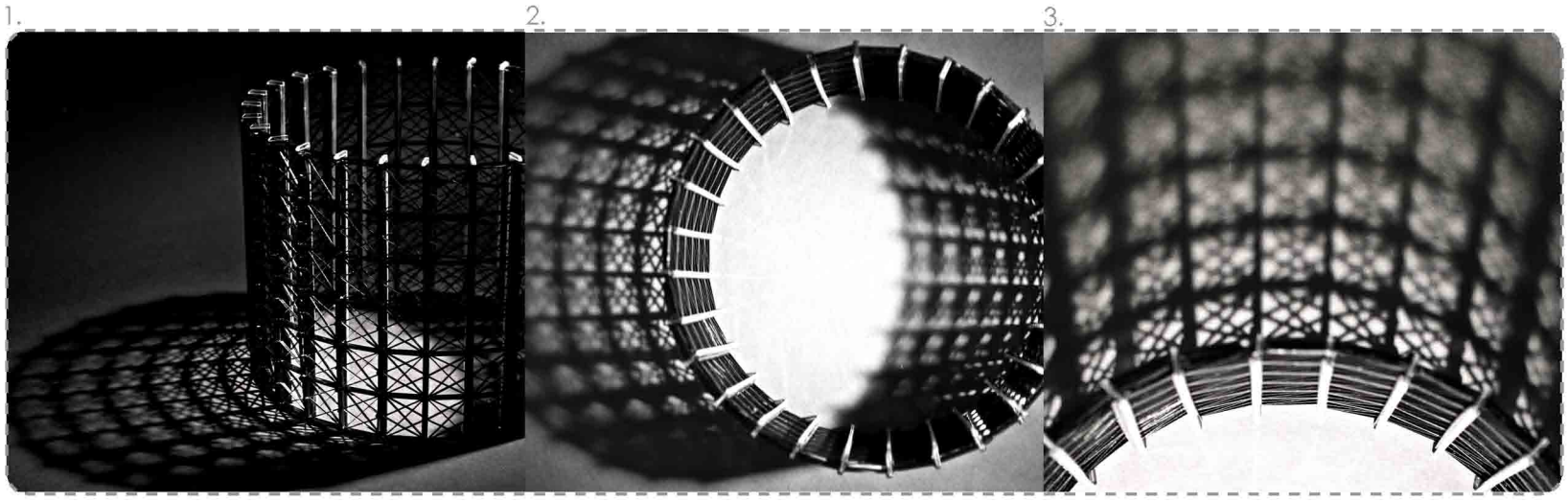


3.4_LIGHT

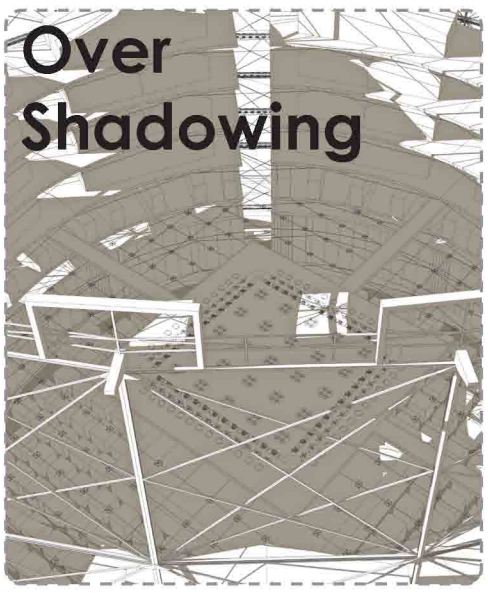
Daylight Strategy

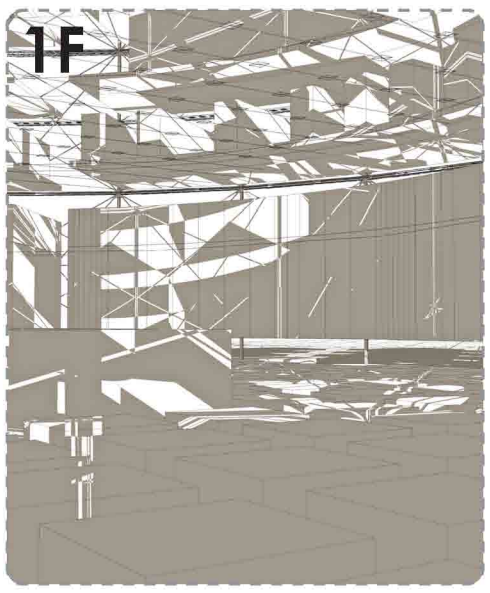
Natural and artificial lighting strategy

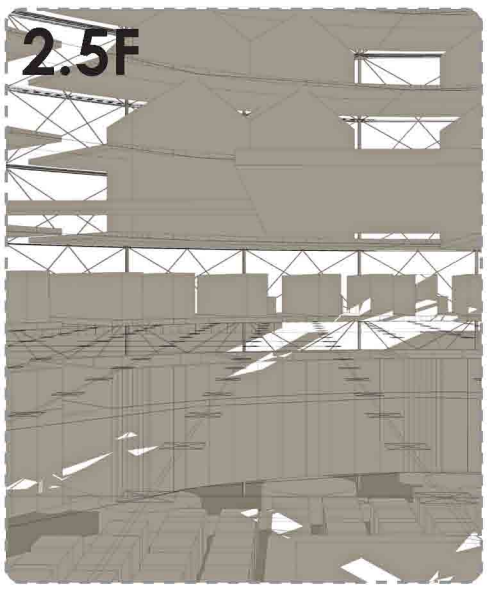
1. 2. 3.

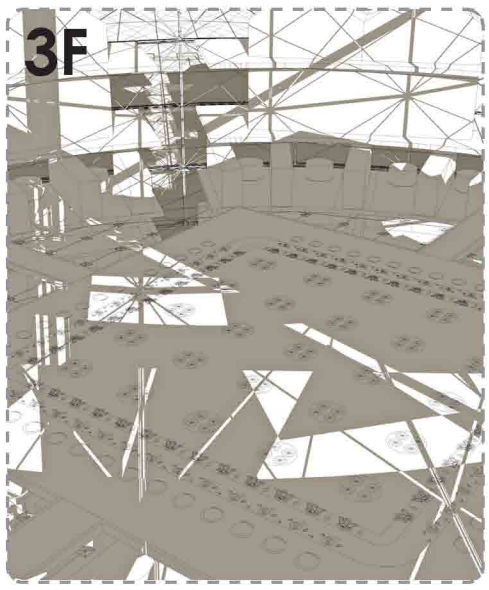


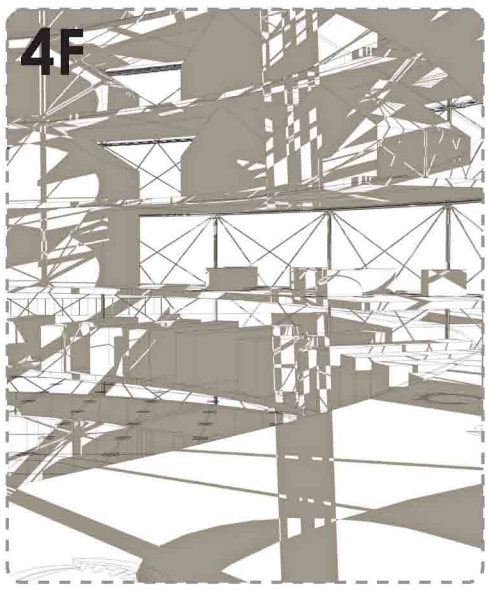
Opportunities for beautiful and dramatic shadows being cast by the Gasometer structure

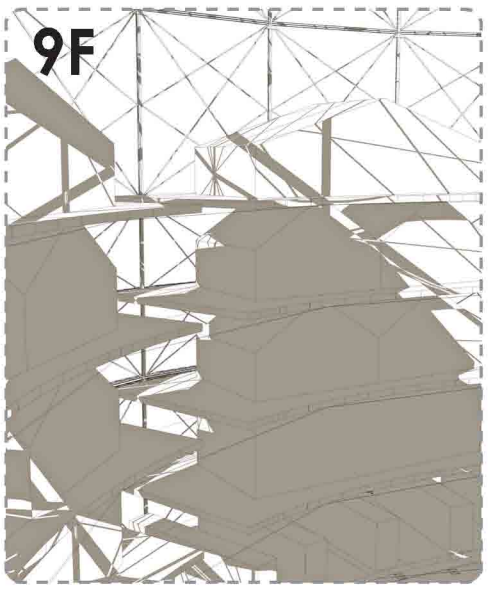






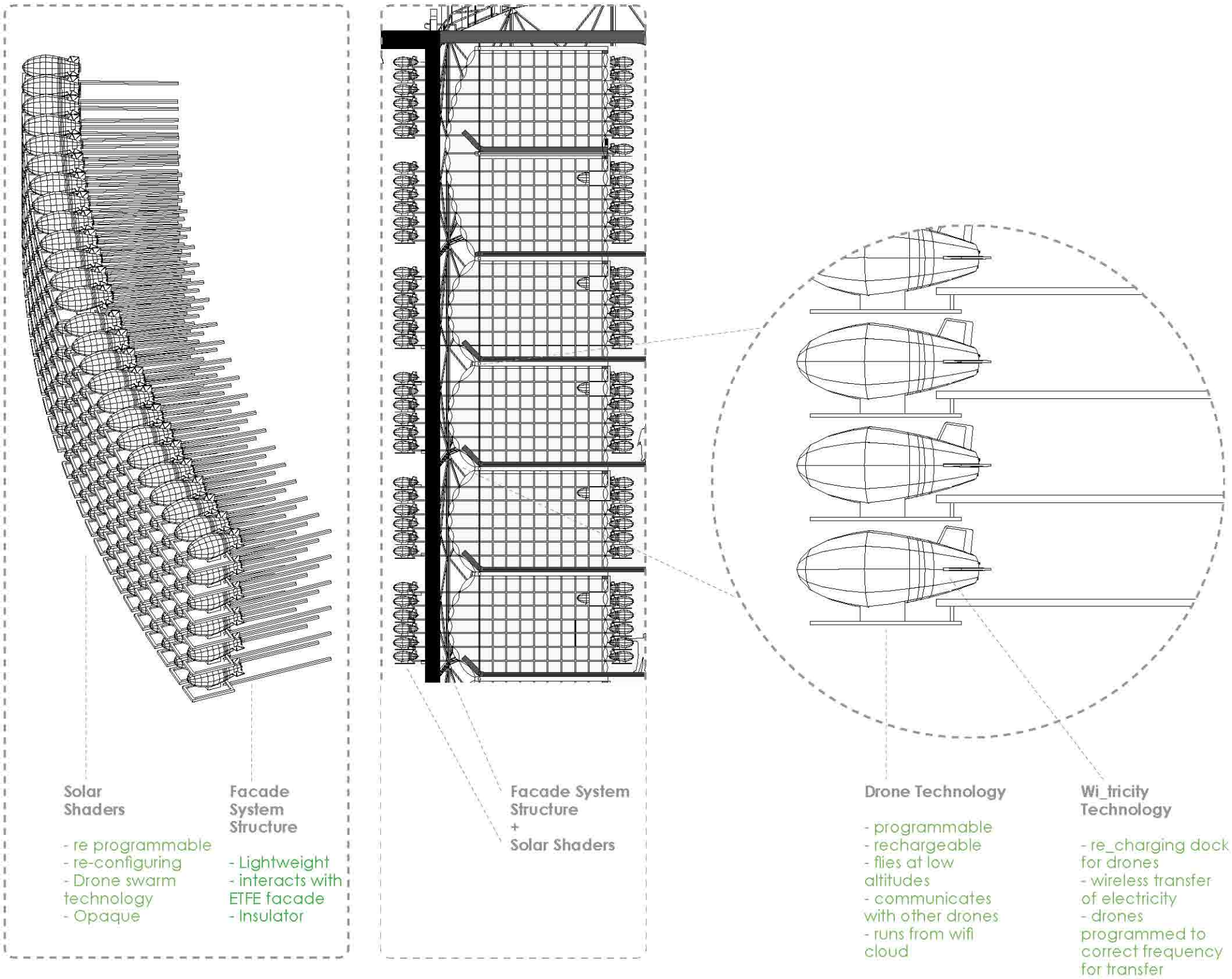


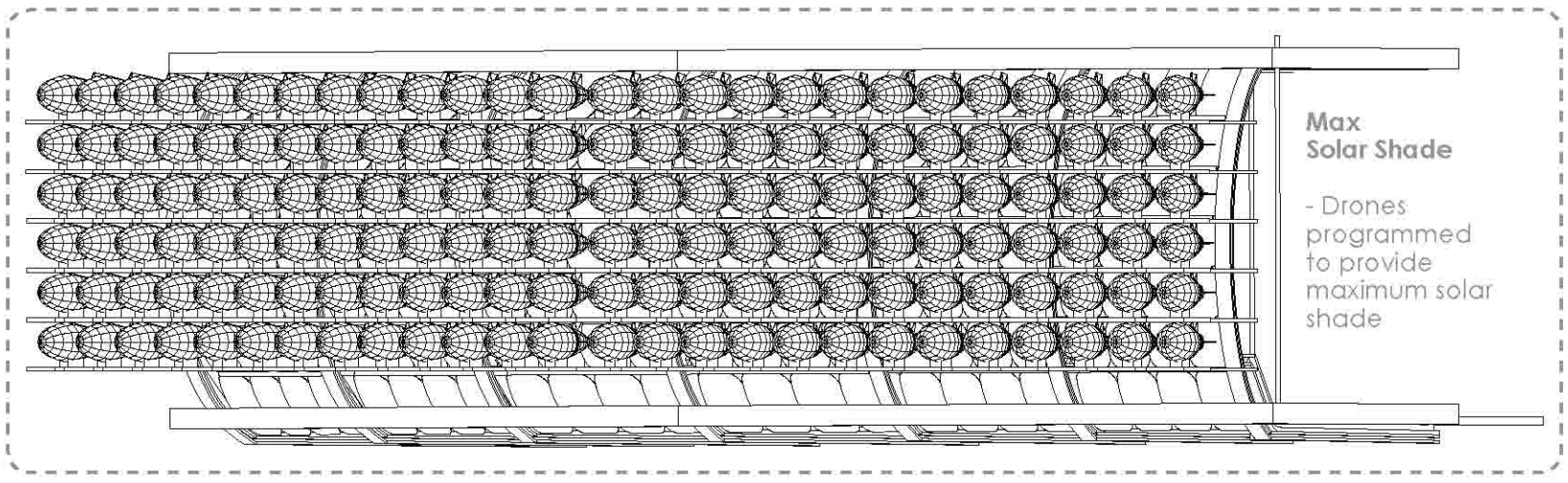




Solar shading testing and analysis:
massing of building will cause internal over shadowing in the atrium, therefore creating a desirable habitat for the Electric eels.

A combination of natural and artificial lighting strategies will be utilised throughout the building

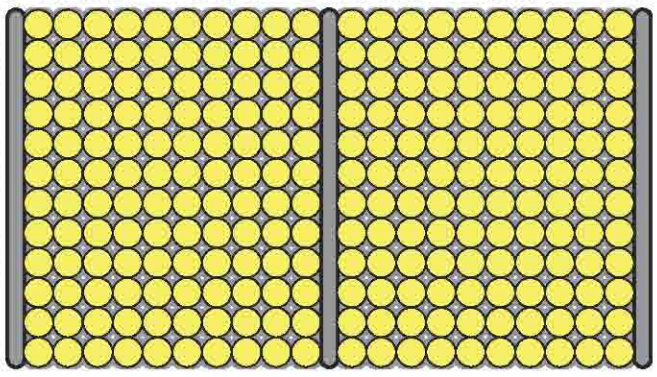




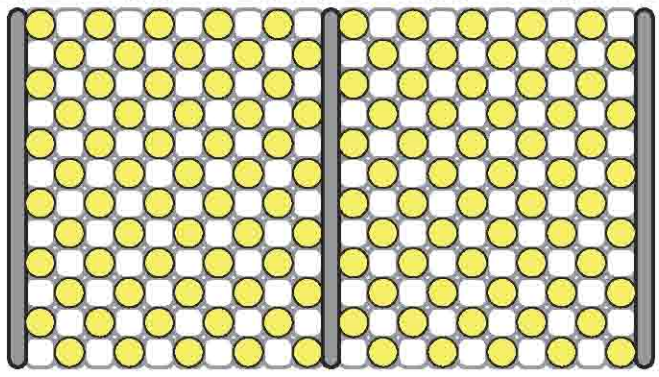
3.4[1]__LIGHT

Solar Shading Strategy

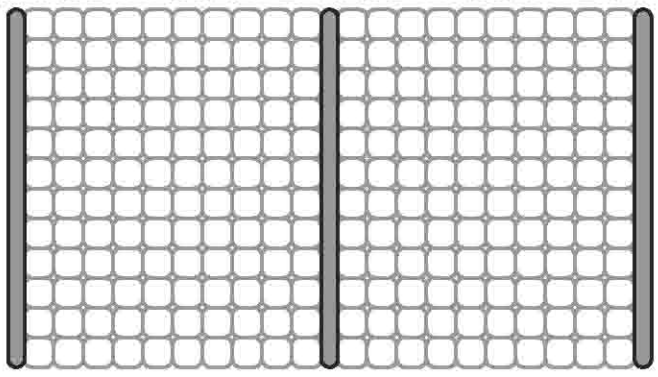
The higher the density of drones docked on a facade, the lower the levels of solar penetration into the modules



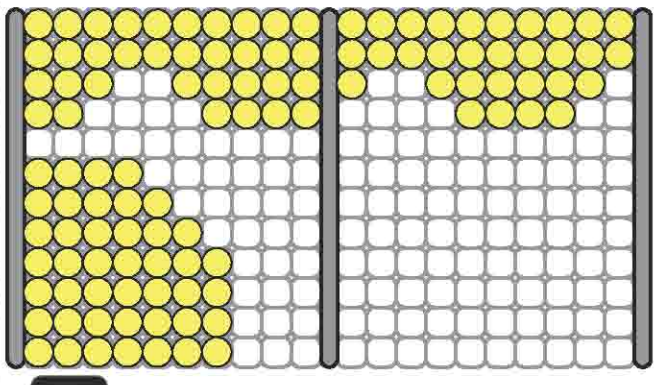
High Density Elevation
- Low solar penetration
- High privacy



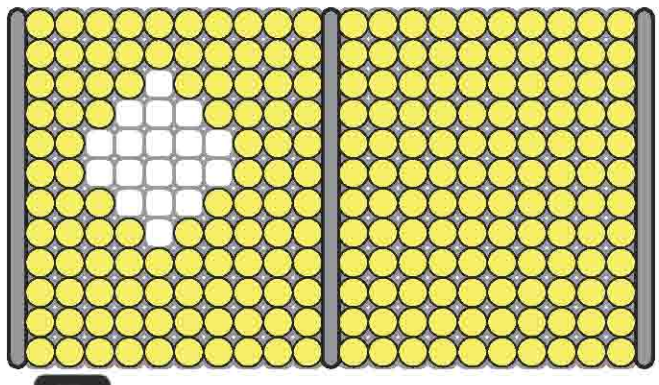
Medium Density Elevation
- Controlled solar penetration
- Semi privacy



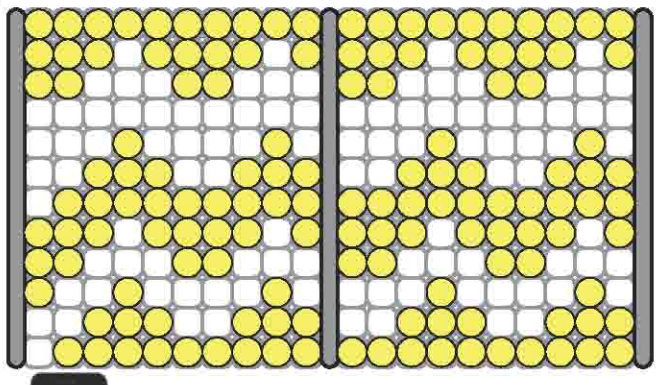
Low Density [None] Elevation
- Maximum solar penetration
- No privacy



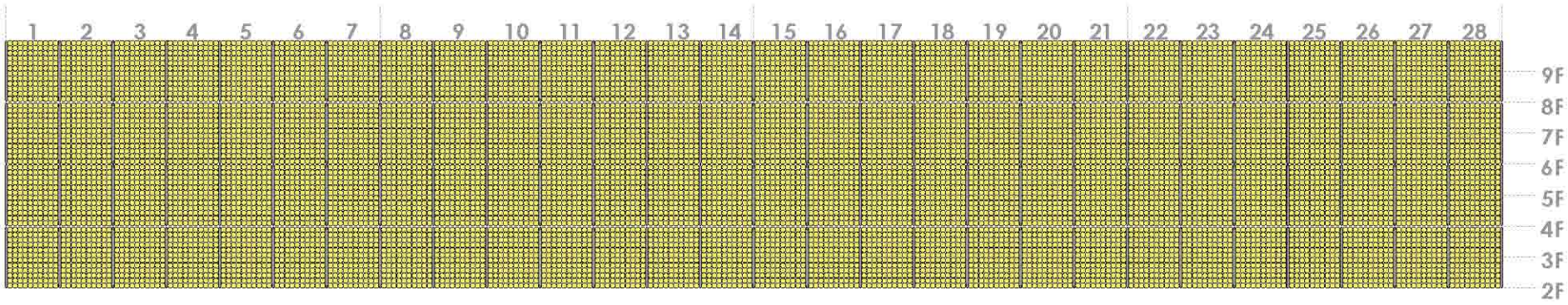
Custom Elevation
- High altitude solar penetration blocked
- High privacy in corner of room



Custom Elevation
- Controlled spot light
- High privacy

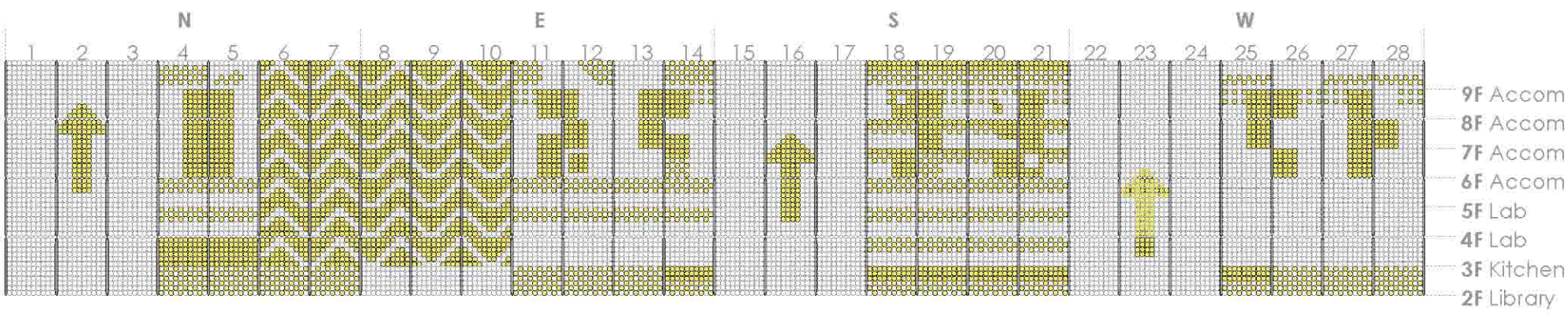


Custom Elevation
- Beautiful shadows created [maybe kinetic?]



Unfolded Exterior Elevation
- Gasometer = 28 faces
- 8 x floors are wrapped with re-configuring facade

Drones [external]
Per module [100% density] = 156
Whole facade [100% density] = 17,472



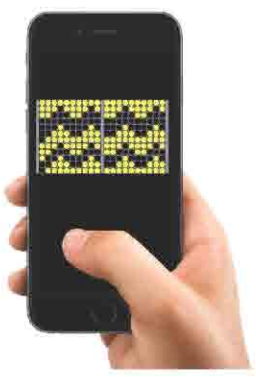
Unfolded North Elevation
- no solar shade required
- accommodation semi private
- canning plant does not require light - animated core

Unfolded East Elevation
- minimal solar shade required
- accommodation semi private
- Beautiful shadows created on terrace [in morning]

Unfolded South Elevation
- 21st June [summer solstice]
- Heavy high altitude [60* penetration] solar shade habit space
- huge bands of light penetrate

Unfolded West Elevation
- minimal solar shade required
- accommodation semi private
- labs have beautiful views across Thames and London

Unfolded Summer Elevation
- 21st June [summer solstice]

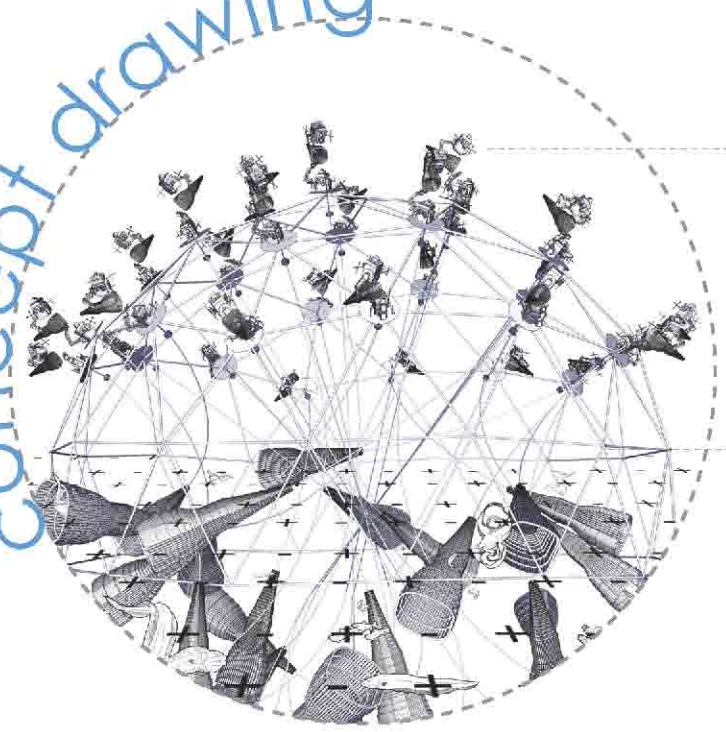


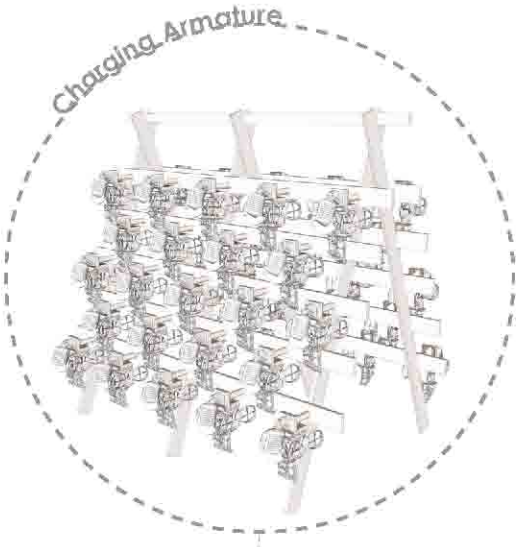
Drone density is controlled by the inhabitant using a smart phone app, allowing them to tailor their environment to their particular needs

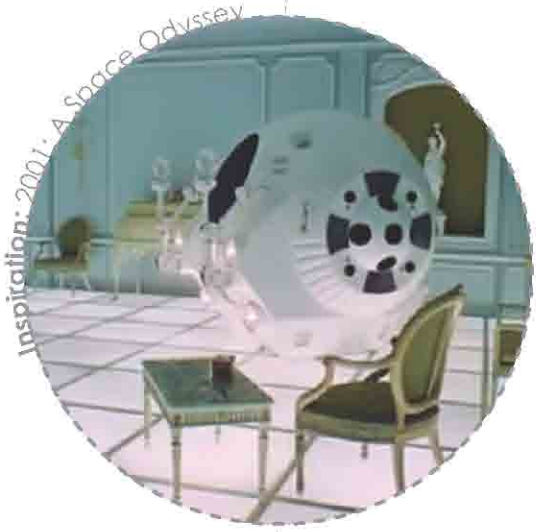
Total number of docks on external skin = 17,472
Total number of docks on Internal skin = 8,736

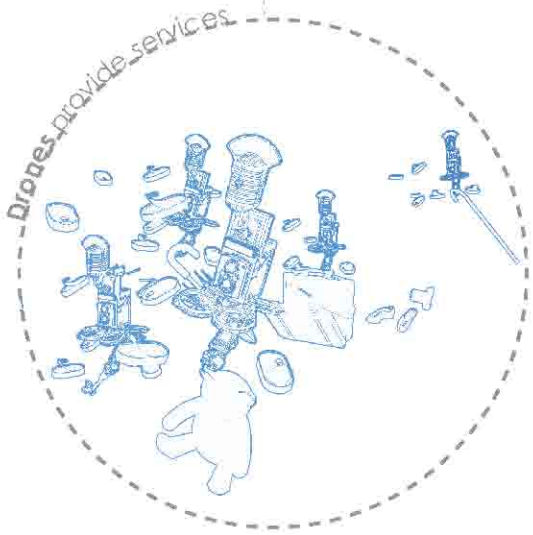
Total number of drones: 26,208

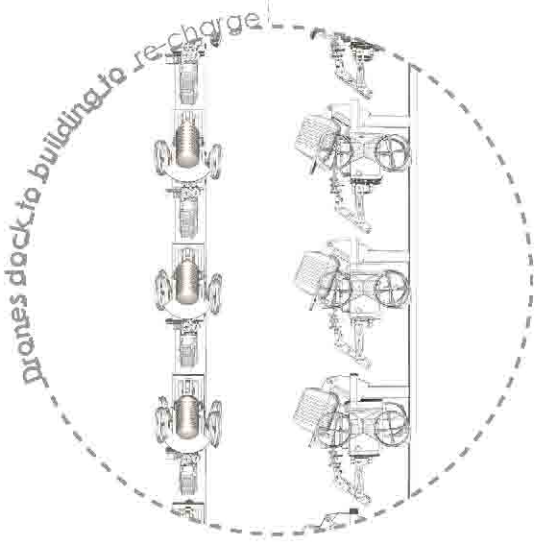
concept drawing



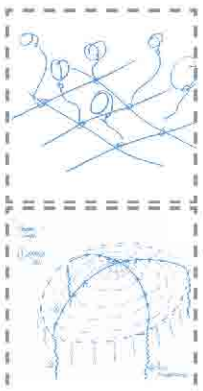








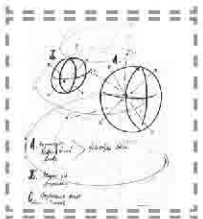

Existing drones

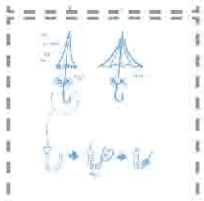

Wi_tricity technology

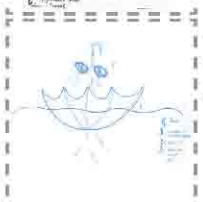
R.C precision flight

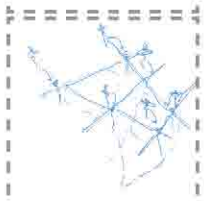
Charging Armature

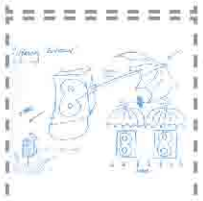

Swarm Technology


Controlled solar shade


Changeable end effector


App controlled solar shade


Charging Network


Drones Solar shading

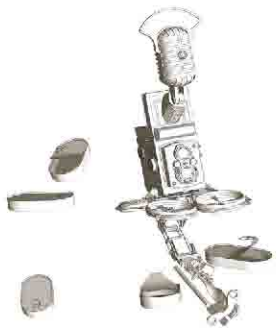
Docked
charging on the gasometer armature using Wi_tricity technology

Wifi Cloud
Drones are controlled through a local wifi network

Hover Technology
precision flight like that of RC helicopters and off the shelf app drones

Interface
constructed from vintage cameras and microphones to provide a nostalgic interface to humans

Swarm Technology
Drones communicate with each other in order to perform tasks on demand such as solar shading exercises



Service
drones controlled by smart phone app - perform services such as:
- delivering food in the Eel CAN_teen

Initial Ideas

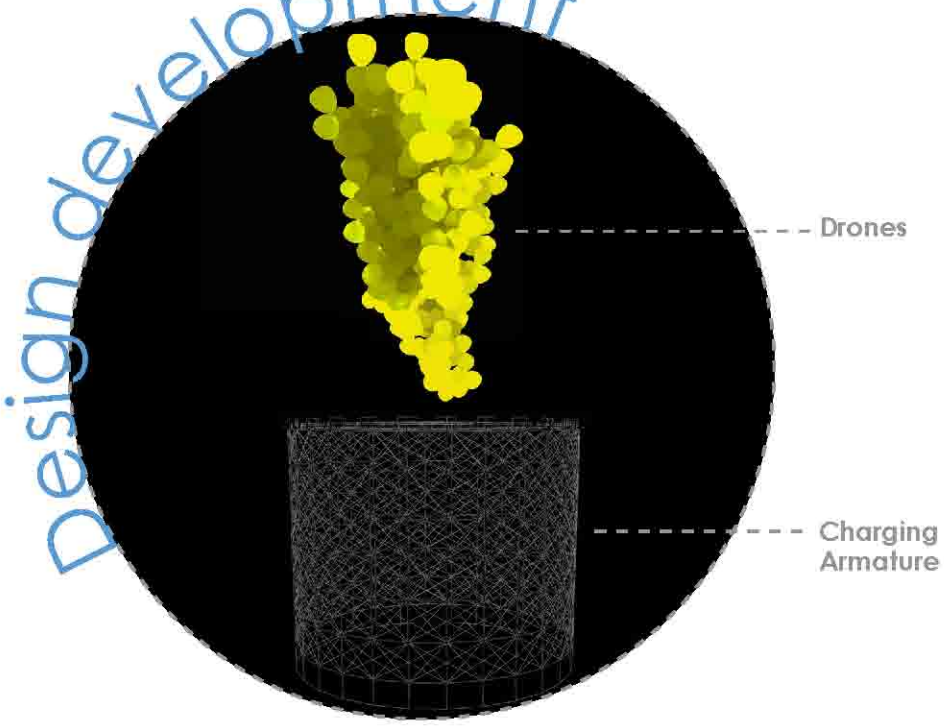
3.5_DRONES

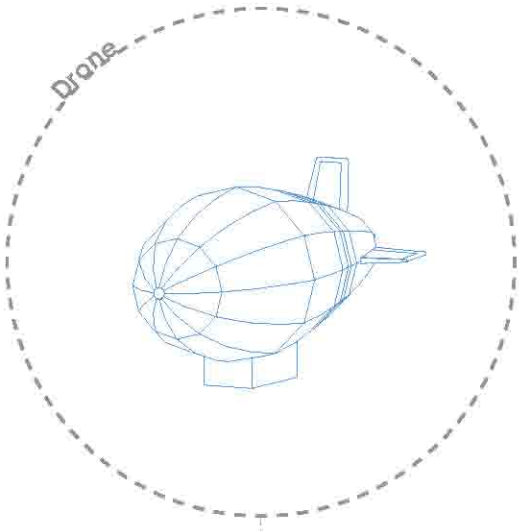
Drones

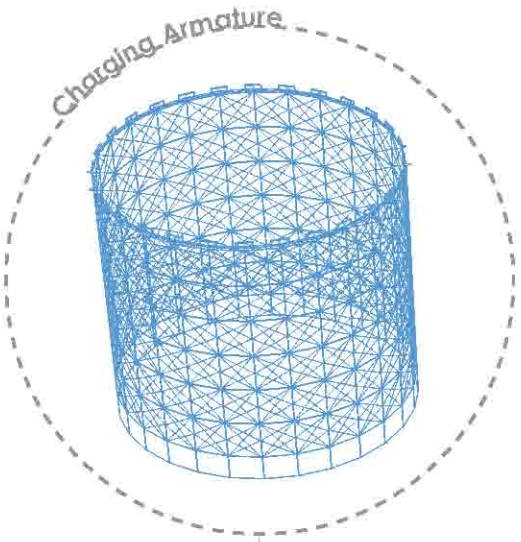
Design and conception of the service drones

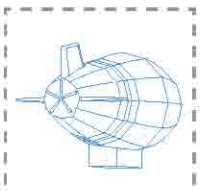
"Olivetti logos – one of the things I love about this object is its ambition – it says "I am the future! And it looks good. Despite being a device for performing operations that most people would struggle to get excited by, it has a sense of joyfulness to it. It's almost performative or theatrical."

Design development

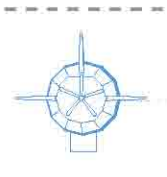




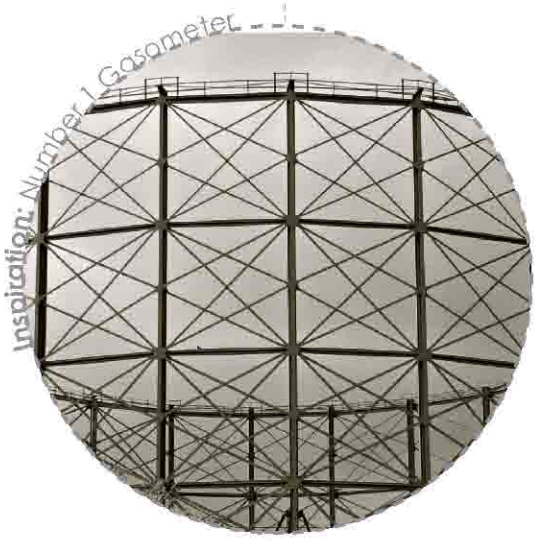


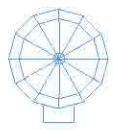


Load Capacity: Drone is capable of carrying small items such as cans of eels

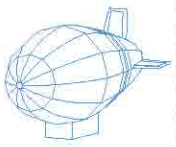


R.C precision flight controlled by smart phone apps, the drone uses multiple rotars to navigate around the building

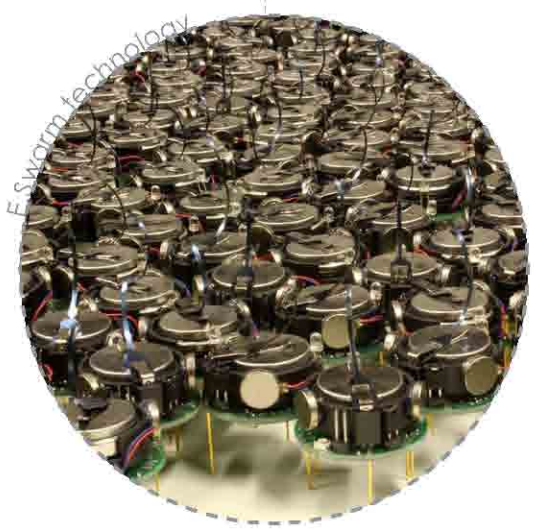


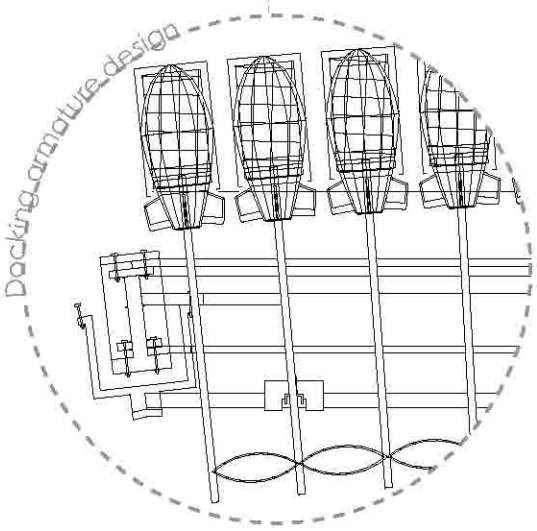


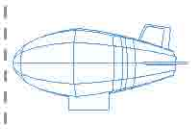
Material: Drones are made from light-weight, opaque, water proof polymer [yellow]



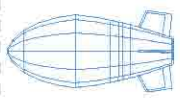
Balloon Design: WW2 barrage balloon inspired design, provides friendly interface to humans, making them feel comfortable



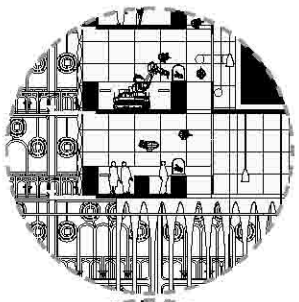




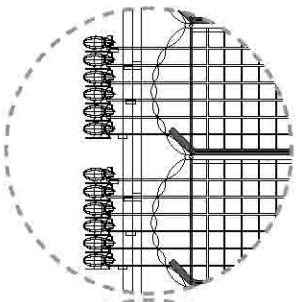
Opaque Skin: Drones act as solar shaders when docked on the facade of the building



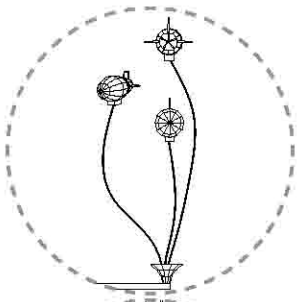
Wi_tricity dock wireless transfer of electricity charges the drone cell allowing it to function



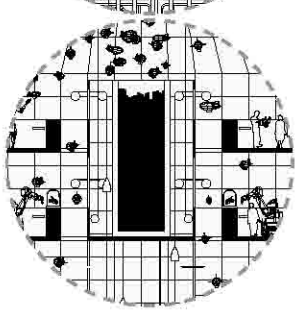
Canteen Service
Drones deliver and retrieve cans of eels to and from customers similar to existing amazon delivery drones



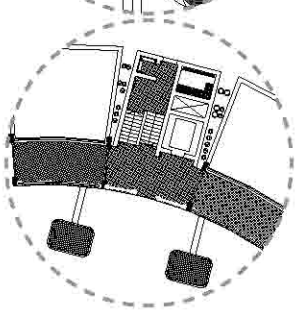
Solar Shade
Drones docked on the facade provide solar shade. Both their density and facade pattern can be re-configured



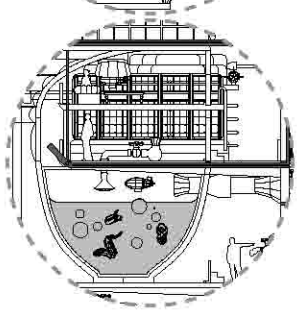
Lighting
Drones provide artificial lighting whilst docking/ re charging on the facade as well as the interior of the building



Transfering Stock
Drones transfer canned eels from the canning plant to the eel can tower



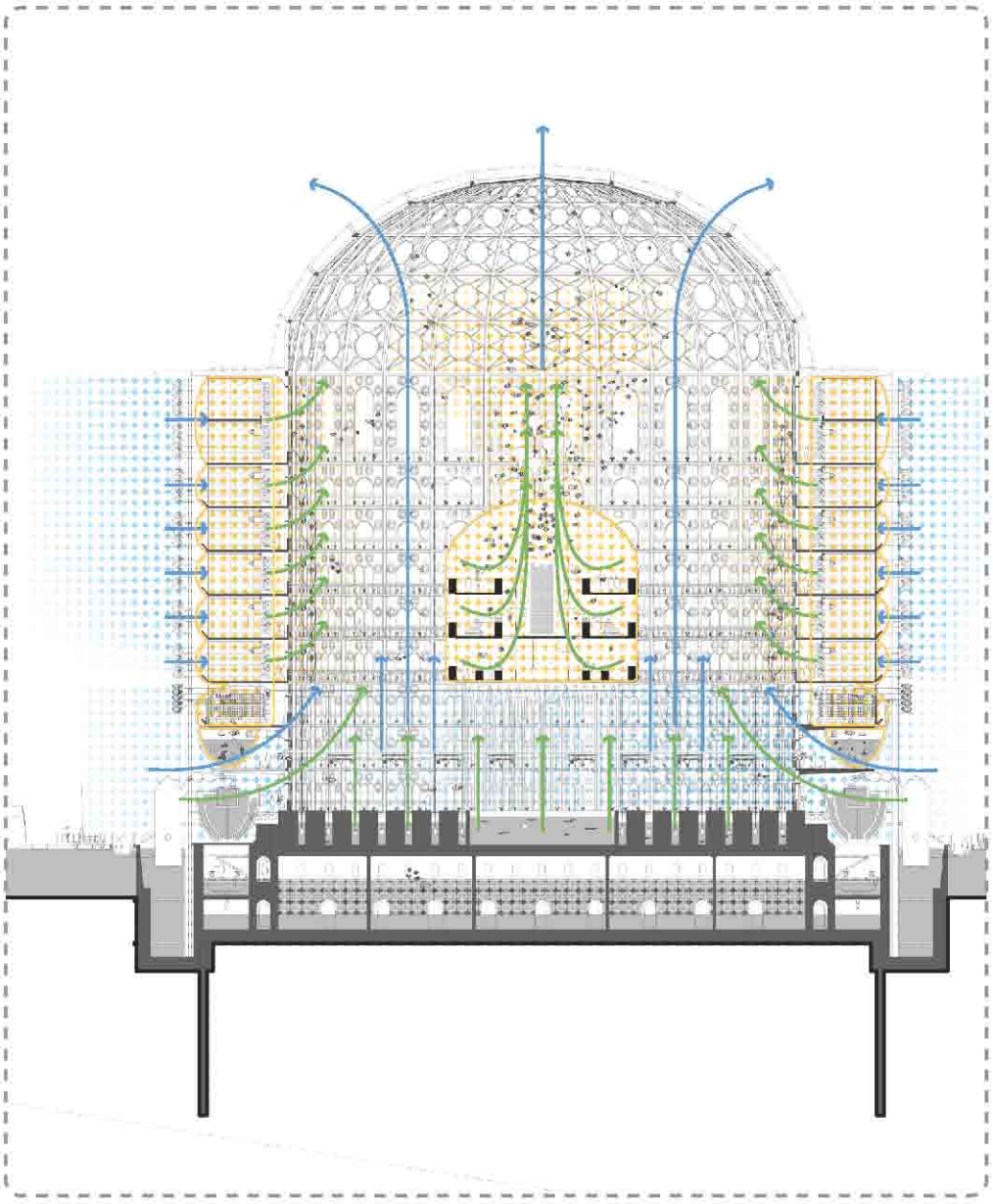
Installing Machinery
As the posthuman research focus shifts, the lab spaces will be re-configured meaning old equipment will be replaced. Drones will lift the machinery into place from barges on the Thames to specially designed platforms

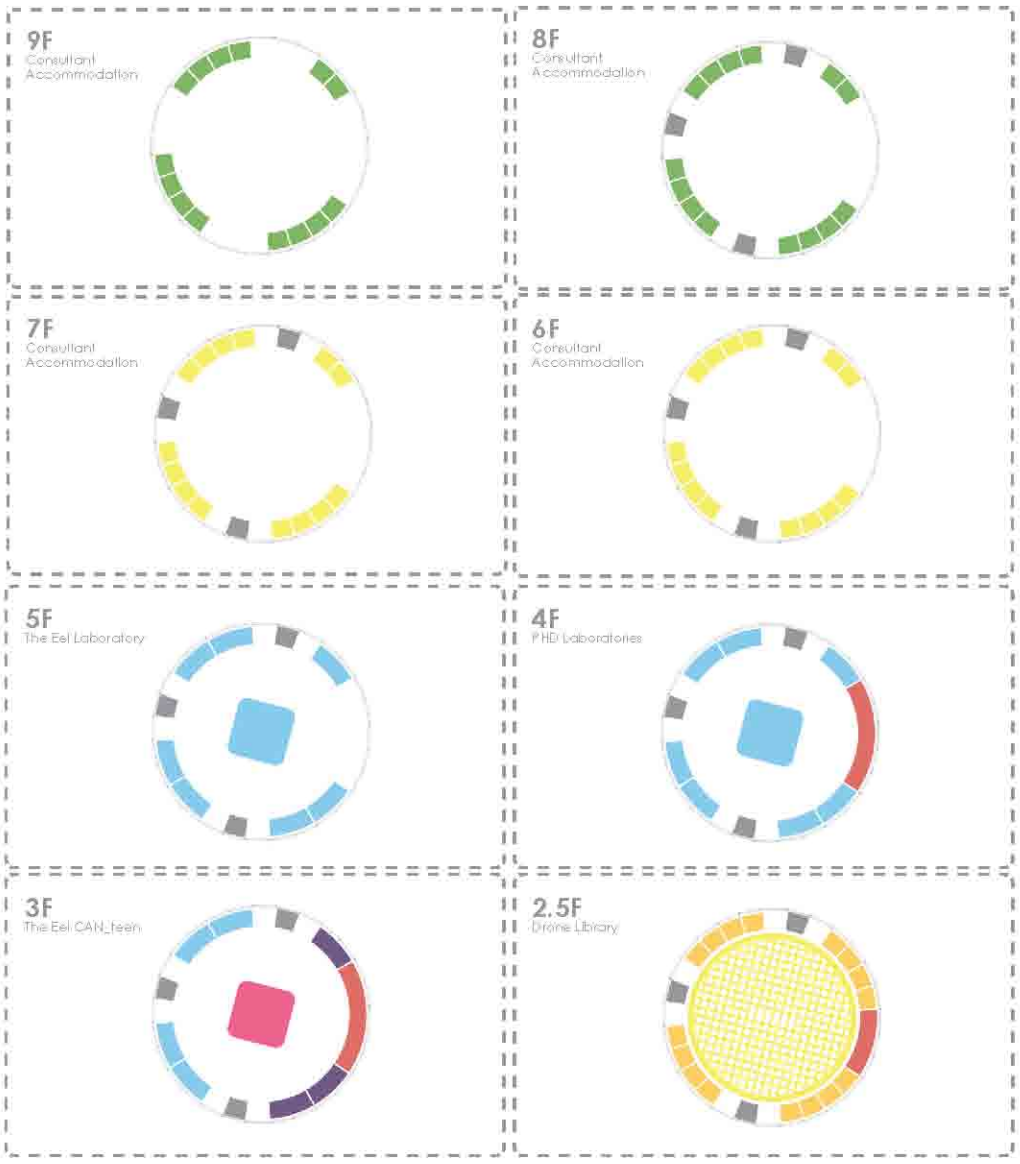


Eel Tank maintenance
Drones can enter inhospitable environments such as the eel tanks in order to monitor eel growth and perform feeding and cleaning tasks

Role of the Drone

Inspired by the WW2 barrage balloon air defence system that was deployed over Greenwich Peninsula throughout the war, the drones will perform a number of every day roles throughout the building





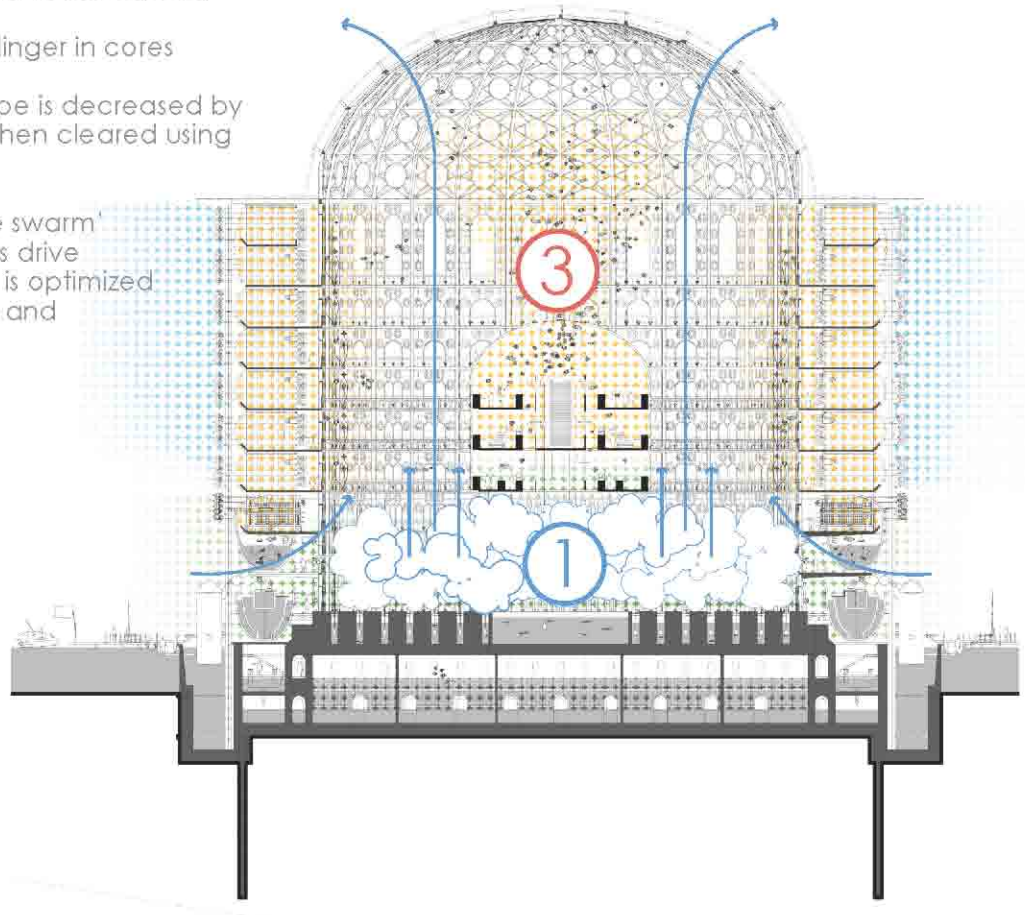
Ventilation Strategy

> Ambition:
- To naturally ventilate the atrium

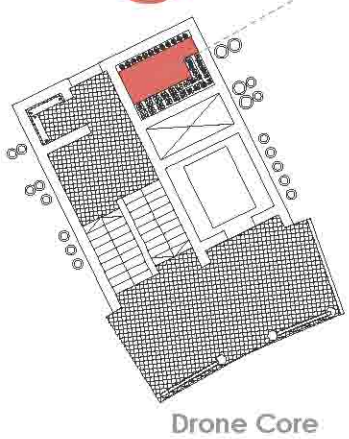
> Challenges:
- Must decrease humidity on the lower levels caused by open bodies of water
- Ensure humidity and odours to not linger in cores

> Strategy: Fogger Machine
- humidity on the Charged Landscape is decreased by creating an artificial cloud which is then cleared using destratification fans

> Strategy: Drone Driven Ventilation
- The service drones create a 'Drone swarm' and their collective movement helps drive air flow and ventilation. This method is optimized in the 'drone cores' ensuring odours and humidity do not build up and linger

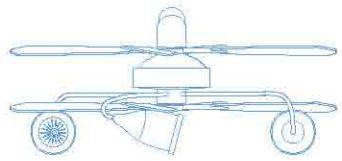


2 Drone access Shaft



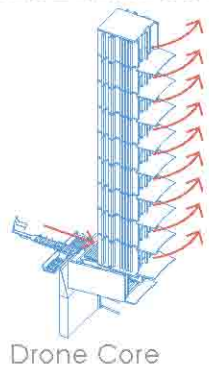
Drone Core
Drone swarm movement drives ventilation

1



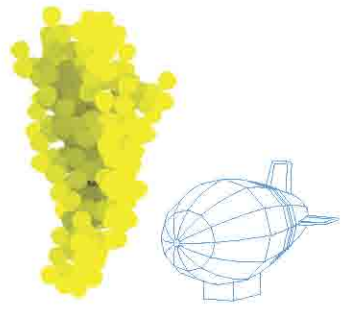
Fogger Machine

2



Drone Core

3

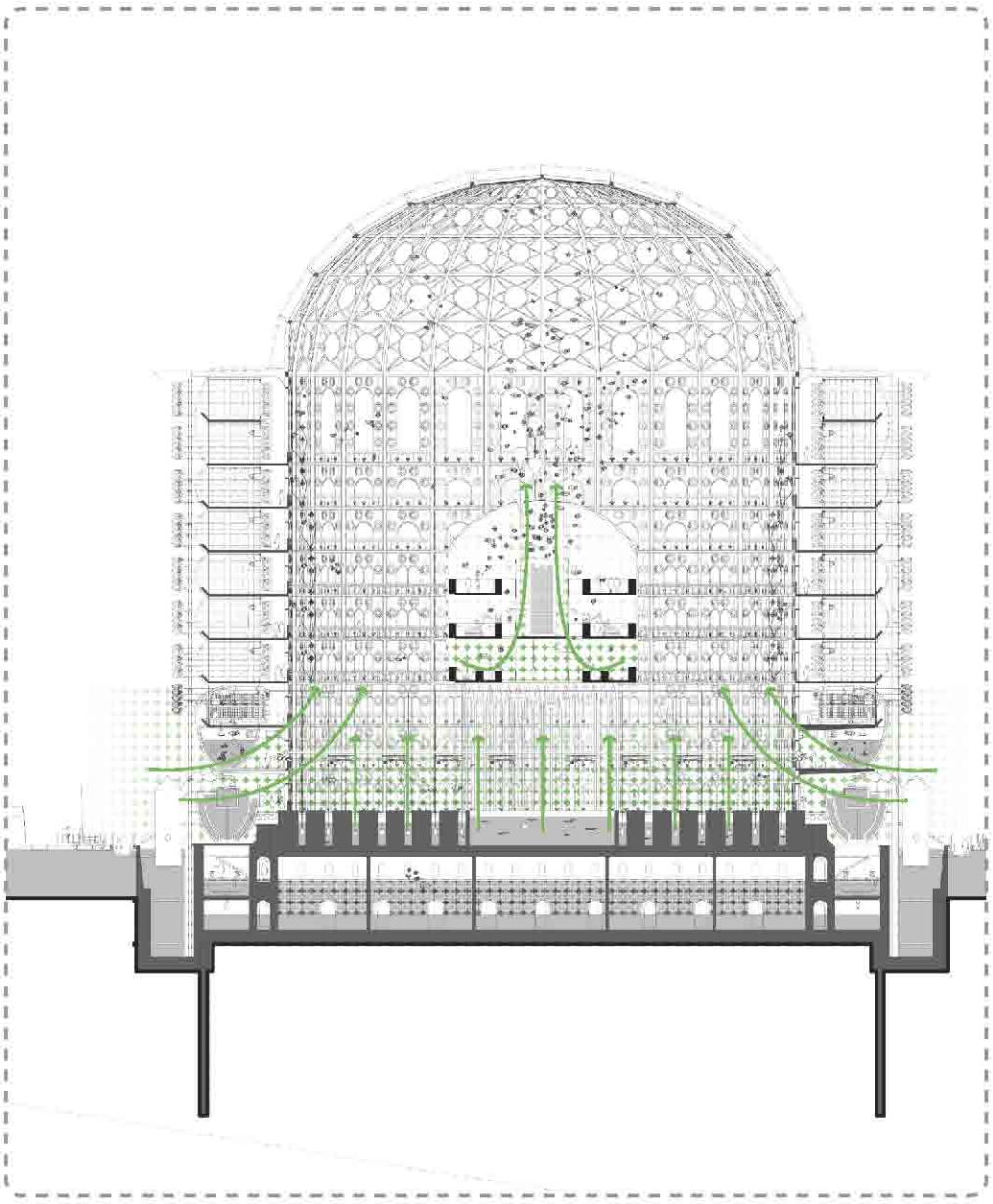


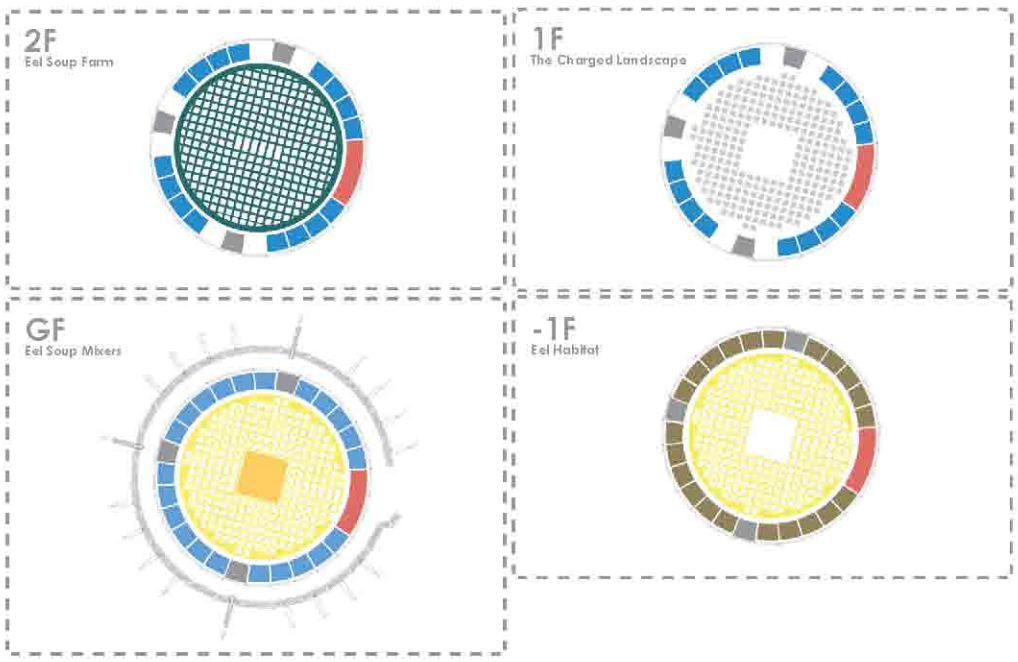
Drone swarm

3.6_AIR

Ventilation strategy

Natural stack ventilation will take place in the atrium





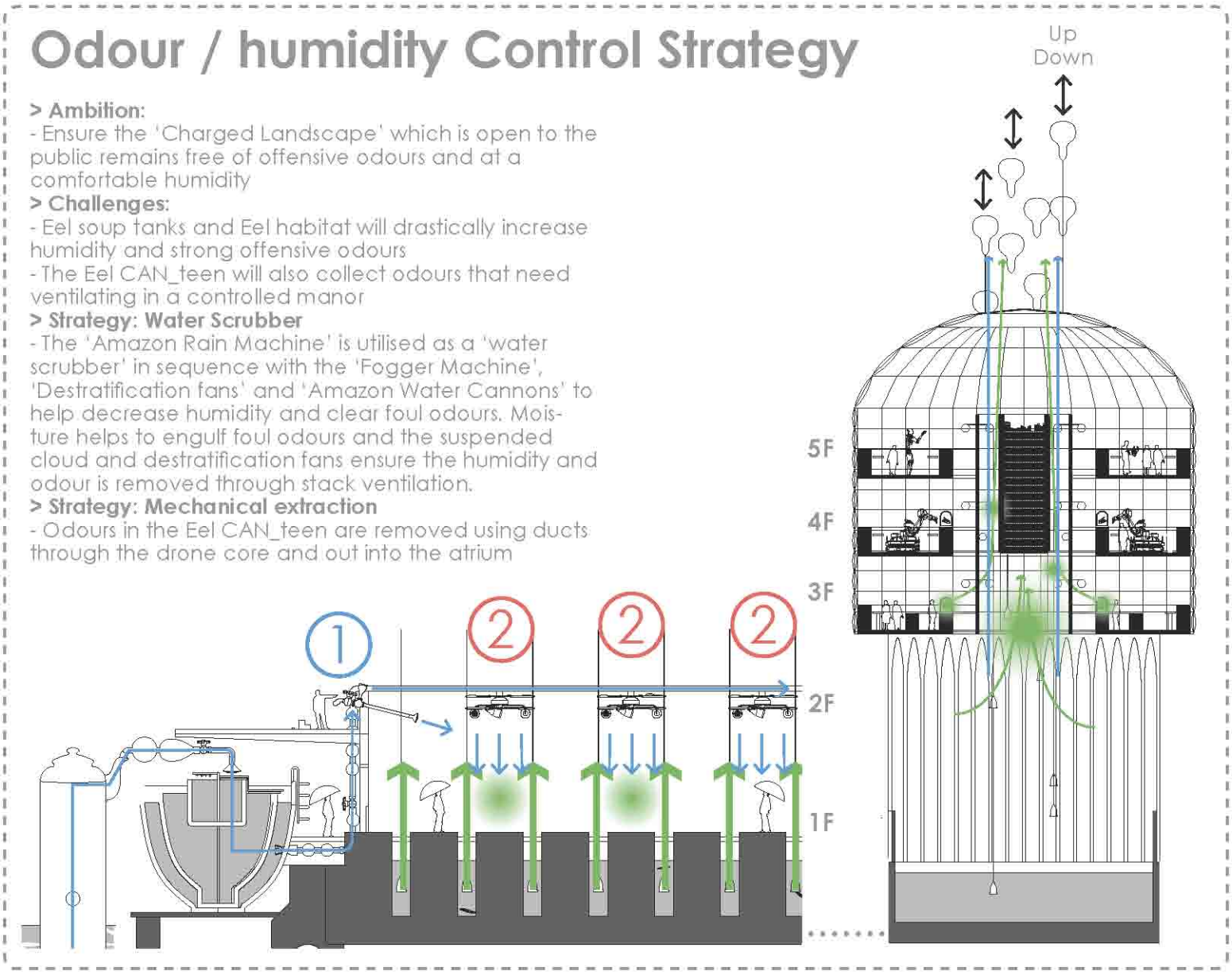
Odour / humidity Control Strategy

> Ambition:
- Ensure the 'Charged Landscape' which is open to the public remains free of offensive odours and at a comfortable humidity

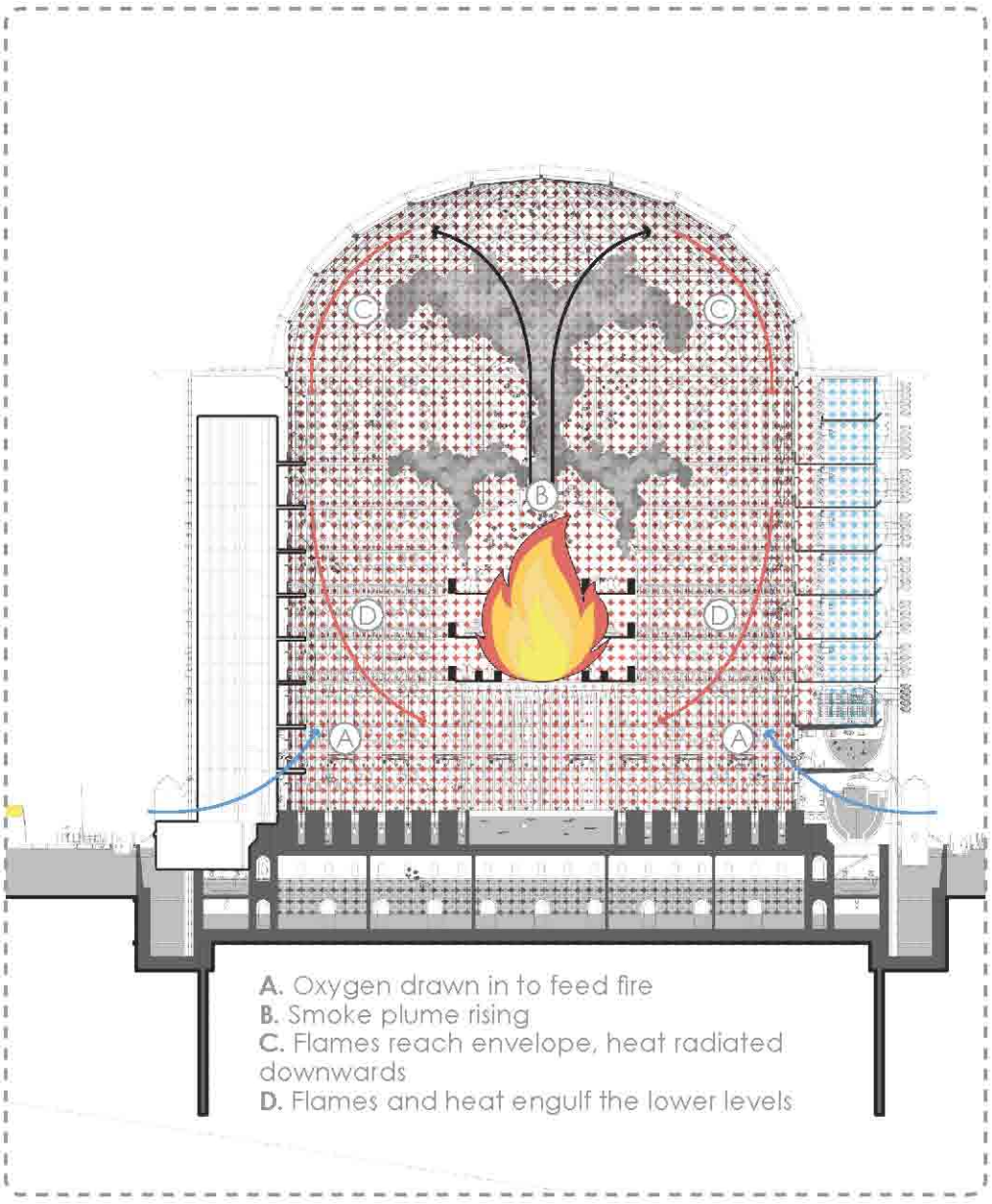
> Challenges:
- Eel soup tanks and Eel habitat will drastically increase humidity and strong offensive odours
- The Eel CAN_teen will also collect odours that need ventilating in a controlled manor

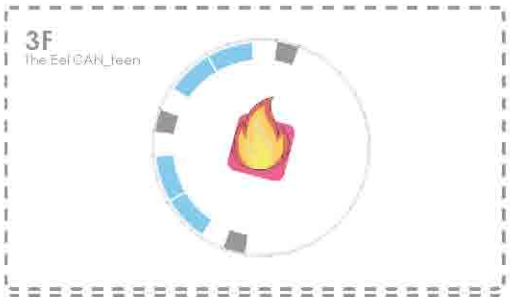
> Strategy: Water Scrubber
- The 'Amazon Rain Machine' is utilised as a 'water scrubber' in sequence with the 'Fogger Machine', 'Destratification fans' and 'Amazon Water Cannons' to help decrease humidity and clear foul odours. Moisture helps to engulf foul odours and the suspended cloud and destratification fans ensure the humidity and odour is removed through stack ventilation.

> Strategy: Mechanical extraction
- Odours in the Eel CAN_teen are removed using ducts through the drone core and out into the atrium

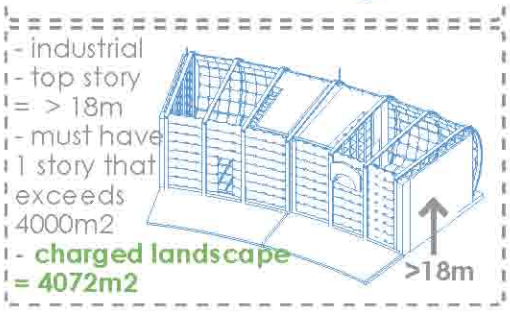


The 'Amazon Rain Machine' is utilised as a 'water scrubber' in sequence with the 'Fogger Machine', 'Destratisfication fans' and 'Amazon Water Cannons' to help decrease humidity and clear foul odours





Section B2
Pg 61



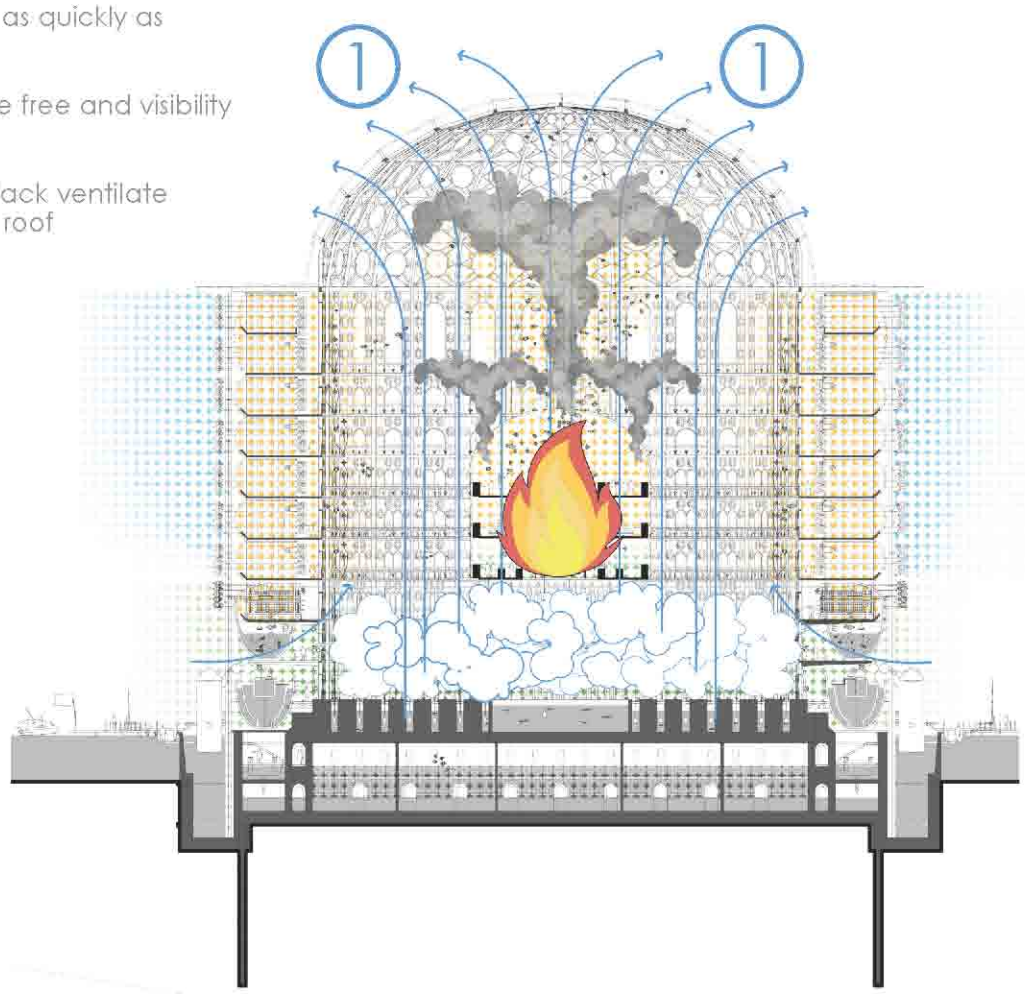
Section B3
Table 12

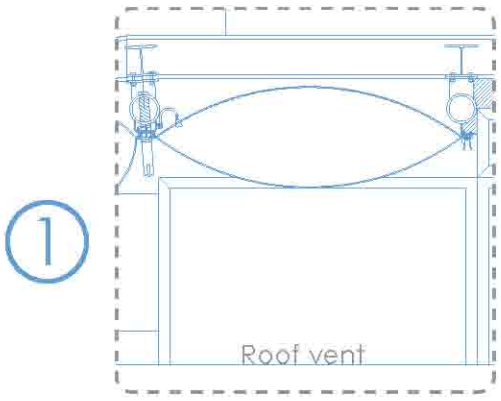
Smoke Dissipation

> Ambition:
- To dissipate smoke from the atrium as quickly as possible

> Challenges:
- Ensure escape routes remain smoke free and visibility high

> Strategy: Stack Ventilation
- The atrium will fill with smoke and stack ventilate through openings / vents in the ETFE roof



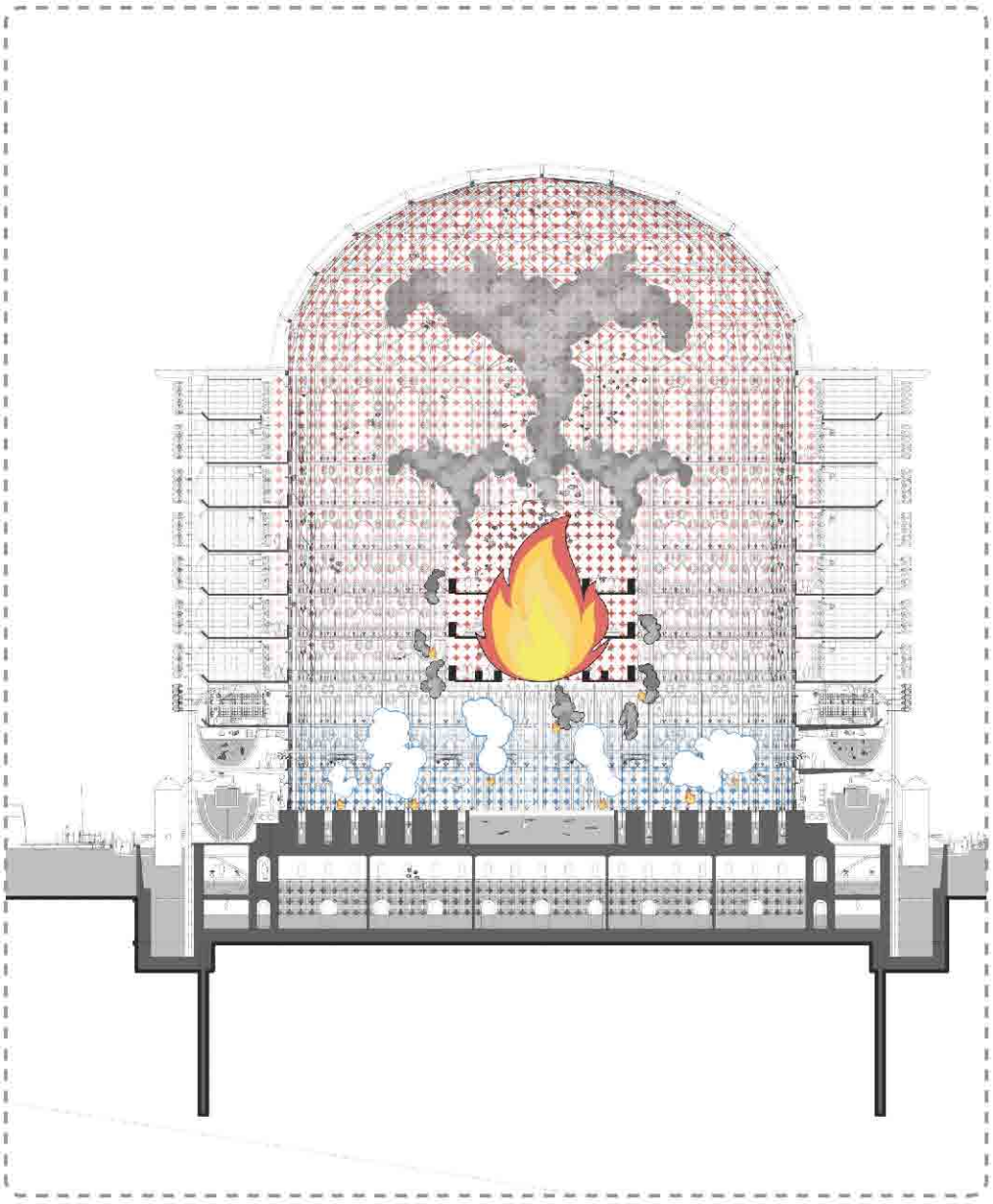


3.7 __FIRE

Fire Strategy

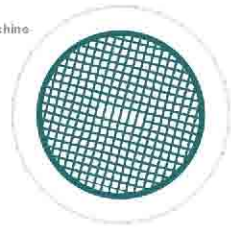
In the event of a fire, smoke will fill the atrium and be dissipated utilising the natural stack ventilation system through vents in the ETFE roof

All fire strategy measures comply with Section B_Volume 2: Fire safety_ Buildings other than dwelling houses



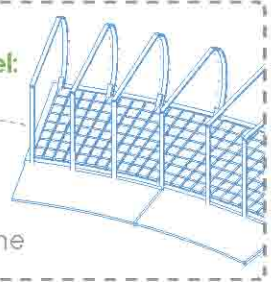
3F
The Eel CAN_teen

2F
Amazon Rain Machine



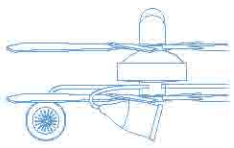
1F
The Charged Landscape

Material
Fire proofing steel:
to prevent collapse of structure during fire fight
- 60 mins burn time



Section 7
Pg 69

Sprinkler System
sprinkler systems can reduce the risk to life and significantly reduce the damage caused by fire



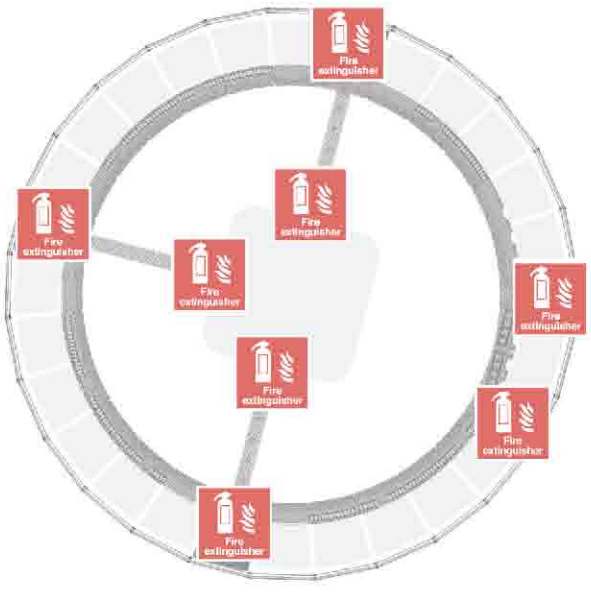
BS 9251
Pg 10

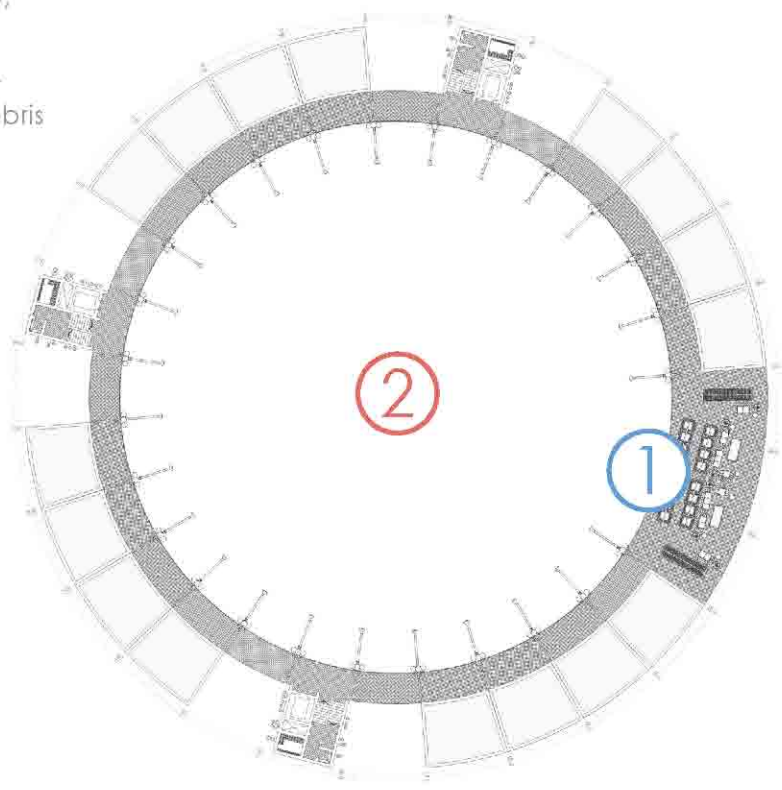
Extinguishing Strategy

> Ambition:
- To help mitigate the spread of fire throughout the facility and in public spaces

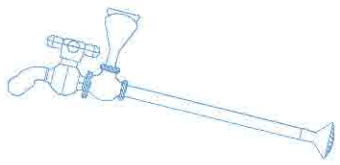
> Challenges:
- Any fire in the facility will cause falling debris through the atrium and onto the charged landscape below, increasing risk to members of the public

> Strategy: Sprinkler systems
- The 'Amazon rain machine' is utilised as a sprinkler system to protect the public space from flaming debris
- Fire extinguishers are also located throughout the facility



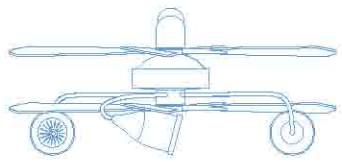


1



Water Cannon

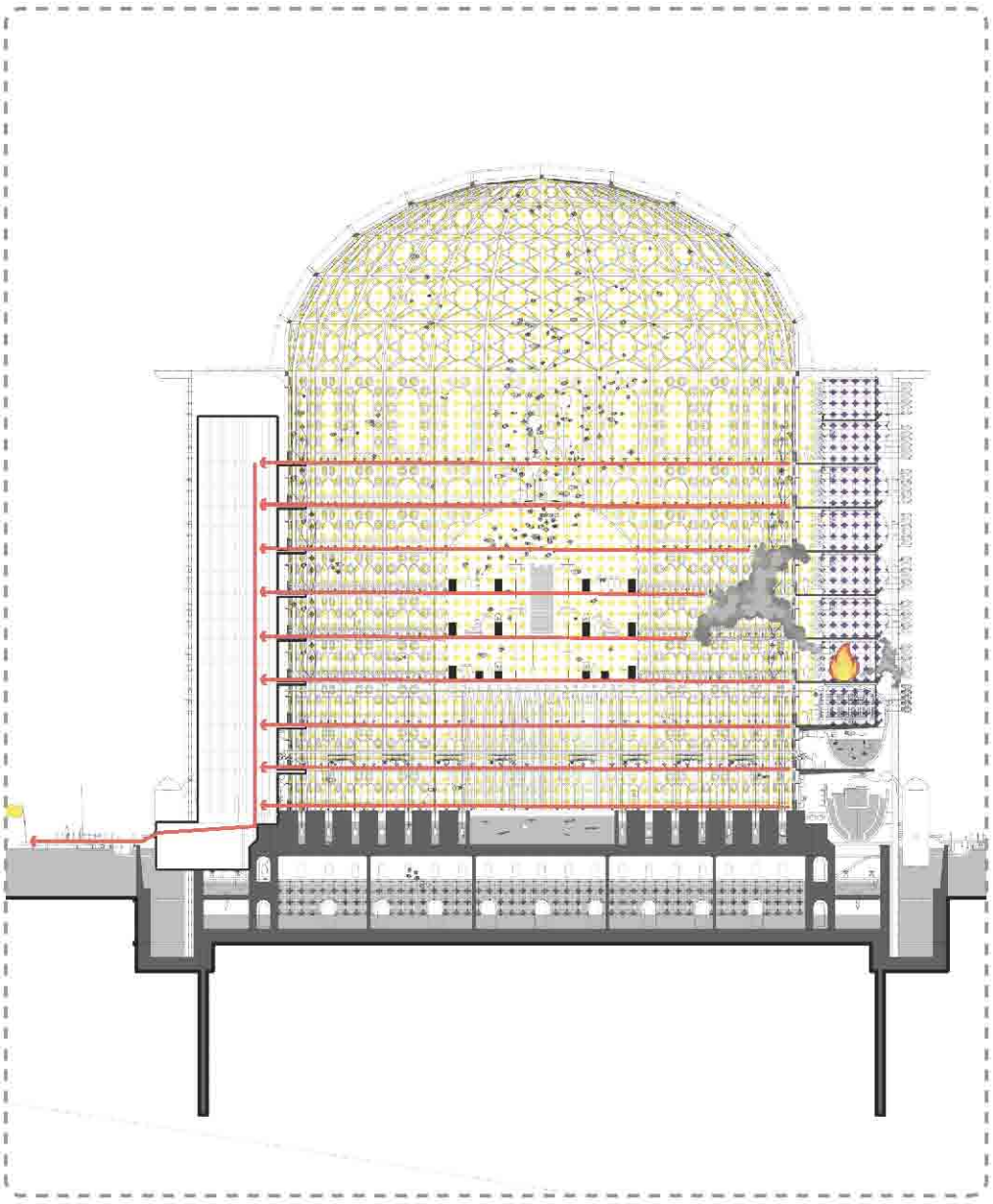
2

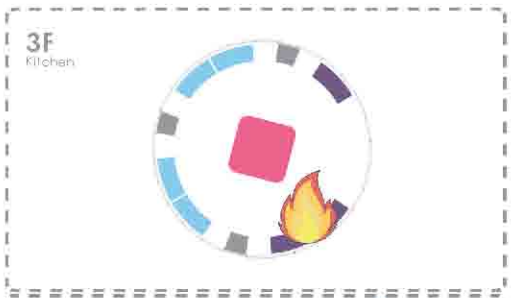


Amazon Rain Machine

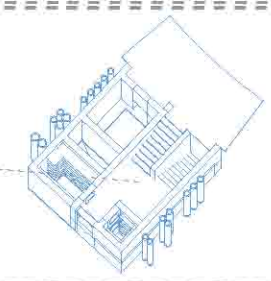
Fire Extinguisher

The 'Amazon rain machine' is utilised as a sprinkler system to protect the public from flaming debris and to reduce damage to the building [and research] caused by fire





Core
Maximum amount of people on one story
= 130
Escape stair
= min 1200mm
= 1400mm



Section B1
Table 8

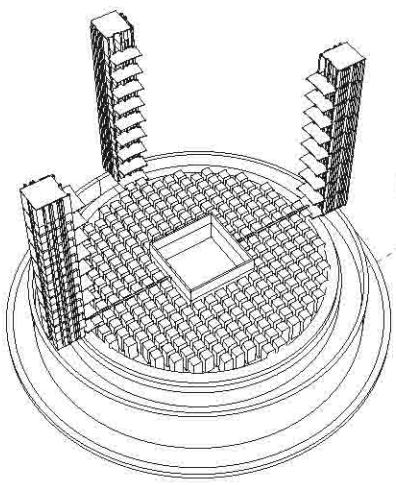
Means of Escape

> Ambition:
- Provide simple and legible escape routes for residents to leave the building safely

> Challenges:
- In the event of fire, visibility will be lowered by smoke filling the atrium
- Resident's must leave the building as quickly as possible

> Strategy: Emergency Drone Lighting
- Drones will dock on the interior walkways and perform a series of emergency evacuation lighting procedures. The most efficient and safe route out of the building, [avoiding dangerous routes] can be calculated, and a corresponding pathfinding series of lights within the drones will illuminate, guiding the resident to the nearest fire core

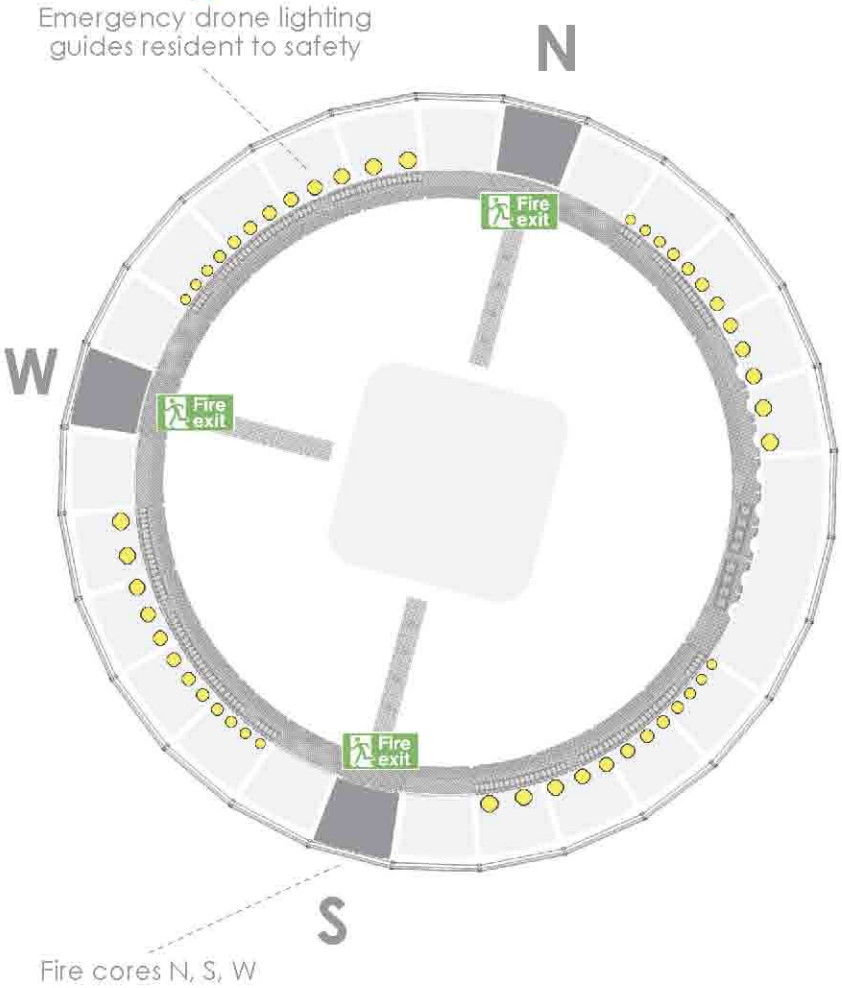
> Strategy: Fire Cores
Fire cores span the length of the building in a predictable and legible arrangement



2

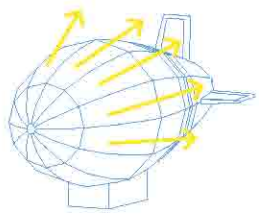
1

Emergency drone lighting guides resident to safety



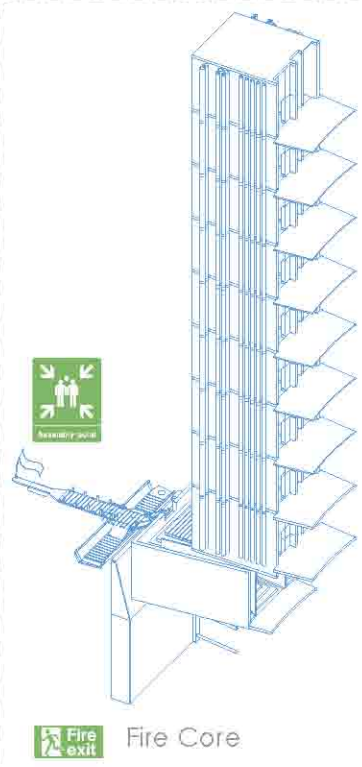
Fire cores N, S, W

1



Drone Light

2



Fire Core

3.7 [1] __FIRE

Fire Strategy

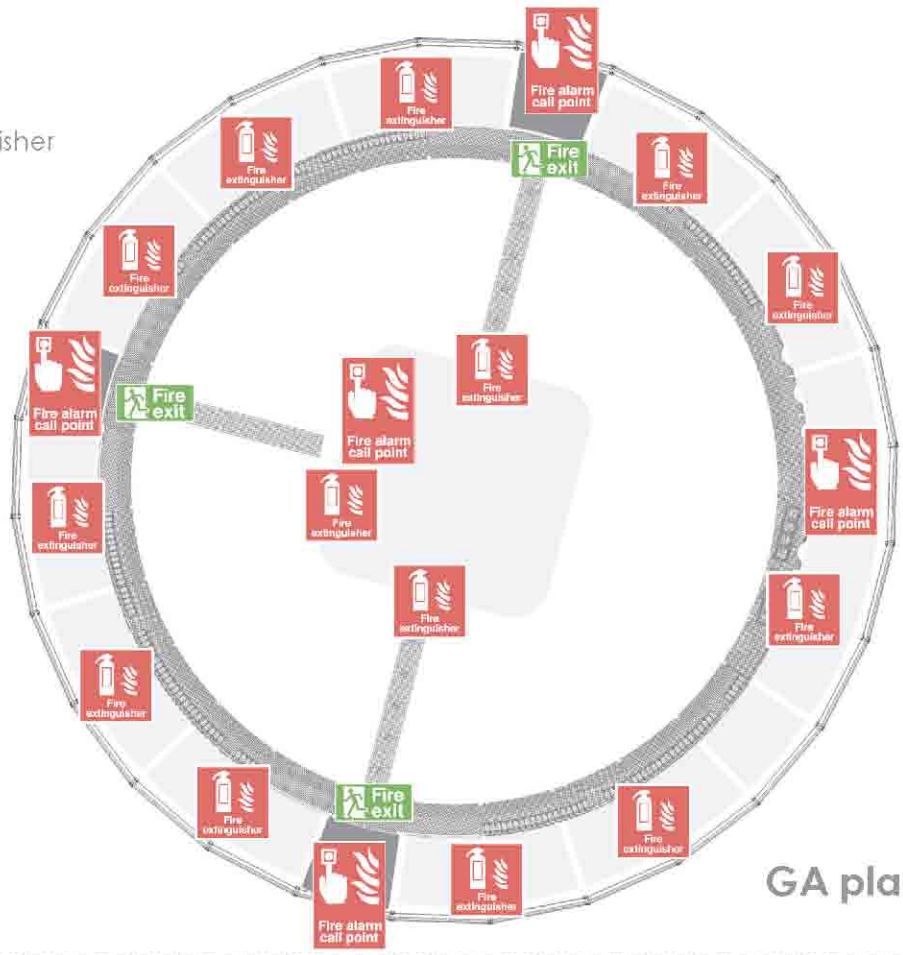
Drones light up to direct residents along safe routes out of the building. Fire cores are located to the north, south and west of each floor and lead directly out of the building to assembly points

Industrial Standards

Fire Exit

Fire Extinguisher

Call Point



GA plan

Fire action
If you discover or suspect a fire

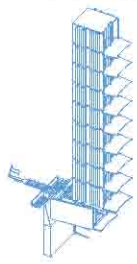
1. Sound the alarm by operating the nearest fire alarm call point
2. Dial _____ to call the fire brigade
3. Leave the building by the nearest available exit
4. Report to person in charge of assembly point at _____
5. Do not stop to collect personal belongings. Do not use lifts

Fire Hydrants should be placed within 90m of each fire main / fire core

= <90m

Section B5
Section 15

Fire Fighting Personnel number of fire cores building
> 900m2 story
> 18m
= 2
=3 fire cores

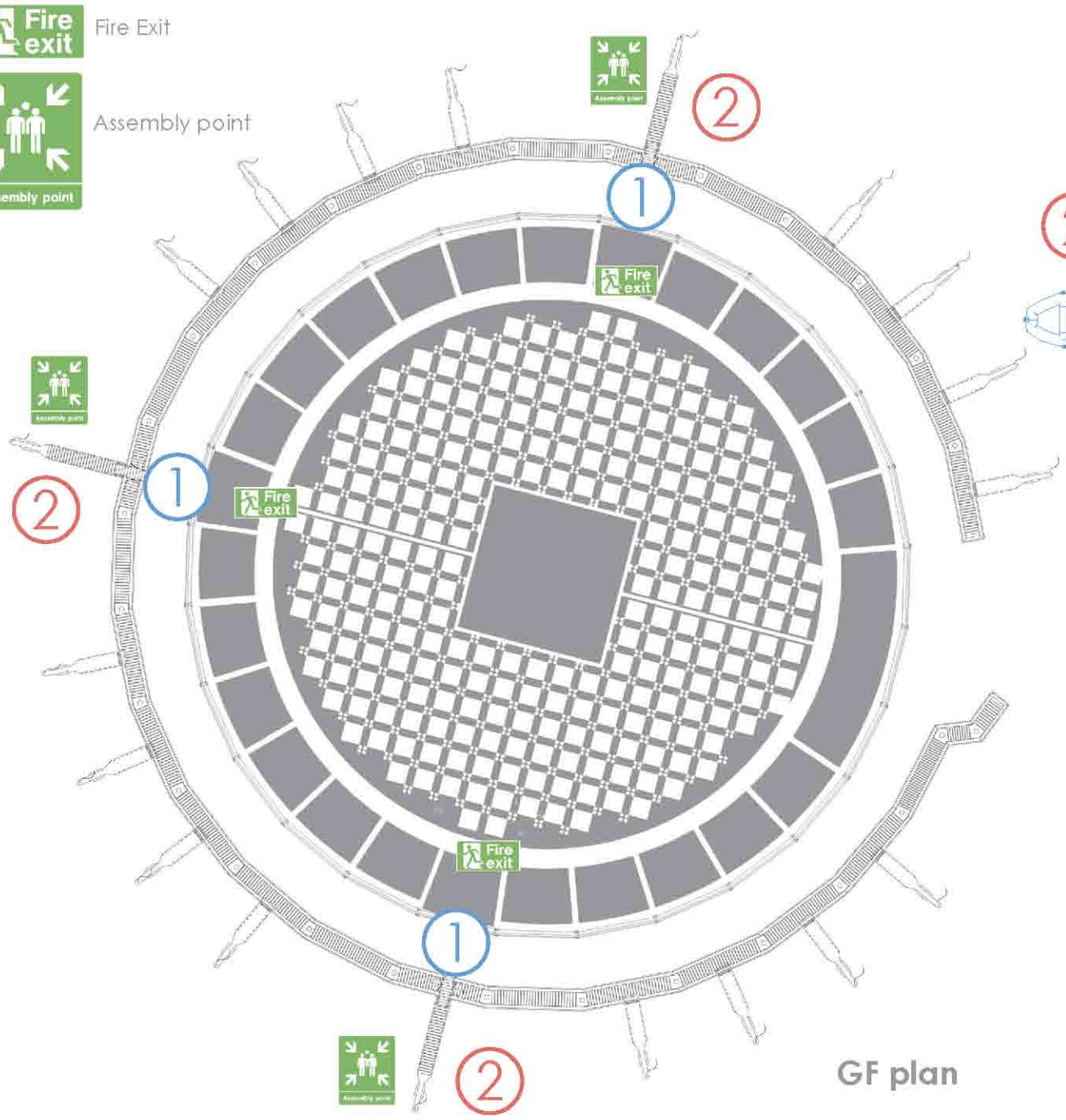


Section B5
Section 17

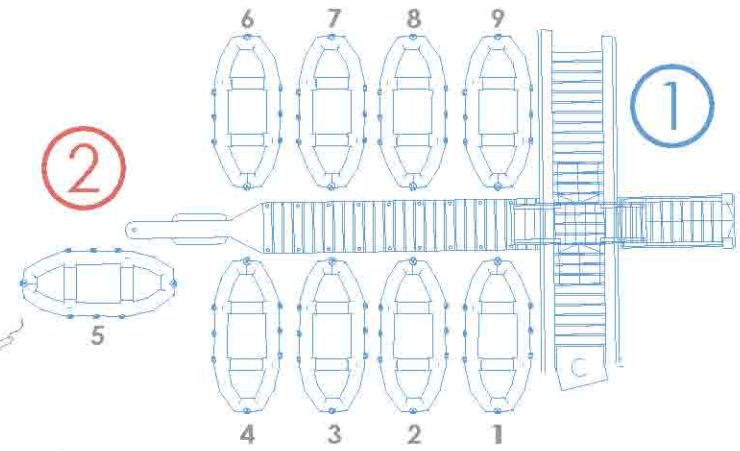
Assembly points

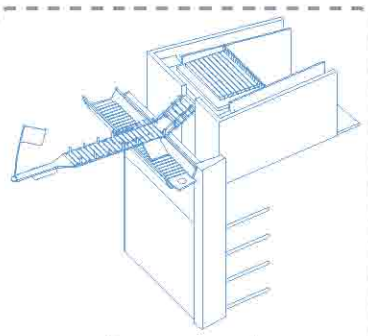
Fire Exit

Assembly point

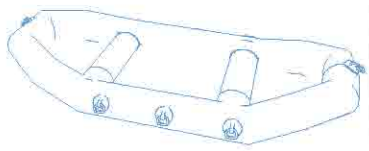


GF plan



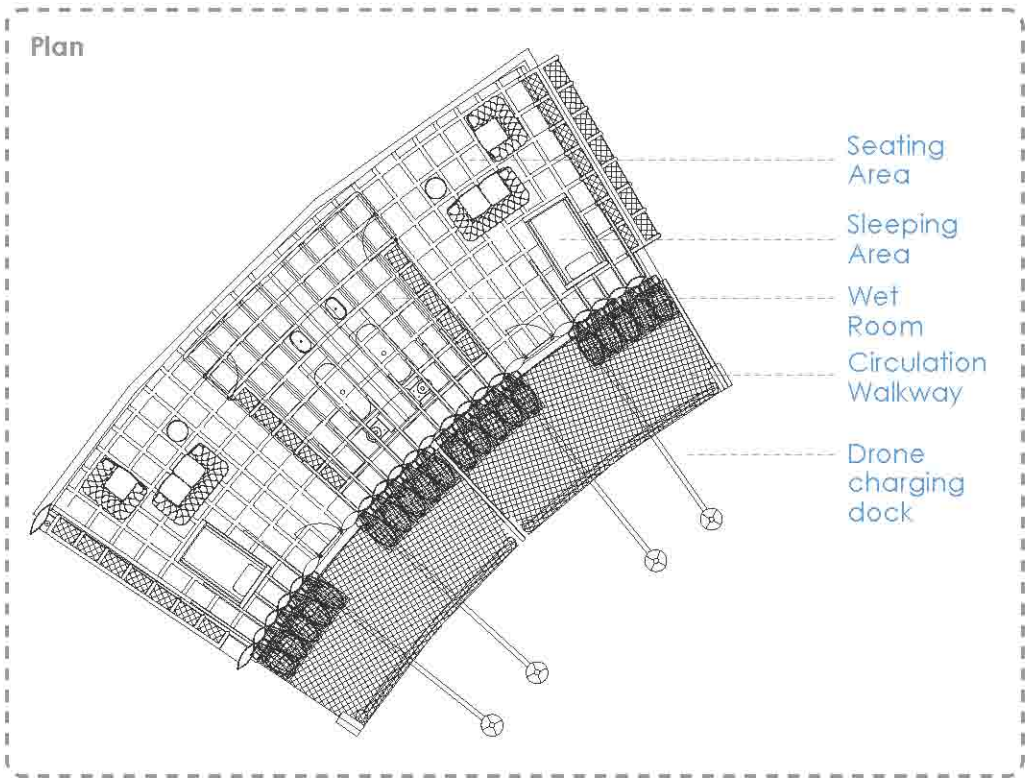


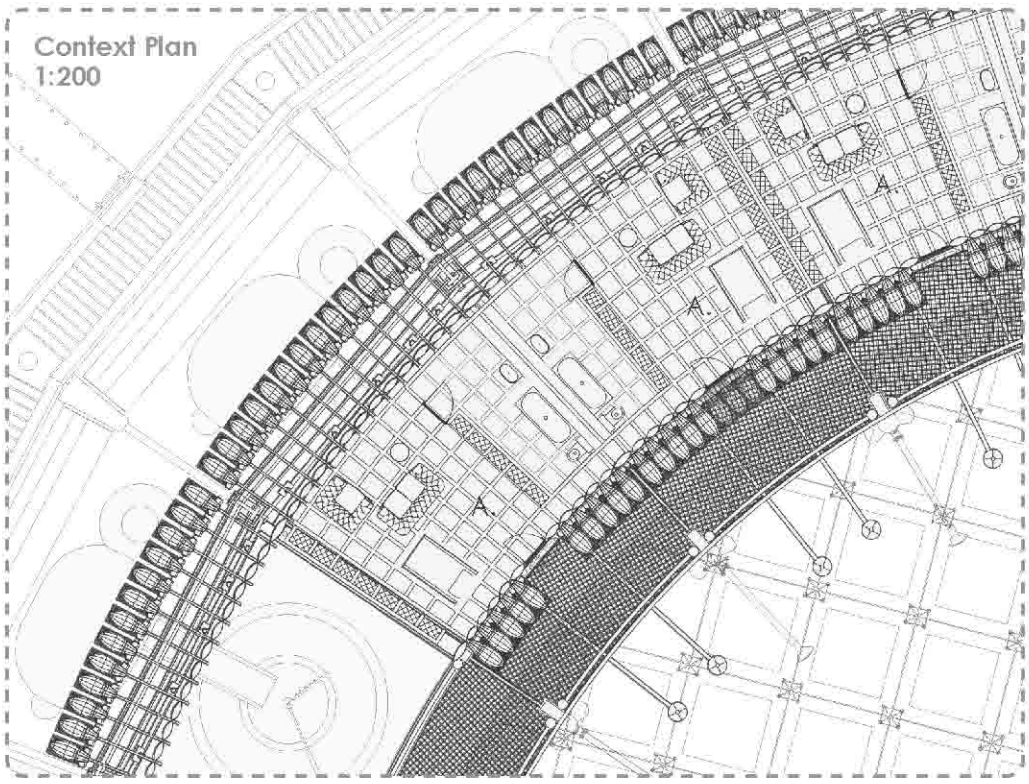
Escape Jetty

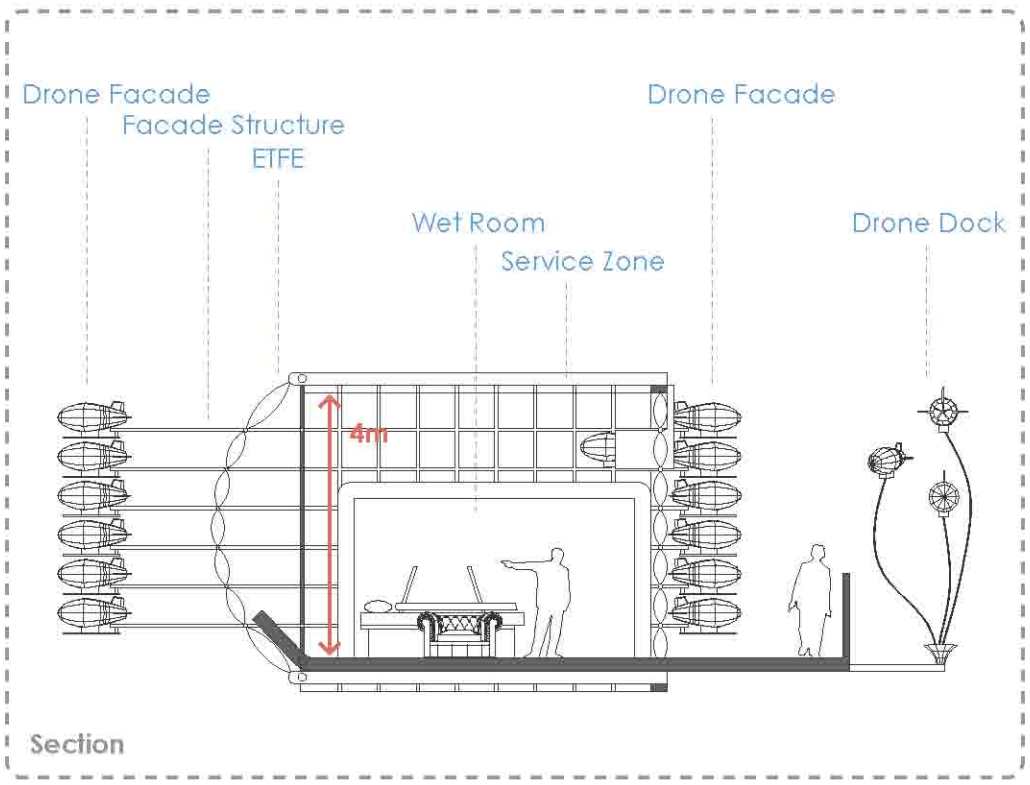


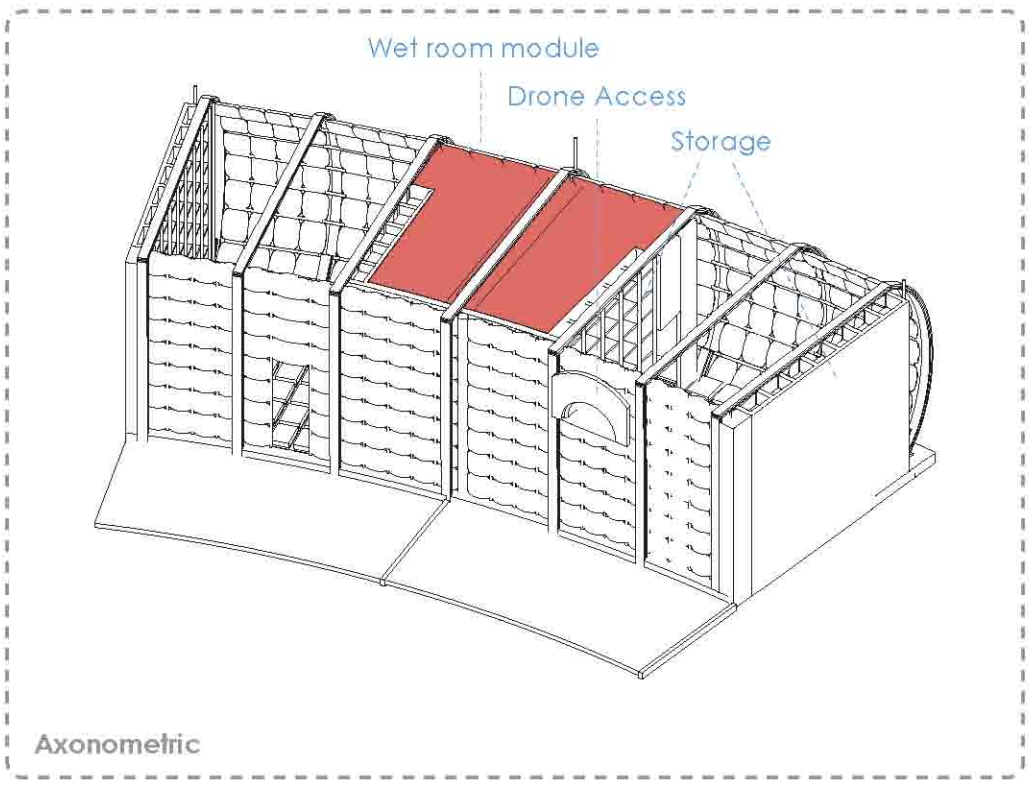
inflatable dinghy

Fire escape jetty's are located adjacent to each fire core. In the event of a fire, x9 inflatable dinghy's with a capacity for 8 people will deploy at each escape jetty, allowing the maximum capacity of the building [200 people] to float to safety



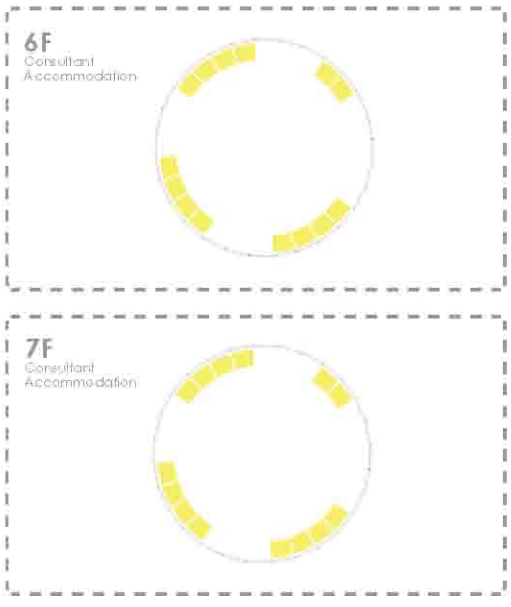






1	ACCOMMODATION	14 X MODULES
USE 14 HRS	MAIN ACTIVITIES RESIDENTIAL PROVIDING ACCOMMODATION FOR SHORT STAY CONSULTANTS	
VENTILATION CROSS VENTILATION		86,035 M2 PER MODULE [GIA]

QUALITY BREATH TAKING PANORAMIC VIEWS AND EMMERSIVE VIRTUAL REALITY EXPERIENCE
LIGHTING: ENTIRELY CUSTOMISABLE _ 100% PANORAMIC NATURAL DAYLIGHT _ VIRTUAL REALITY PANEL LIT
ACOUSTICS: LITTLE ABSORBTION DUE TO LACK OF SOFT FURNISHINGS

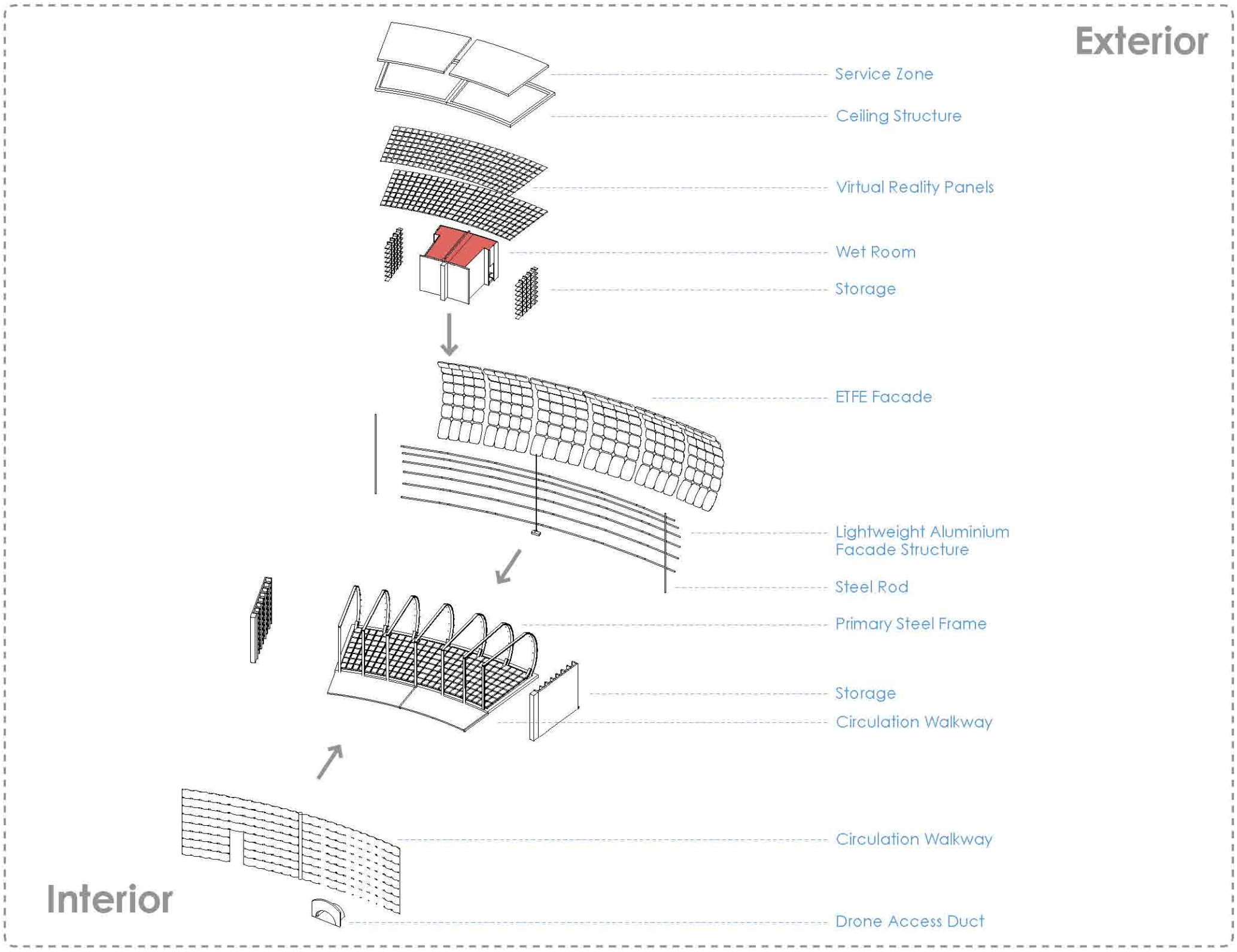


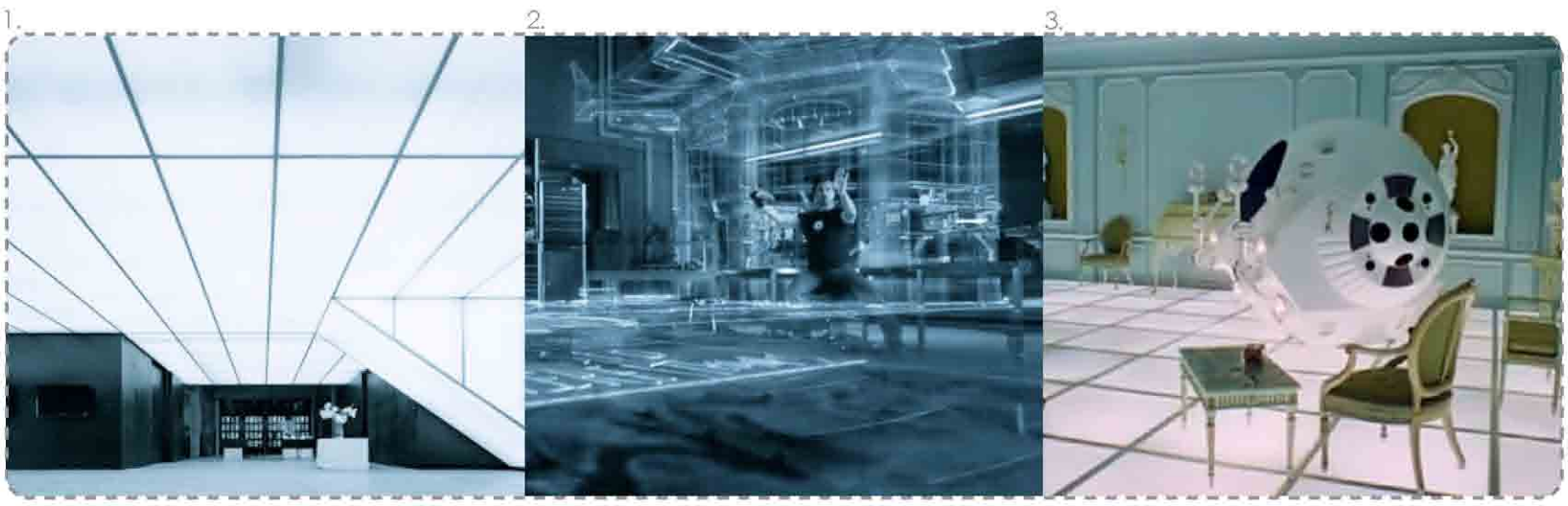
Proportion of GIA: 28/225 = **13%**

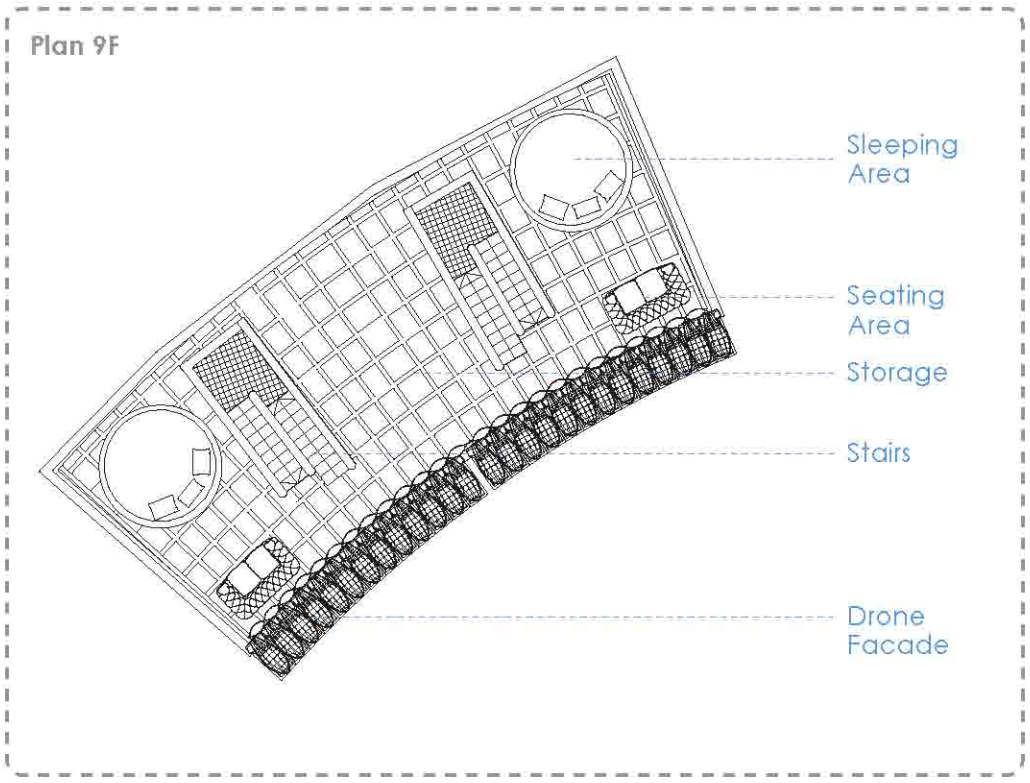
3.8_ACCOM

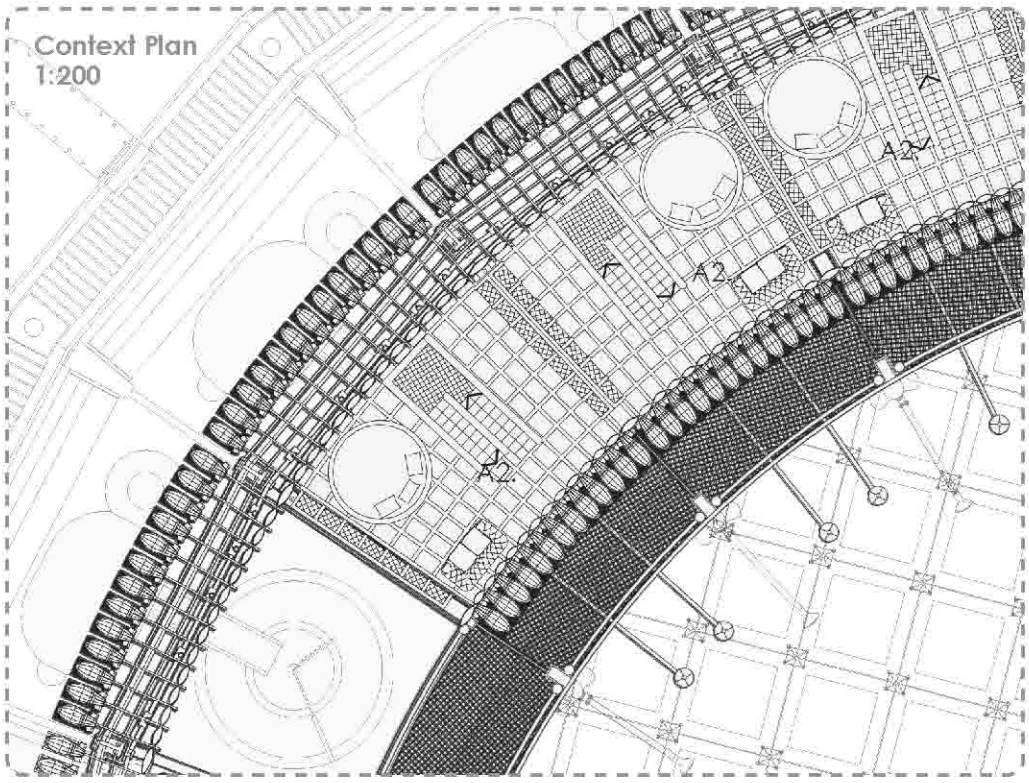
Room Schedule

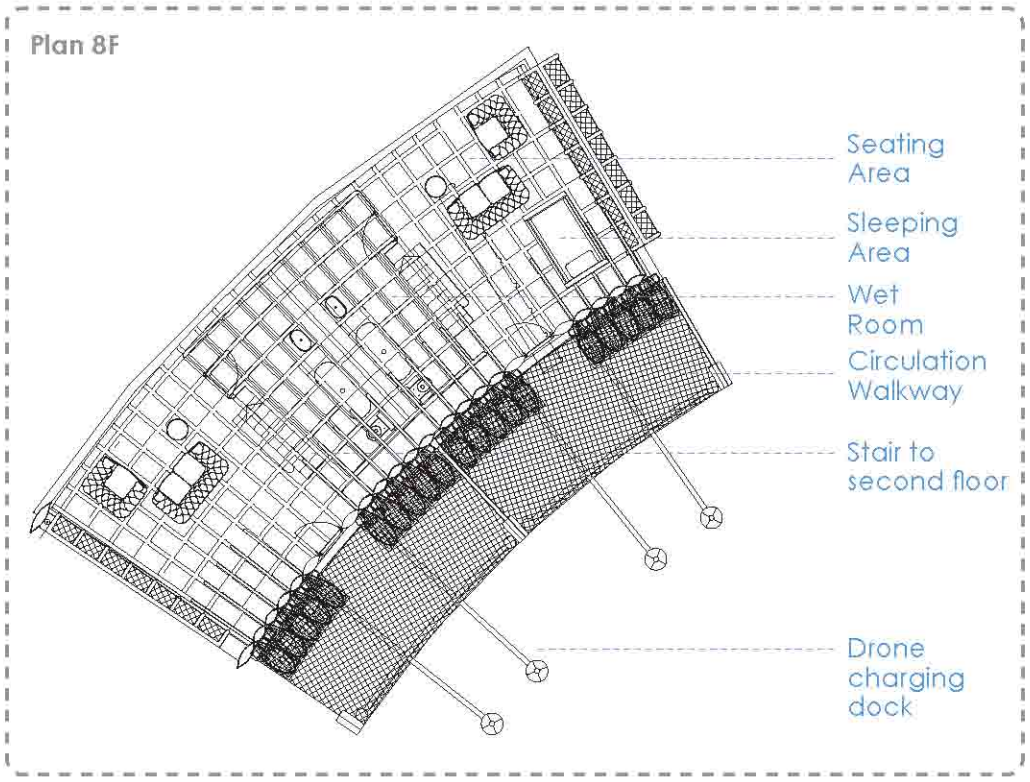
Prefabricated accommodation modules for short stay consultant visits. A world class living environment is provided by a combination of finely finished materials, expertly detailed to create a minimalist, tasteful environment to dwell. An entirely unique, fully immersive virtual reality environment is created using fully integrated VR panels in built to each module providing anything from world class multimedia facilities to the worlds best armchair tourism experiences. Each module is easily accessed by a fully programmable drone swarm service and both natural lighting and privacy levels can be tailored with the use of smart phone apps easily downloadable from the local cloud network

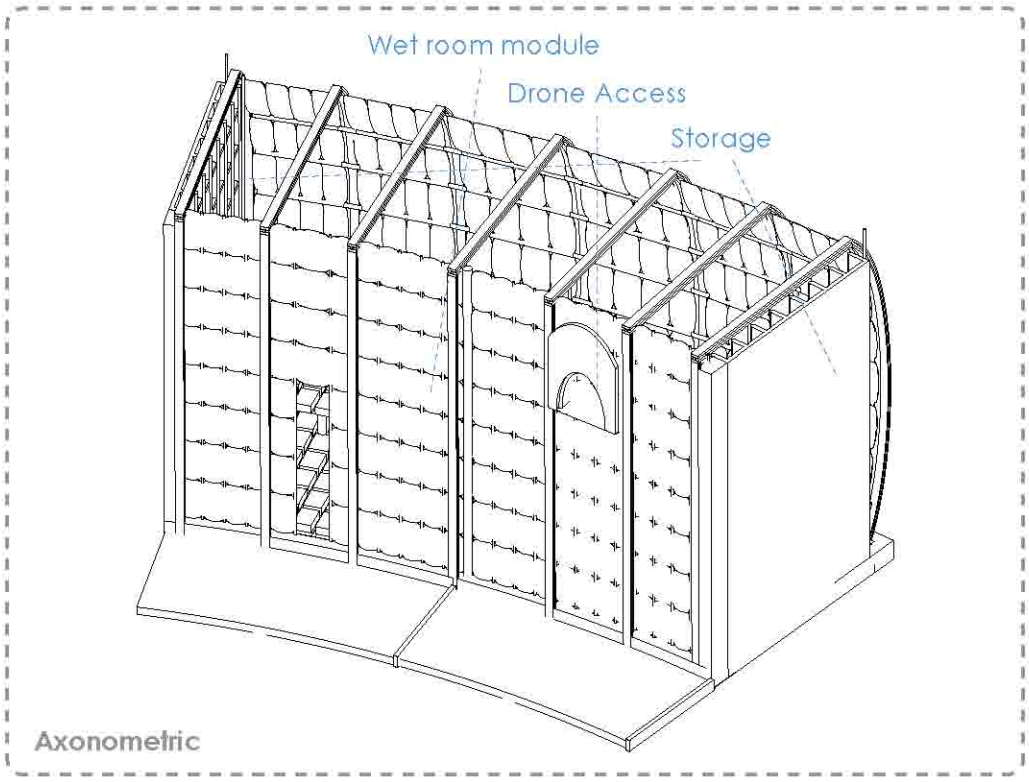

Exterior
Service Zone
Ceiling Structure
Virtual Reality Panels
Wet Room
Storage
ETFE Facade
Lightweight Aluminium Facade Structure
Steel Rod
Primary Steel Frame
Storage
Circulation Walkway
Circulation Walkway
Interior
Drone Access Duct

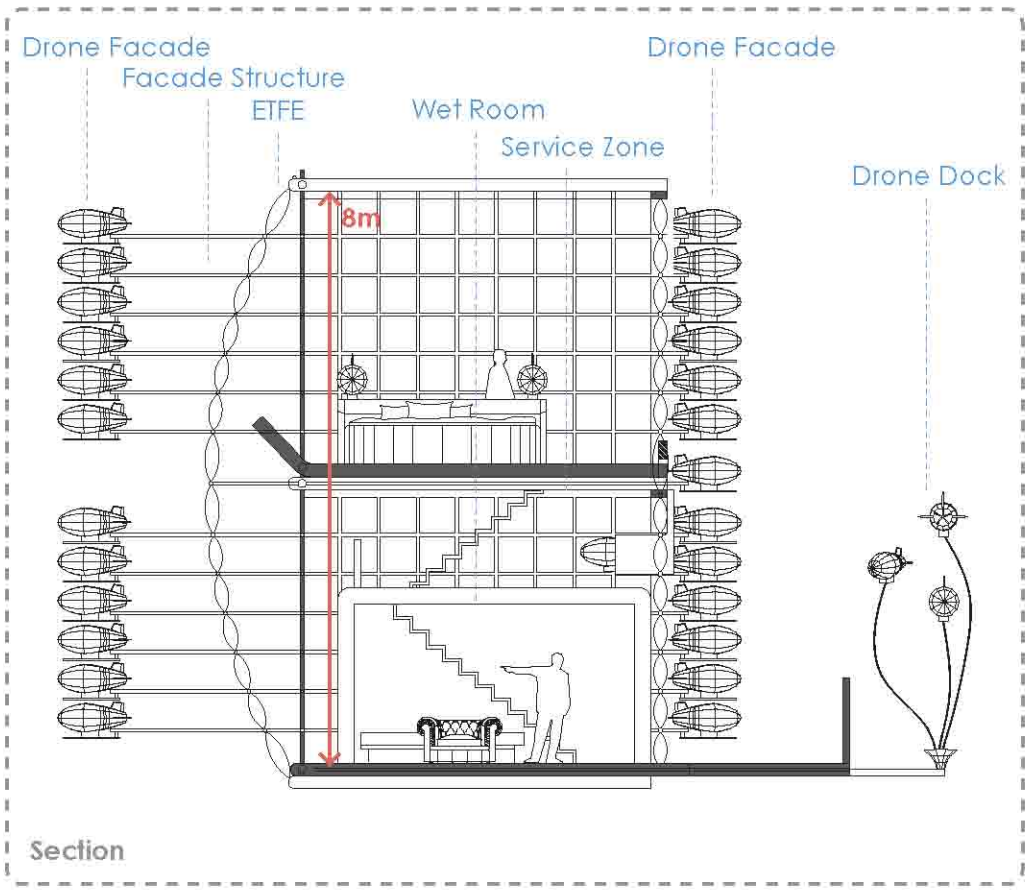

1.
2.
3.







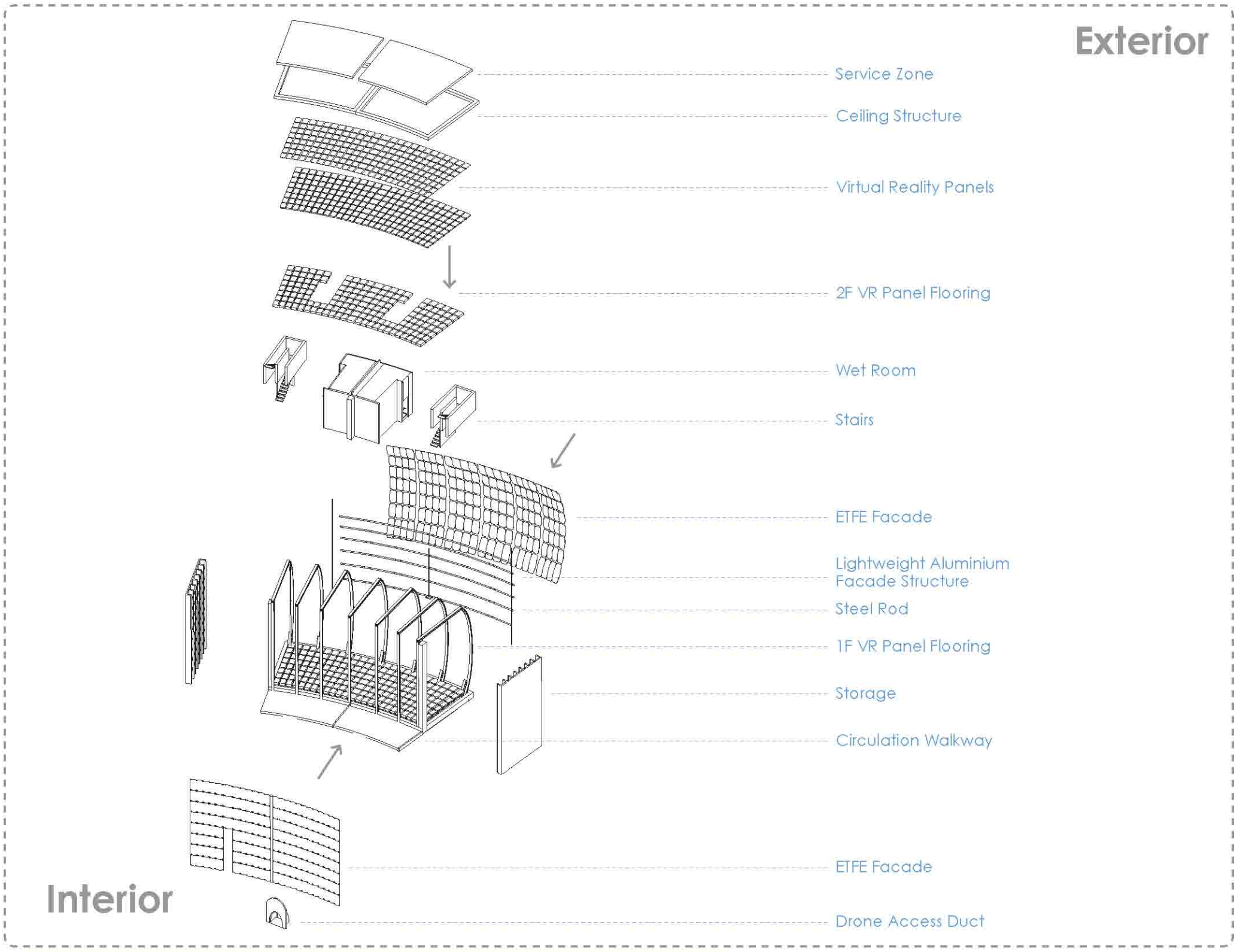




3.8[2]_PENTHOUSE

Room Schedule

Prefabricated accommodation modules for long stay consultant visits. A first class living environment is again provided by a combination of finely finished materials, expertly detailed to create a minimalist, tasteful environment to dwell. Guests will be blown away by the spacious design with astonishing views across London and the Thames. An entirely unique, fully immersive virtual reality environment is created using fully integrated VR panels in built to each module providing anything from world class multimedia facilities to the worlds best armchair tourism experiences. Each module is easily accessed by a fully programmable drone swarm service who are able to further tailor the long stay guests environments by delivering personal sentimental items from home such as furniture etc.



2	PENTHOUSE	7 X MODULES

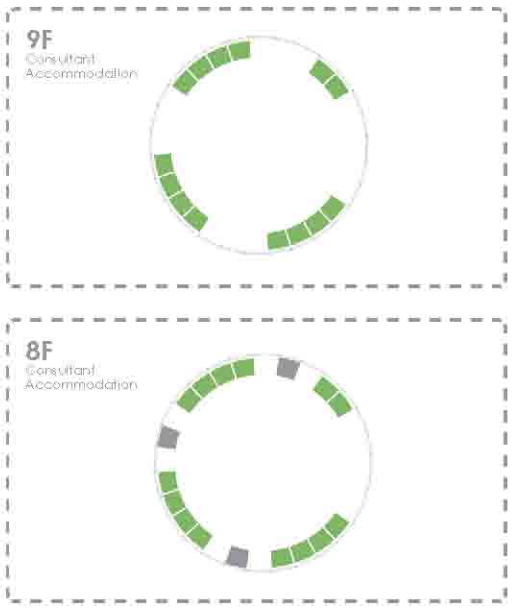
USE 14 HRS

MAIN ACTIVITIES RESIDENTIAL
PROVIDING LUXURY ACCOMMODATION FOR LONG STAY CONSULTANTS

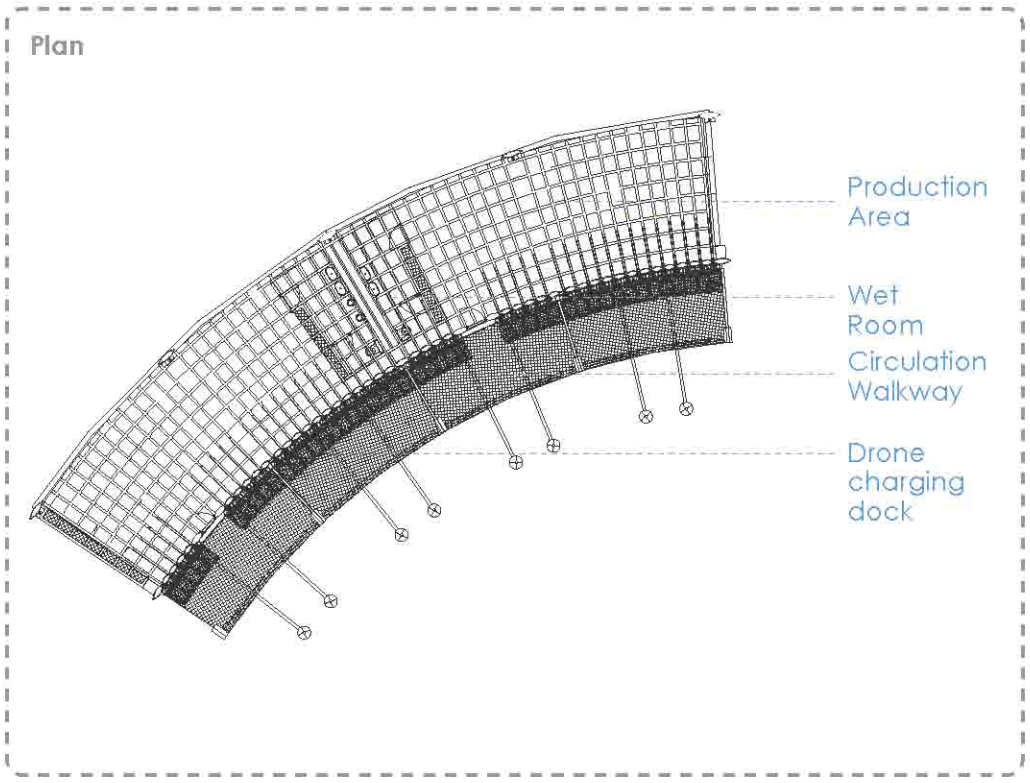
VENTILATION CROSS VENTILATION

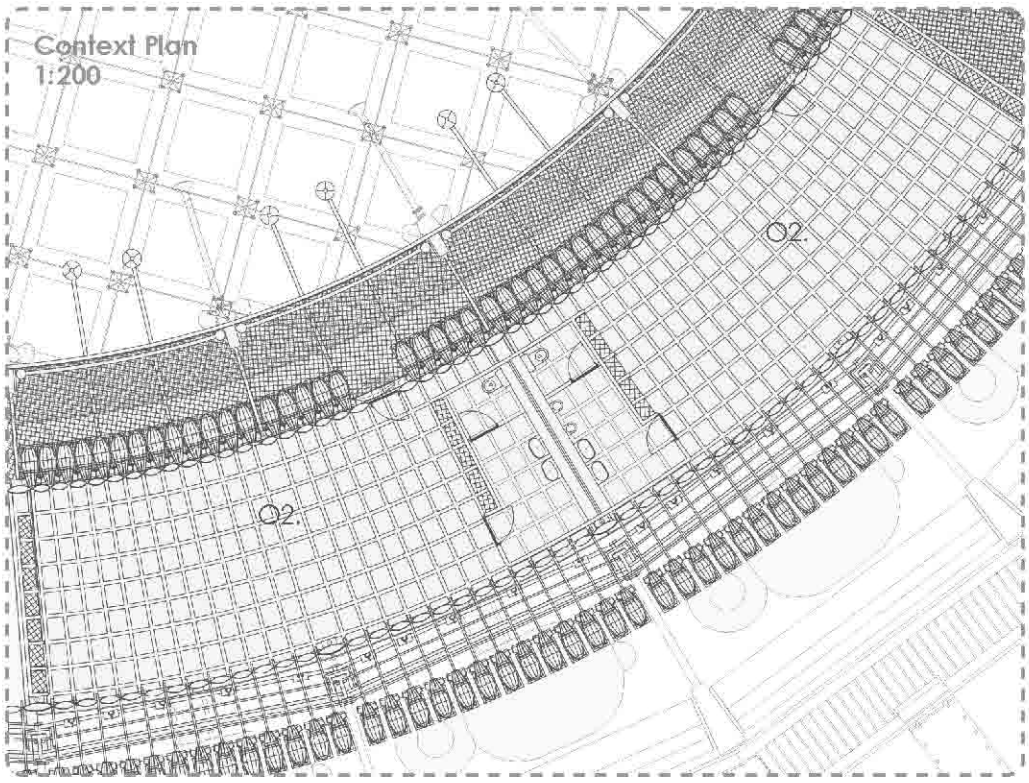
172,070 M2
PER MODULE (GIA)

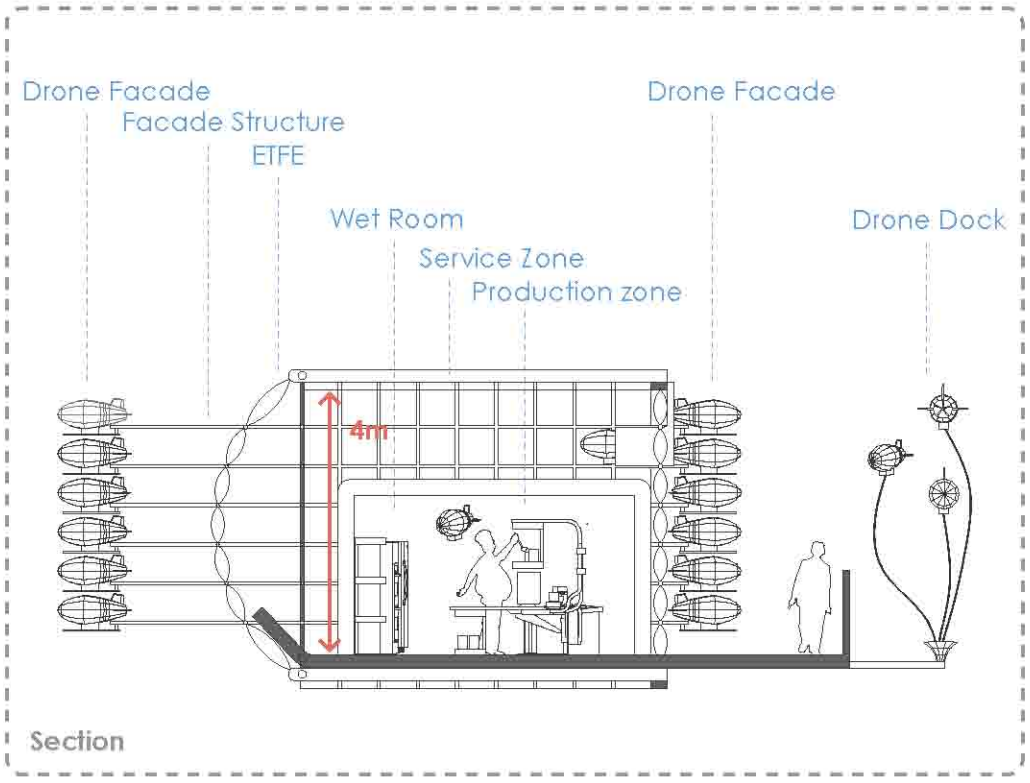
QUALITY BREATH TAKING PANORAMIC VIEWS AND IMMERSIVE VIRTUAL REALITY EXPERIENCE
HIGHEST GRADE ACCOM PROVIDED, SPATIOUS, LUXARY
LIGHTING: ENTIRELY CUSTOMISABLE _ 100% PANORAMIC NATURAL DAYLIGHT _ VIRTUAL REALITY PANEL LIT
ACOUSTICS: LITTLE ABSORPTION DUE TO LACK OF SOFT FURNISHINGS

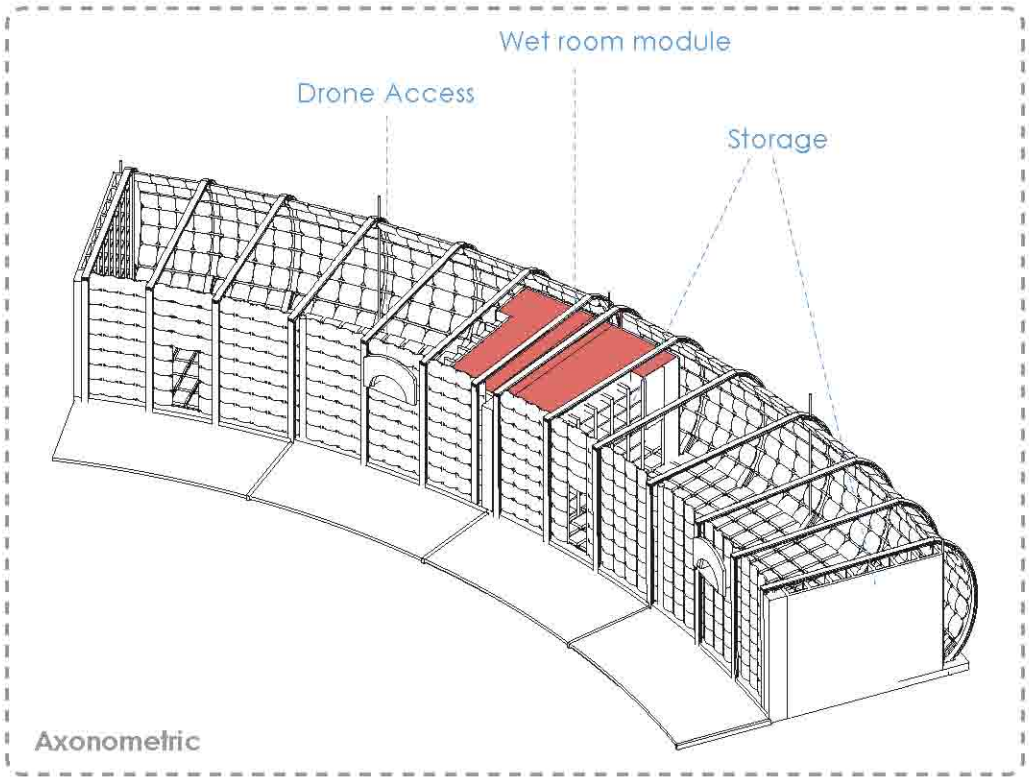


Proportion of GIA: 28/225 = **13%**

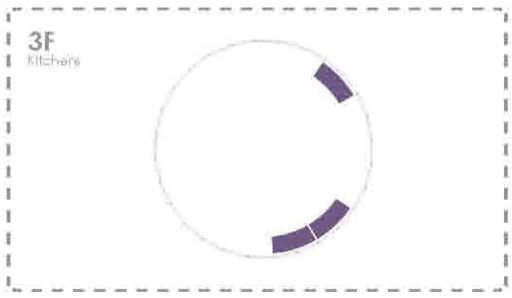








3	KITCHEN	3 X MODULES
USE 10 HRS	MAIN ACTIVITIES PREPARING FOOD COOKING CANNED EELS AND MASHED POTATO WITH LIQUOR AND CHILLI VINEGAR	
VENTILATION MECHANICAL		258,105 M2 PER MODULE [GIA]
QUALITY OPEN-PLAN, SPACIOUS, FRESH AND CLEAN LIGHTING: ENTIRELY CUSTOMISABLE _ 100% PANORAMIC NATURAL DAYLIGHT _ VIRTUAL REALITY PANEL LIT ACOUSTICS: LITTLE ABSORPTION DUE TO LACK OF SOFT FURNISHINGS		

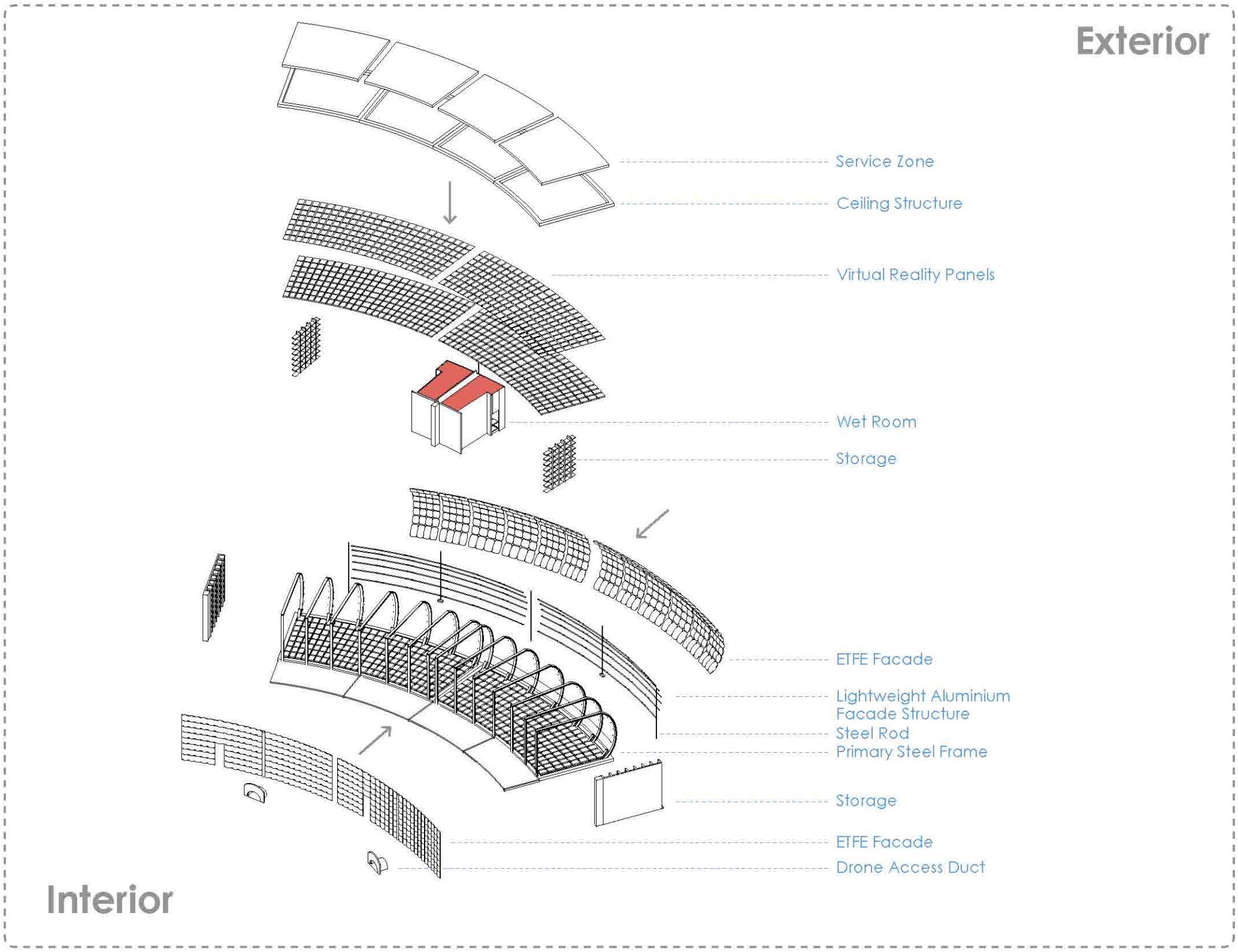


Proportion of GIA: 6/225 = **3%**

3.8 3 _KITCHEN

Room Schedule

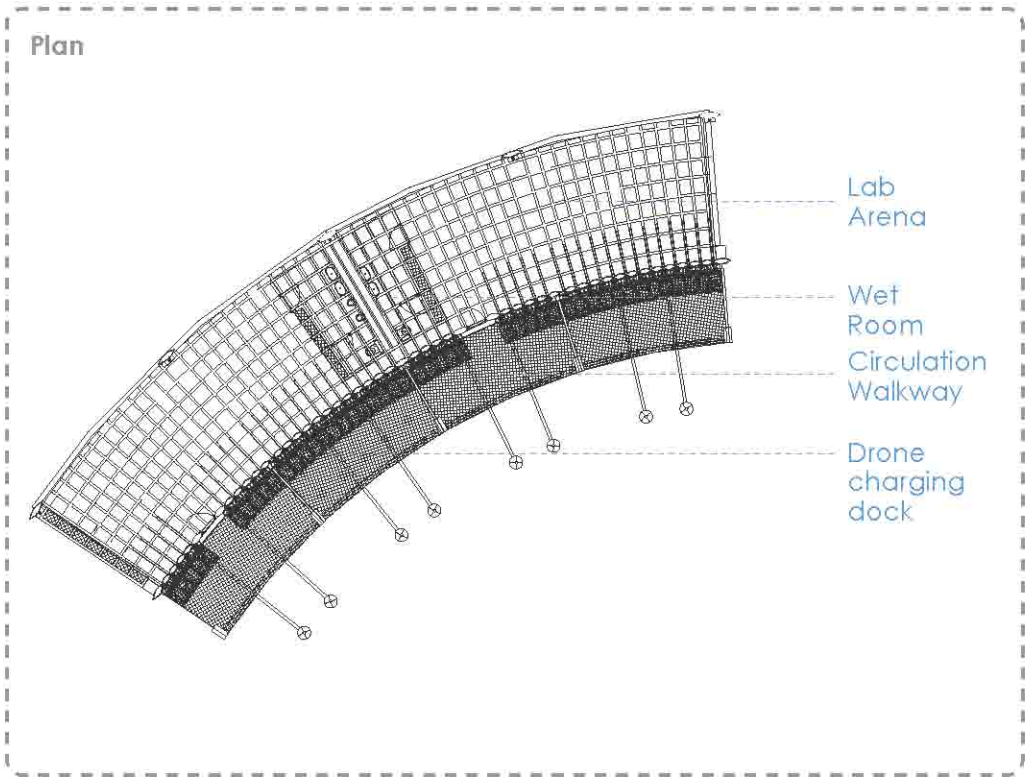
Prefabricated world class catering modules that provide michelin star quality dishes to both the Eel CAN_teen and VIP restaurant terrace. World class chefs prepare a number of avant garde Eel based dishes ranging from 'Eels and mash' where all European eels are reared on site and fully organic potatoes are grown hydroponically underground. A passive virtual reality environment with a gestural recognition interface is utilised to control a fully programmable drone swarm waitering service performing roles of fresh ingredients delivery to waitering services

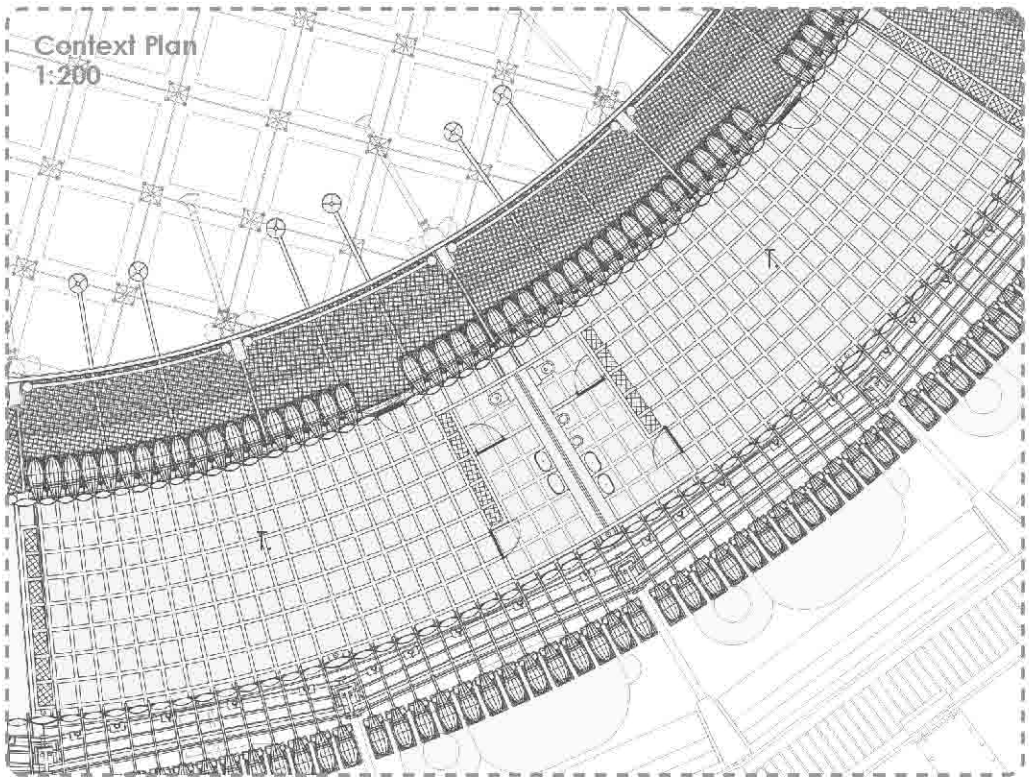

Exterior
Service Zone
Ceiling Structure
Virtual Reality Panels
Wet Room
Storage
ETFE Facade
Lightweight Aluminium
Facade Structure
Steel Rod
Primary Steel Frame
Storage
ETFE Facade
Drone Access Duct
Interior

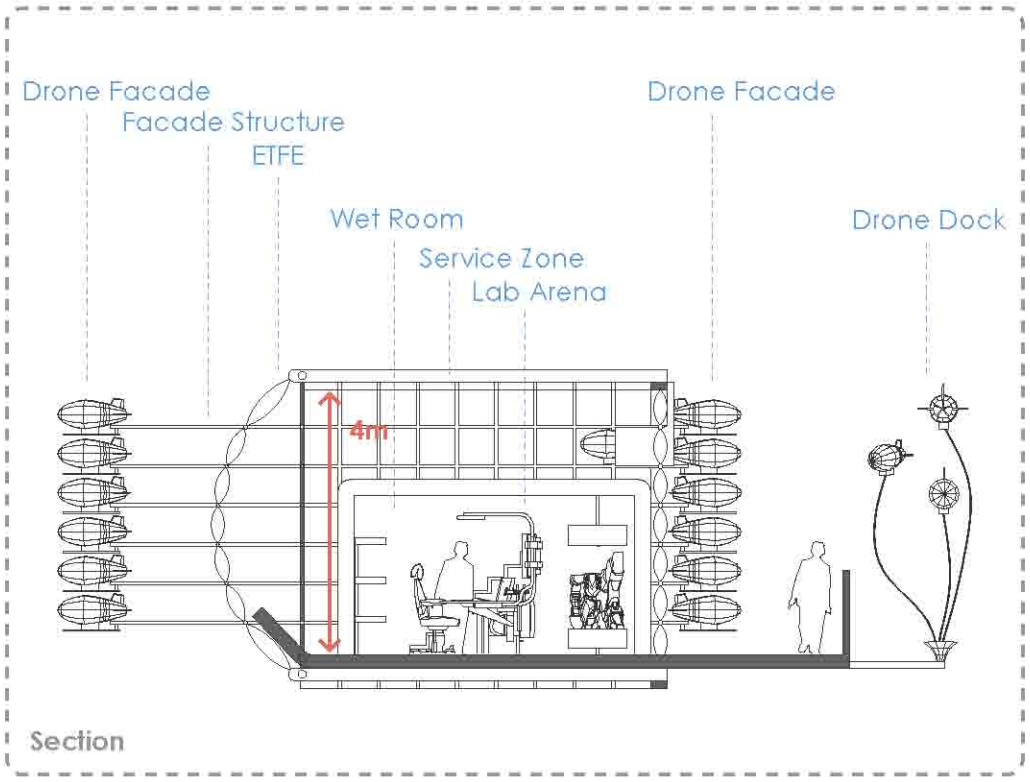
1.

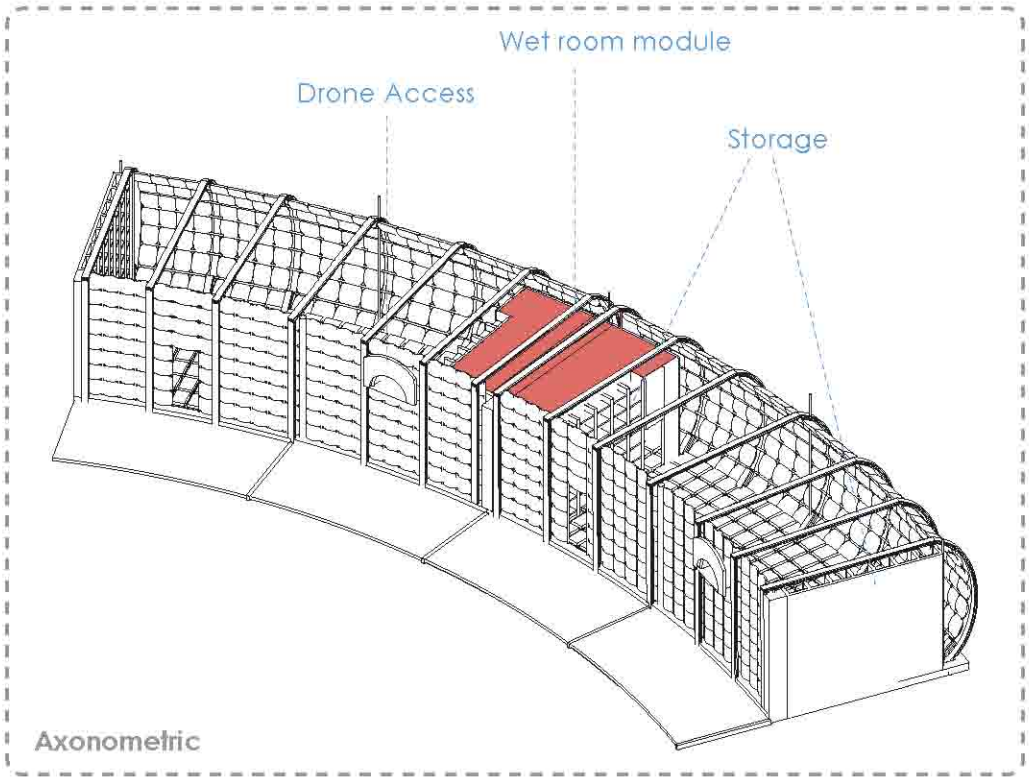
2.

3.



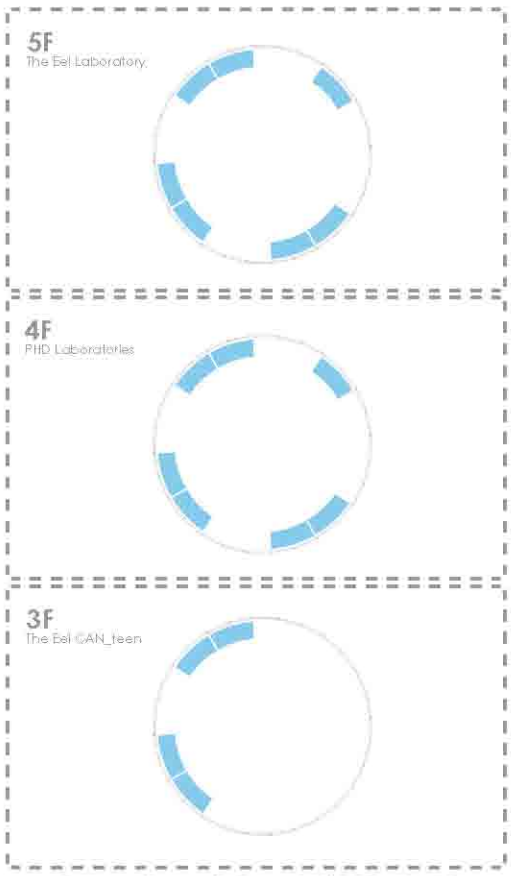






4	LABORATORY	18 X MODULES
USE 10 HRS	MAIN ACTIVITIES POSTHUMAN RESEARCH LABORATORY SPACES FOR POSTHUMAN RESEARCH	
VENTILATION MECHANICAL		258,105 M2 PER MODULE (GIA)

QUALITY OPEN PLAN, SPACIOUS, FRESH AND CLEAN, COMFORTABLE TO WORK FOR LONG PERIODS, EMMERSIVE VIRTUAL REALITY INTERFACE TO SUPPLEMENT RESEARCH
LIGHTING: ENTIRELY CUSTOMISABLE _ 100% PANORAMIC NATURAL DAYLIGHT _ VIRTUAL REALITY PANEL LIT
ACOUSTICS: LITTLE ABSORPTION DUE TO LACK OF SOFT FURNISHINGS

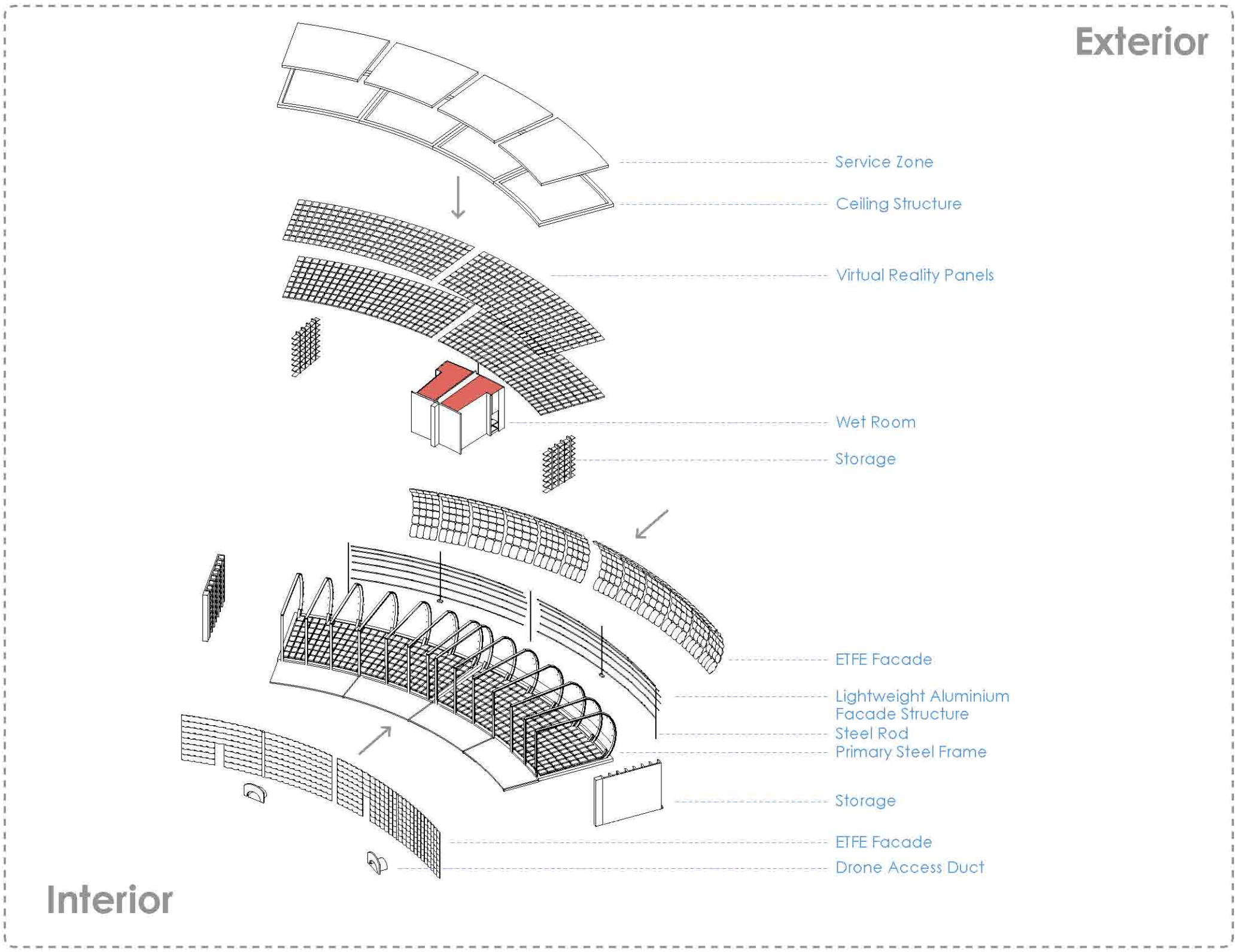


Proportion of GIA: 36/225 =**16%**

3.8 4 _ LABORATORY

Room Schedule

World class, prefabricated modules precision designed and manufactured to provide a cutting edge posthuman research environment. Designed specifically as flexible open plan spaces easily customisable to match the rapid advances in research through reconfiguration of the laboratory spaces. Delivery of new equipment and manufacturing kit is floated into place from transport barges through the atrium space by the drone swarm who are able to utilise storage docks supported from the concrete cores in order to tailor research and manufacturing environments rapidly on demand.

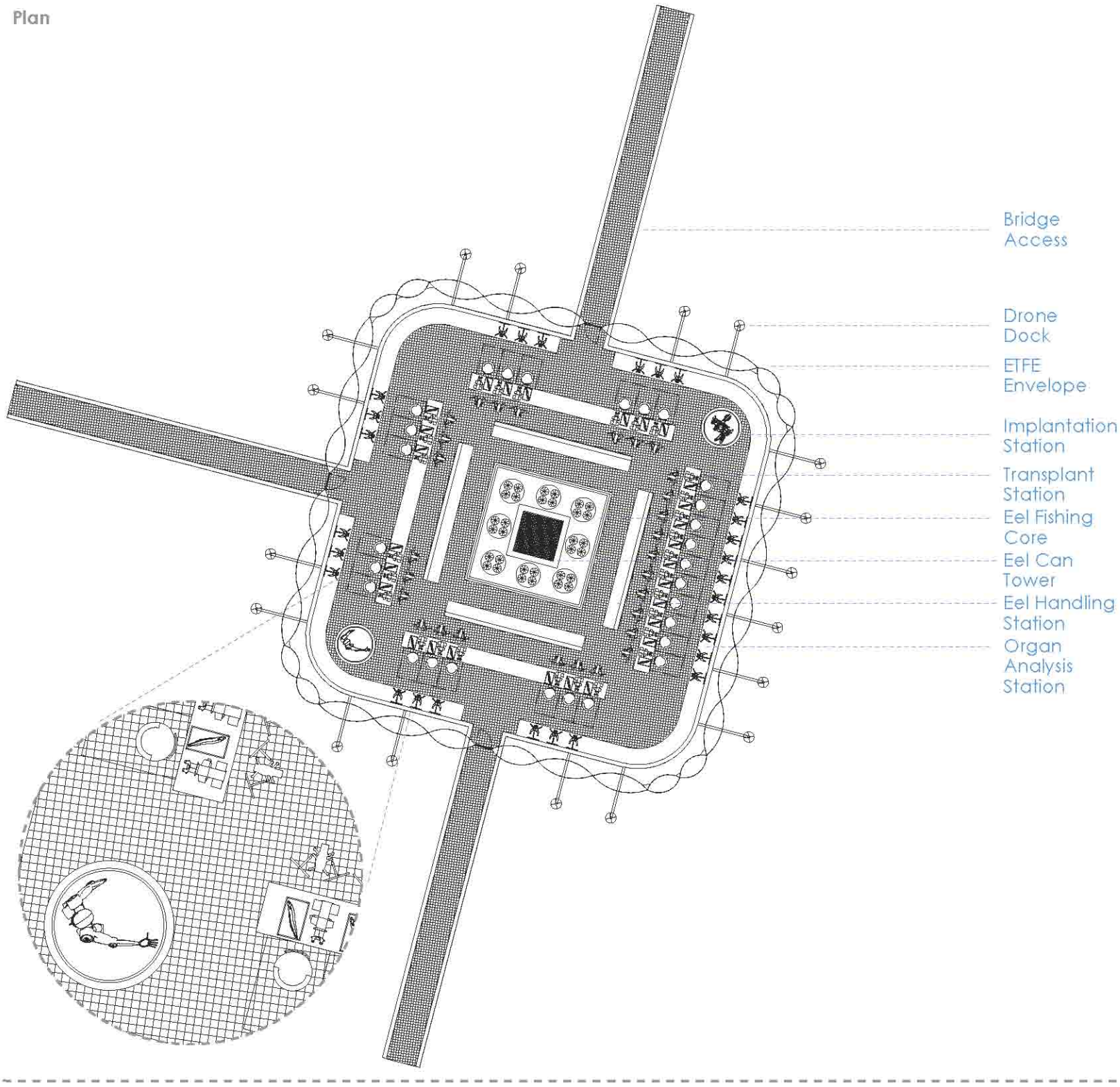

Exterior
Service Zone
Ceiling Structure
Virtual Reality Panels
Wet Room
Storage
ETFE Facade
Lightweight Aluminium
Facade Structure
Steel Rod
Primary Steel Frame
Storage
ETFE Facade
Drone Access Duct
Interior

1.

2.

3.

Plan



5	EEL LAB	2 x FLOORS

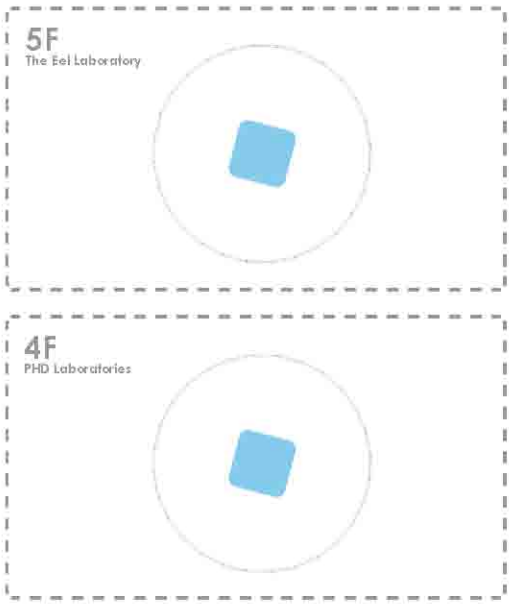
USE 10 HRS

MAIN ACTIVITIES POSTHUMAN MANUFACTURE
LABORATORY FOR THE MANUFACTURE OF SYNTHETIC HUMAN BEINGS

VENTILATION STACK VENTILATION

845,877 M2
PER MODULE [GIA]

QUALITY OPEN PLAN, SPACIOUS, FRESH AND CLEAN, BRIGHT AND ACTIVE ENVIRONMENT
LIGHTING: ENTIRELY CUSTOMISABLE _ SKY LIT NATURAL DAYLIGHT _ VIRTUAL REALITY PANEL LIT
ACOUSTICS: SLIGHT ABSORPTION DUE TO 360 DEG ETFE SKIN, NOISE INSULATED



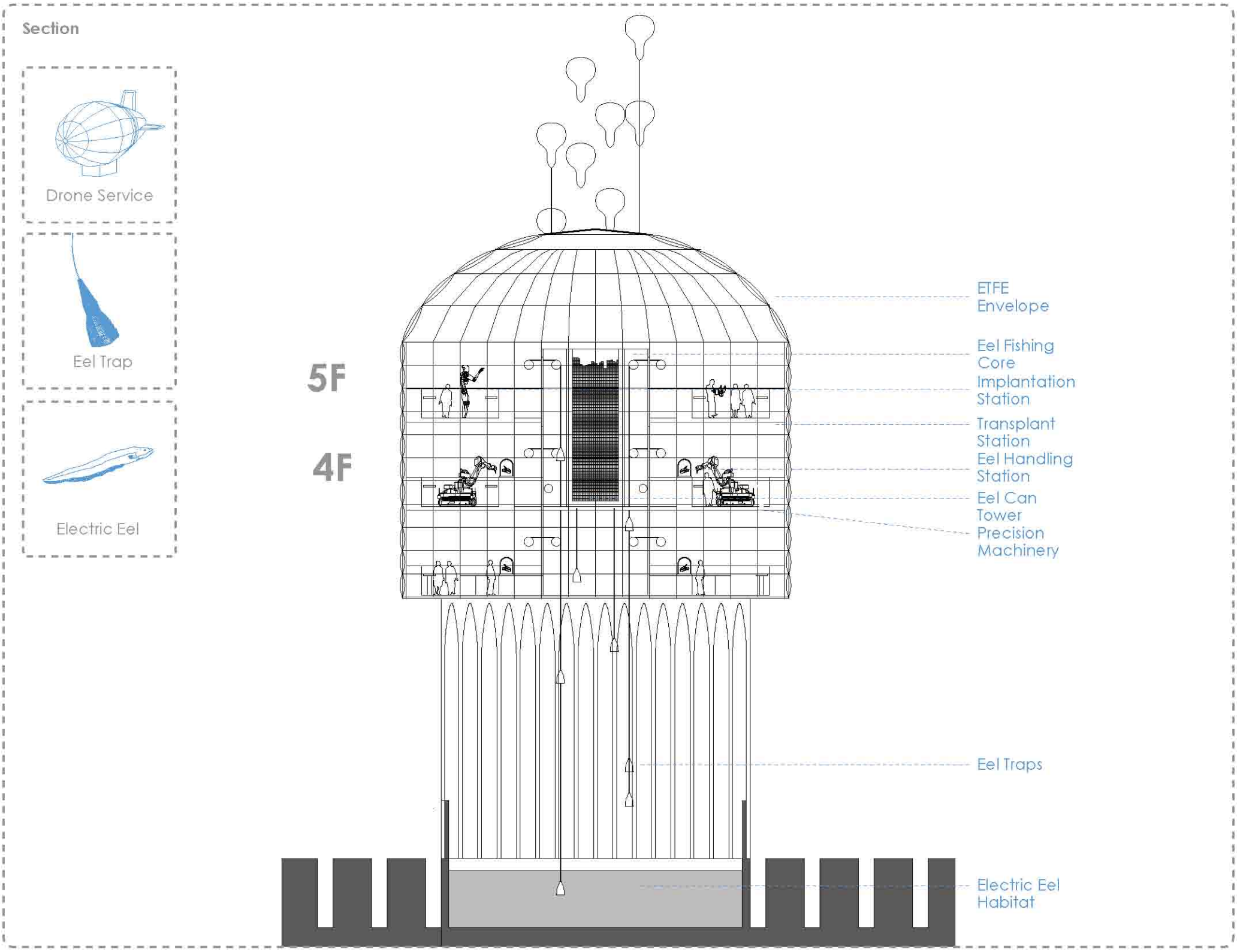
Proportion of GIA: 32/225 = **14%**

3.8 5 _ EEL LAB

Room Schedule

A cutting edge prefabricated module precision designed and manufactured to provide a cutting edge posthuman research environment. Designed specifically as air tight 'clean' spaces for dissection of electric eels and storage of their energy producing organs. The upper level is tailored for human non- human interaction and manufacture / assembly of posthuman beings. An ETFE envelope provides a 100% fully transparent membrane to demonstrate the transparency of the research being conducted to visitors who may question the companies ethics and intentions. The module is easily 'locked down' in the event of an emergency with access bridges being blocked off to anything entering or attempting to leave the quarantine environment.

Section

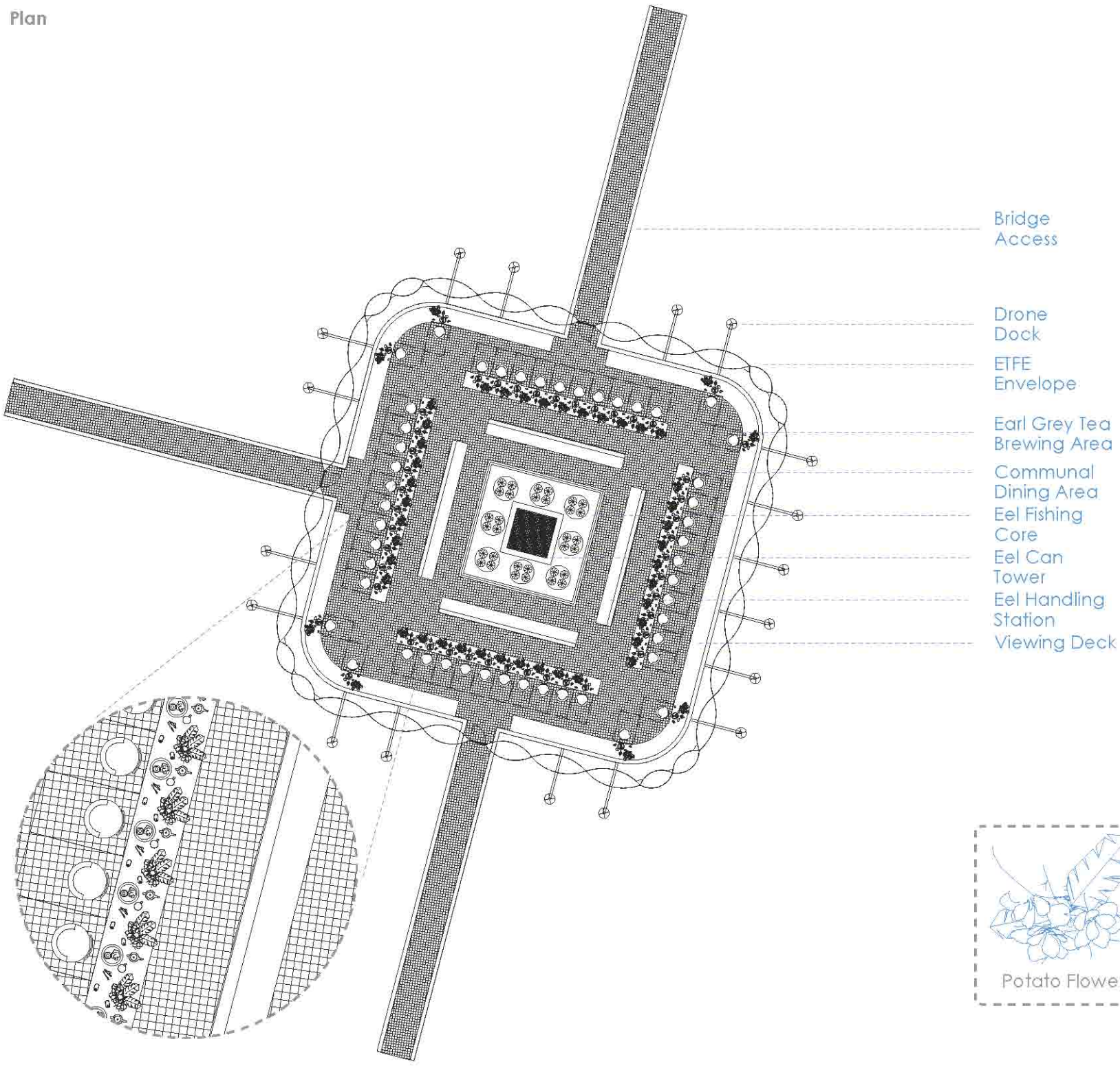

Drone Service
Eel Trap
Electric Eel
5F
4F
ETFE Envelope
Eel Fishing Core
Implantation Station
Transplant Station
Eel Handling Station
Eel Can Tower
Precision Machinery
Eel Traps
Electric Eel Habitat

1.

2.

3.

Plan



6	EEL CAN_TEEN	1 x FLOOR

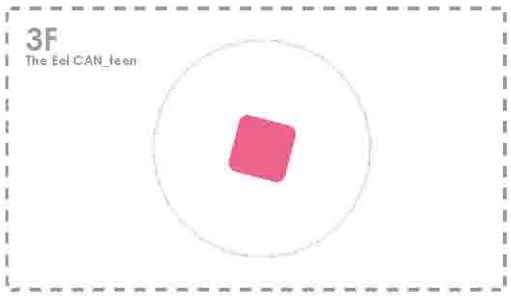
USE 10 HRS

MAIN ACTIVITIES COMMUNAL DINING
CANTEEN TO FEED STAFF AND ARENA FOR CONDUCTING TURING TESTS ON THE CYBORGS

VENTILATION STACK VENTILATION

422,938 M2
PER MODULE [GIA]

QUALITY OPEN PLAN, SPACIOUS, FRESH AND CLEAN, BRIGHT AND ACTIVE ENVIRONMENT
LIGHTING: ENTIRELY CUSTOMISABLE _ SKY LIT NATURAL DAYLIGHT _ VIRTUAL REALITY PANEL LIT
ACOUSTICS: SLIGHT ABSORPTION DUE TO 360 DEG ETFE SKIN, MUFFLED LOW LEVEL BACKGROUND NOISE FOR GUESTS TO HOLD CONVERSATIONS EASILY



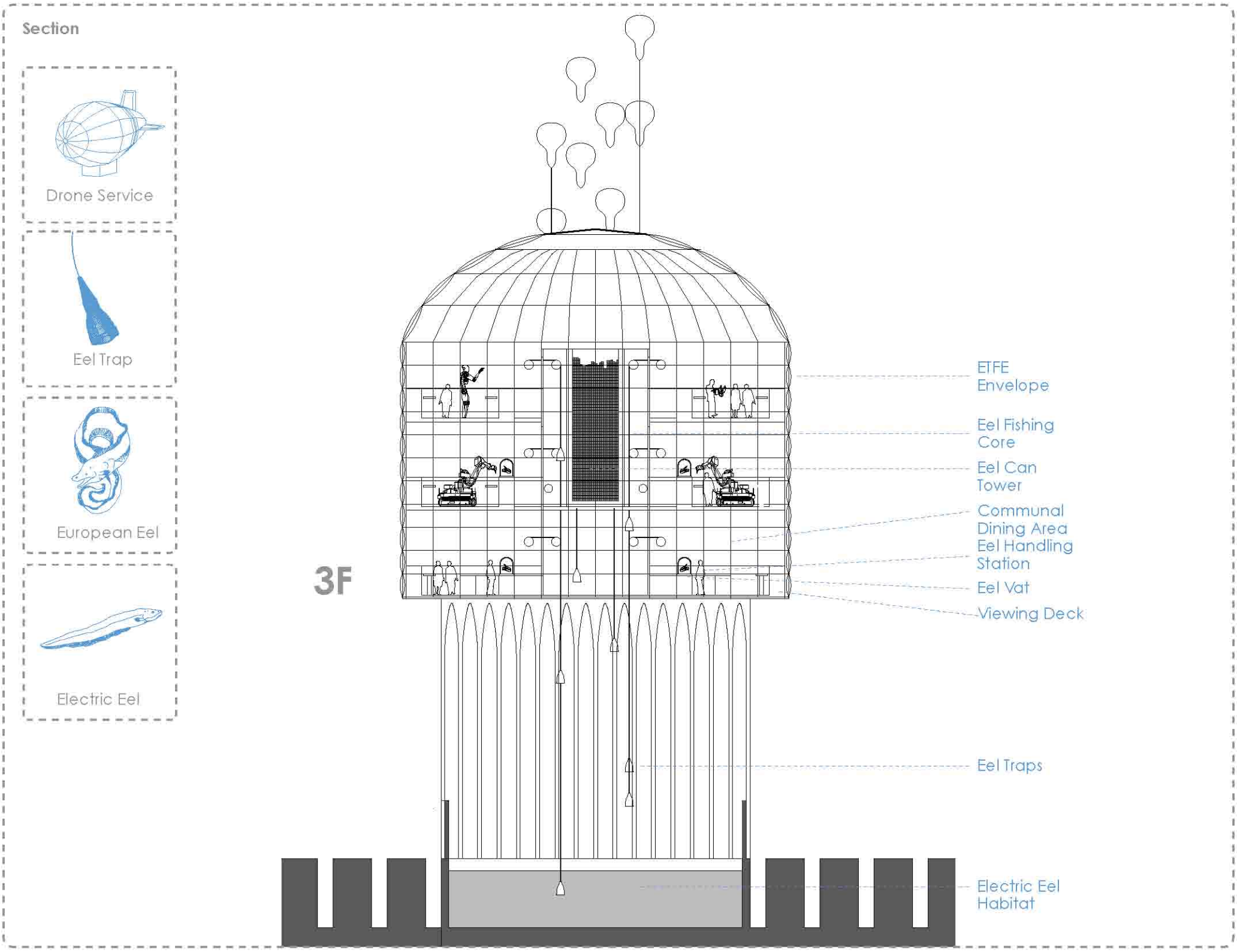
Proportion of GIA: 16/225 = **7%**

3.8 6 __Eel CAN_teen

Room Schedule

A completly unique dining experience is created by a number of world first's. The canteen, encased in a 360 degree envelope of ETFE is suspended within a man made cloud that hovers over a charged landscape of electric eel habitats. Customers are assigned their personal drone on arrival who takes their orders from a menu of gourmet Eel based dishes accessed from an entirely immersive virtual reality interface. The drone is then responsible for collecting and delivering any dishes and beverages from the kitchens to their client until their meal is over. Guests sit in a teppanyaki styled environment, with chefs preparing freshly caught electric eel dishes before their eyes if they so wish. Discreet Turing tests are also conducted by the lab above, who expose guests to their posthuman subjects unknowingly. These tests will prove the success of the posthuman subjects AI, providing primary source test data to the scientists as well as a novel source of entertainment to the guests

Section


Drone Service
Eel Trap
European Eel
Electric Eel
3F
ETFE Envelope
Eel Fishing Core
Eel Can Tower
Communal Dining Area
Eel Handling Station
Eel Vat
Viewing Deck
Eel Traps
Electric Eel Habitat

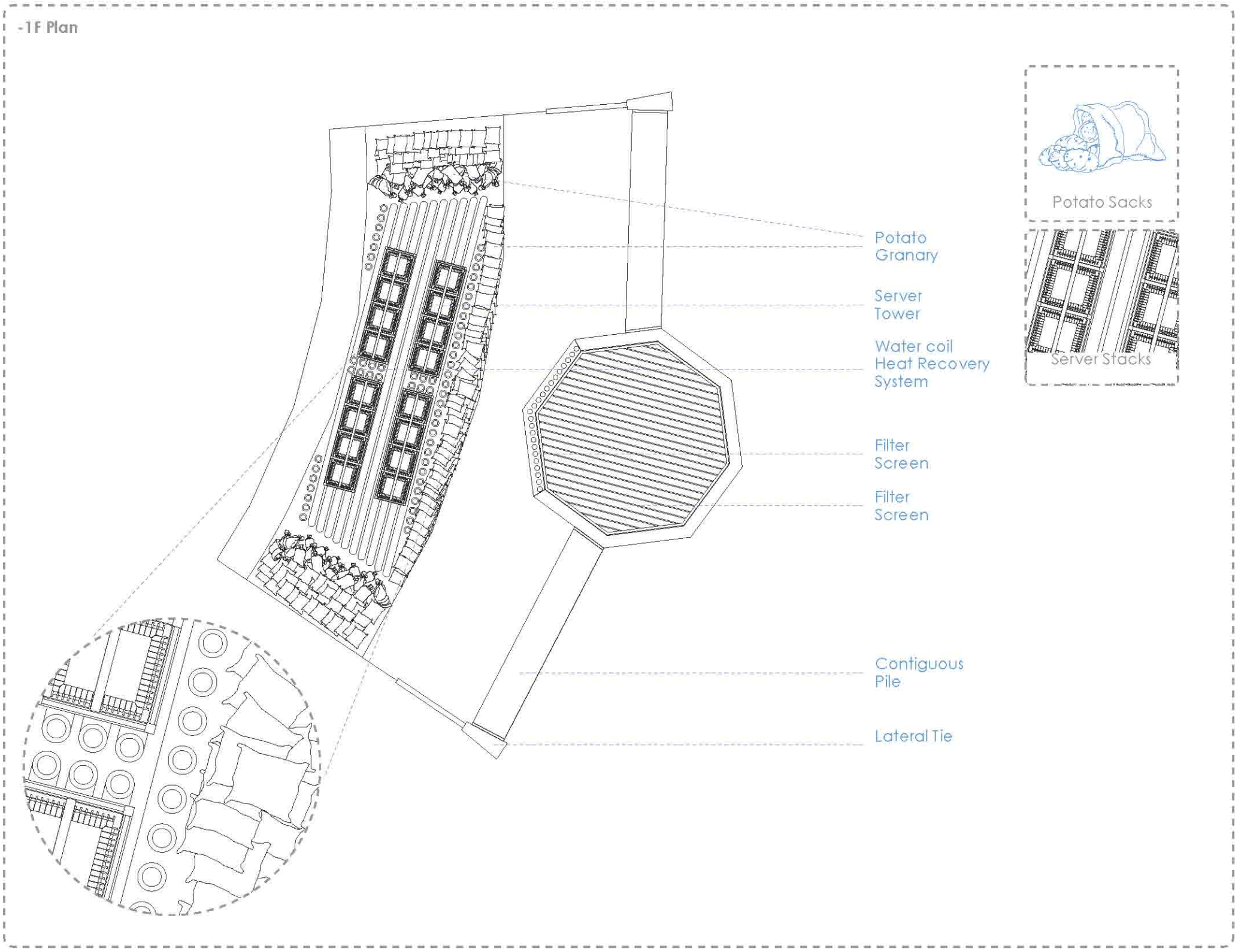
1.

2.

3.


WHIP
10¢
ORANGE WHIP 10¢

-1F Plan



7	SERVER TERRACES	3 x FLOORS

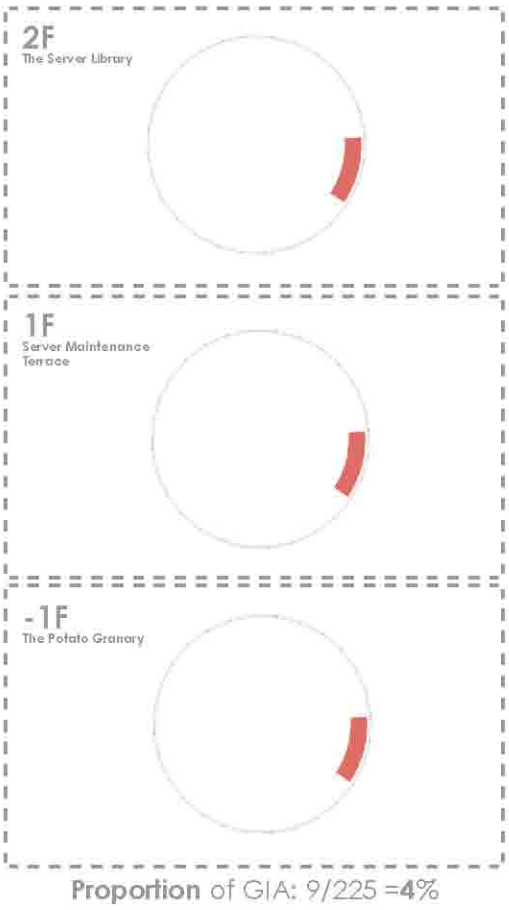
USE 24 HRS

MAIN ACTIVITIES CREATE A LOCAL CLOUD NETWORK TO OPERATE DRONES
DRONES ARE INSTRUCTED AND PROGRAMMED USING SMART PHONE APPS OVER THE CLOUD

VENTILATION STACK VENTILATION

686,355 M2
PER MODULE (GIA)

QUALITY INDUSTRIAL AESTHETIC, COMFORTABLE TO REST AND WORK ON HIGHER TIERS
LIGHTING: BEAUTIFUL LOWERS LEVELS ARE IN DARKNESS IN ORDER FOR POTATOES TO REMAIN NON - TOXIC
ACOUSTICS: SOFT MELLOWED ACOUSTICS DUE TO HIGH LEVELS OF POTATOES IN THE GRANARY



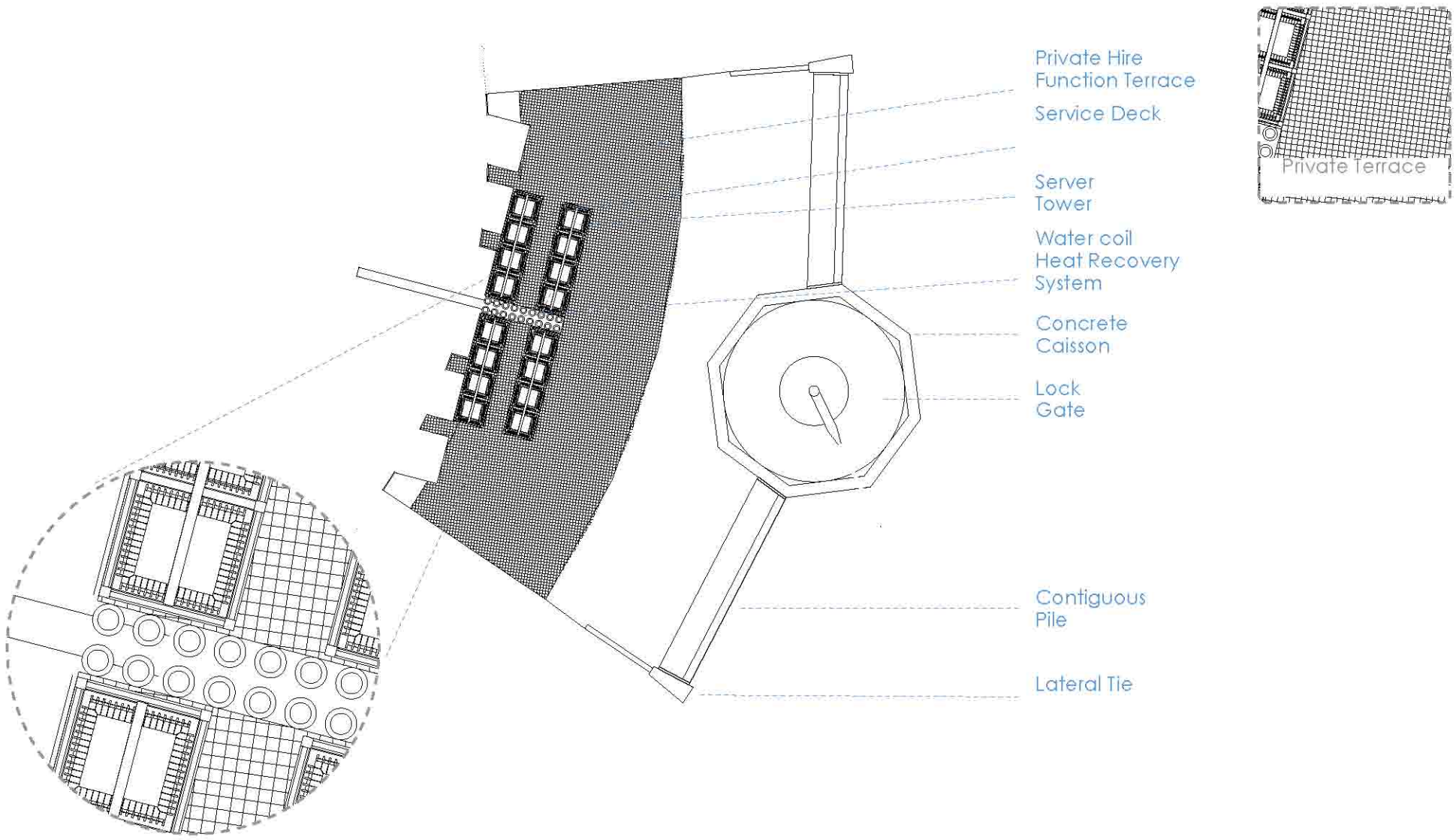
Proportion of GIA: 9/225 =**4%**

3.8 7 _TERRACE

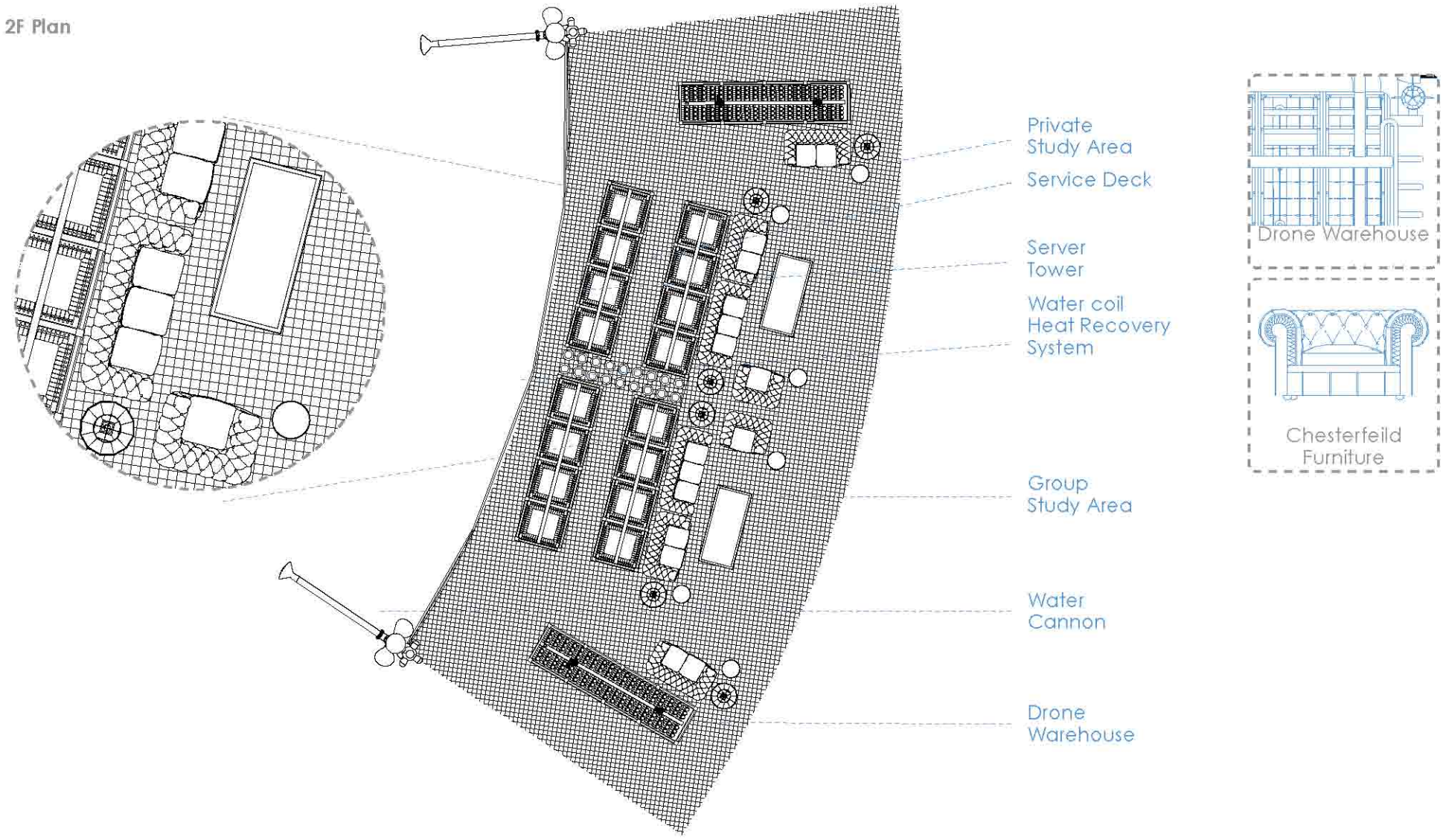
Room Schedule

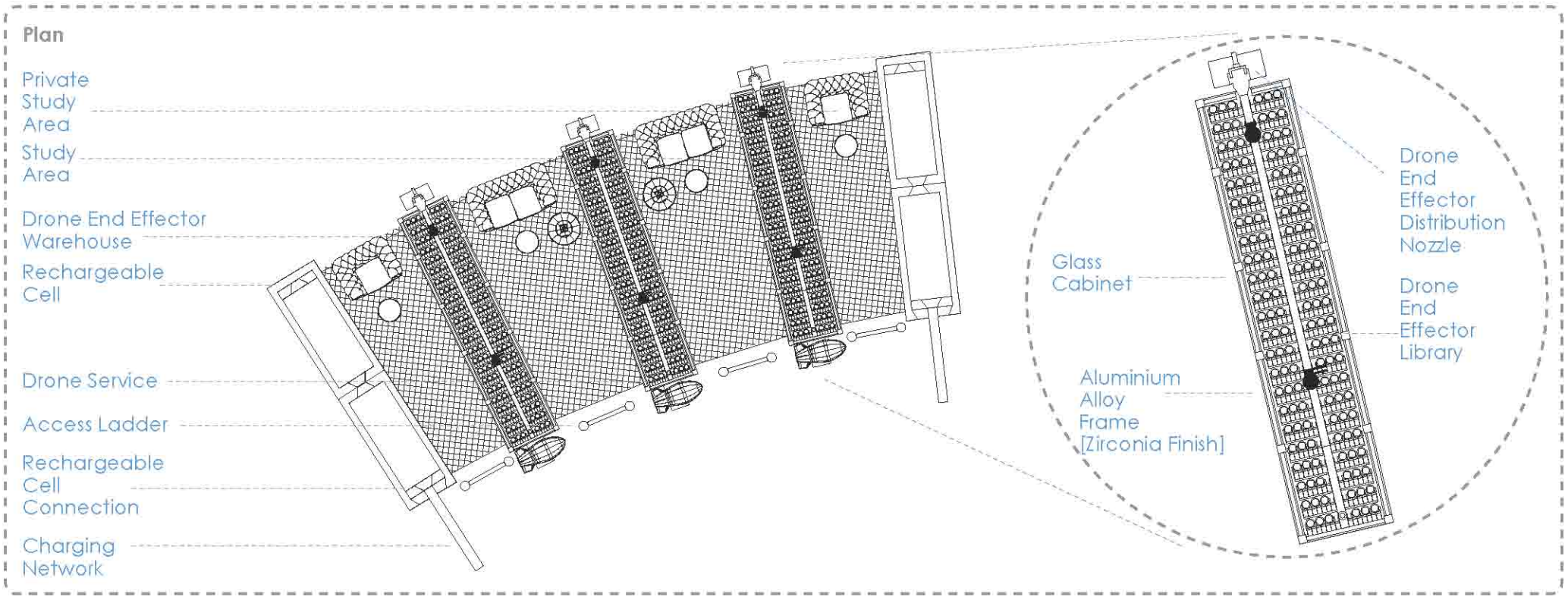
A dark, warm, dry environment is created passively by the excess heat emitted from the server towers and data centres used to create the local cloud network. The network must be maintained to an optimum functioning status as it provides fundamental control of the drone swarm who conduct a number of key roles around the building. This environment also lends itself perfectly to a potato granary. The unique aesthetic and micro climates of these blinking, animated, warm environments are inhabited on the upper levels in order to provide social break out space for researchers to take time out of their respective office modules, as well as privately hired terrace spaces for functions and events. Large sections of the facade are open along the terraces to provide breath taking panoramic views down the Thames.

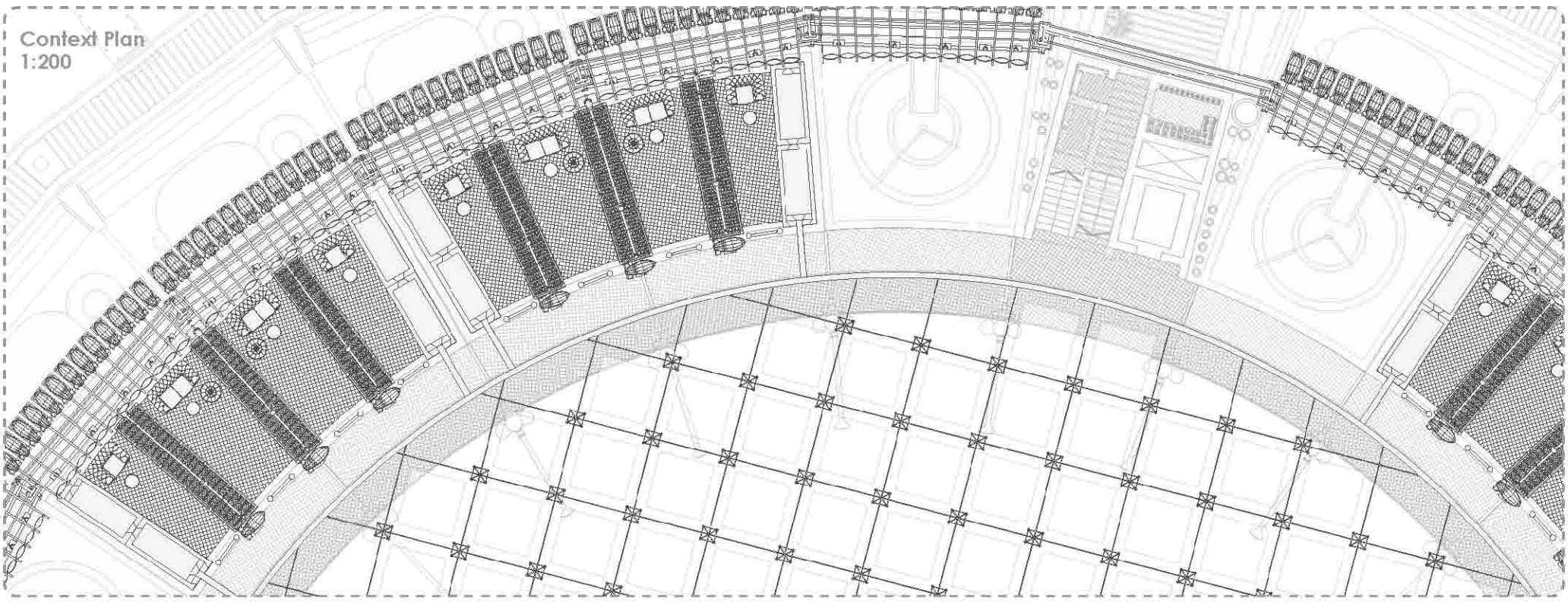
1F Plan



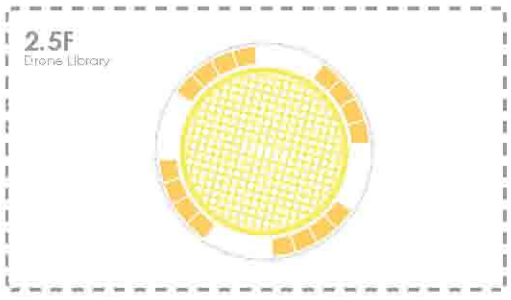
2F Plan







8	DRONE LIBRARY	8 x MODULES
USE 24 HRS	MAIN ACTIVITIES PRIVATE STUDY INDIVIDUAL STUDY AREAS LOCATED WITHIN THE DRONE END EFFECTOR WAREHOUSES	
VENTILATION STACK VENTILATION		73,042 M2 PER MODULE [GIA]
QUALITY PRIVATE, COMFORTABLE AND INTIMATE LIGHTING: INTIMATE_ ENTIRELY CUSTOMISABLE ACOUSTICS: WHITE NOISE EFFECT CAUSED BY EEL SOUP MIXERS BELOW		

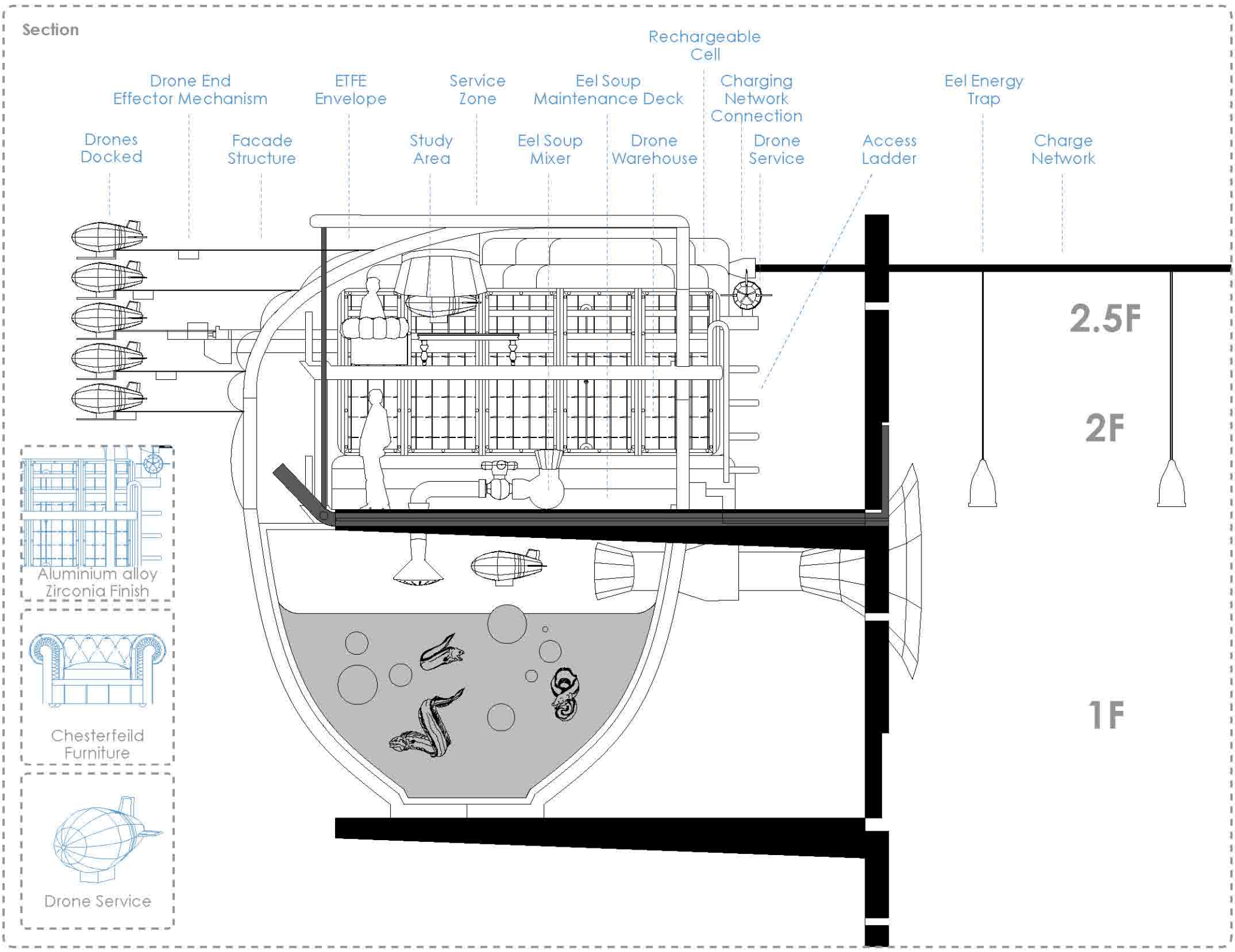


Proportion of GIA: 16/225 = **7%**

3.8[9]__LIBRARY

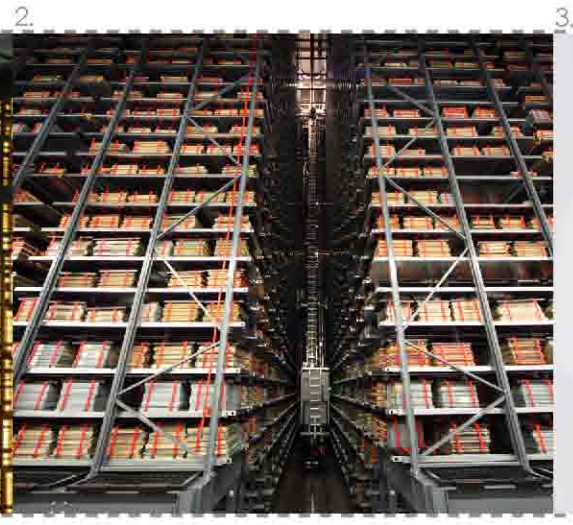
Room Schedule

Each isle of the Posthuman library provides opportunities for private study to scientists who wish to break out from their laboratory modules. The low hum of the drone warehouse cabinets creates a soothing white noise to aid in concentration, and provide a unique, animated theatrical experience as automated systems sort and pick various 'end effectors' ready for installation on drones who are docked on the gasometer armature. These cabinets store and maintain the end effectors [small mechanical arms designed for a particular drone roles].
Intimate lighting and privacy levels are controlled further through tailoring the re configurable drone facade, and private drone delivery services can be utilised easily to deliver materials and resources from laboratory spaces to the library study areas

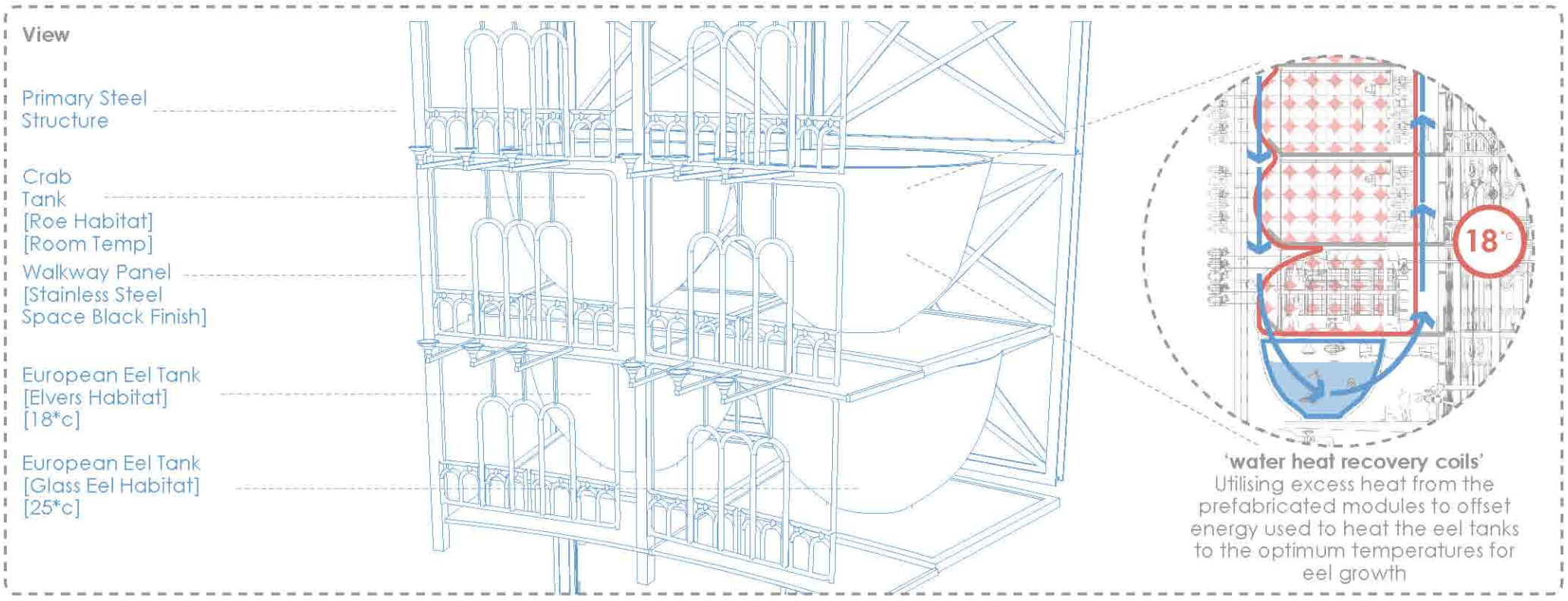

Section
Rechargeable Cell
Drone End Effector Mechanism
ETFE Envelope
Service Zone
Eel Soup Maintenance Deck
Charging Network Connection
Eel Energy Trap
Drones Docked
Facade Structure
Study Area
Eel Soup Mixer
Drone Warehouse
Drone Service
Access Ladder
Charge Network
2.5F
2F
1F
Aluminium alloy Zirconia Finish
Chesterfeild Furniture
Drone Service

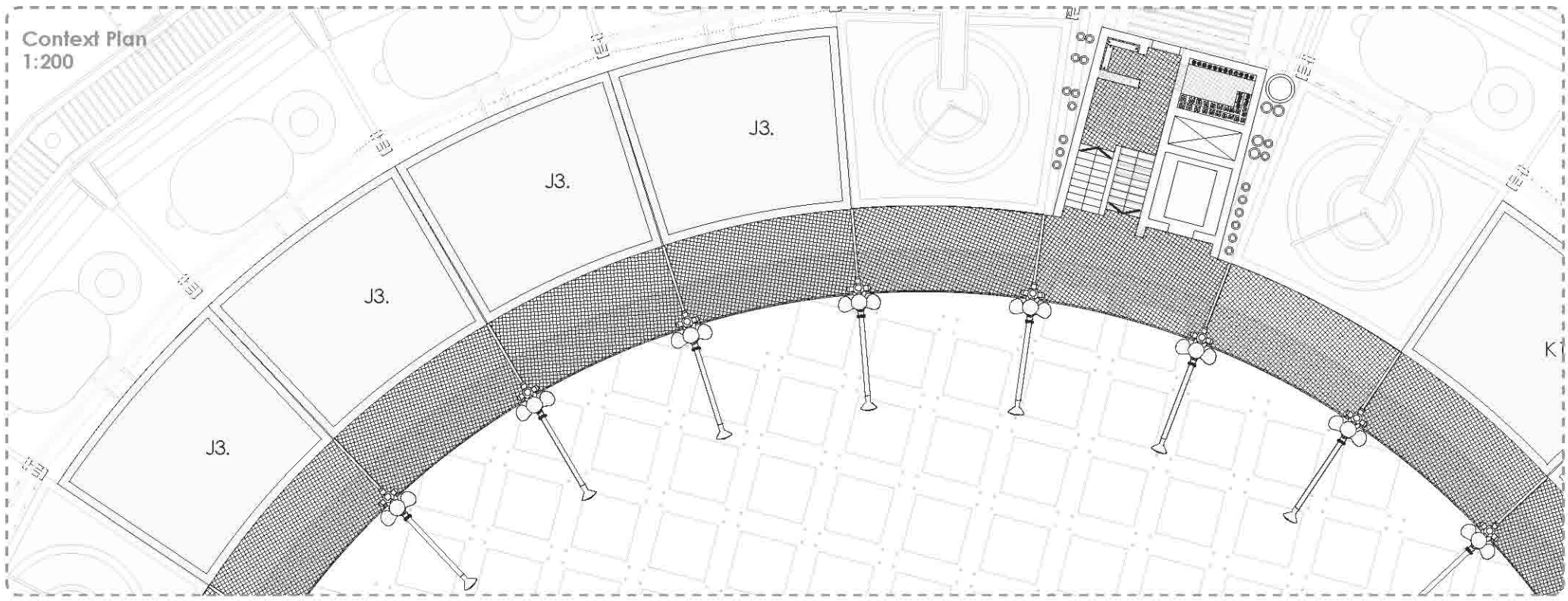
1.

2.



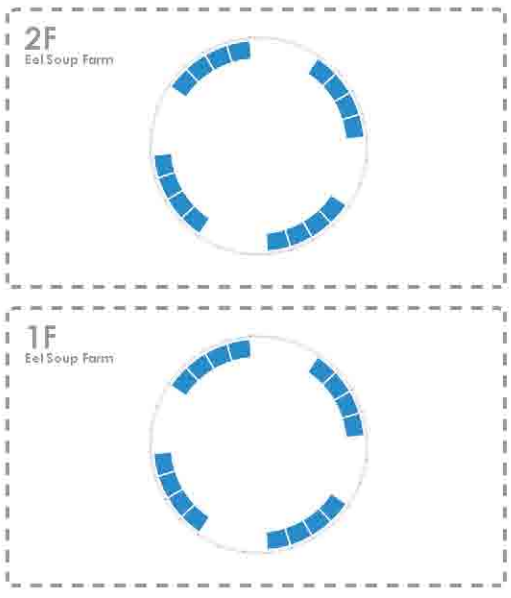
3.





9	EEL TANKS	16 x TANKS

USE 24 HRS	MAIN ACTIVITIES REARING EUROPEAN EELS GROWING BABY TROUT, CRABS AND SHRIMP TO FEED THE EUROPEAN EELS	
VENTILATION BIO SCRUBBER		47,138 M2 PER MODULE [GIA]
QUALITY HEAVY SET, SOLID, GLINTING REFLECTIVITY, WARM		

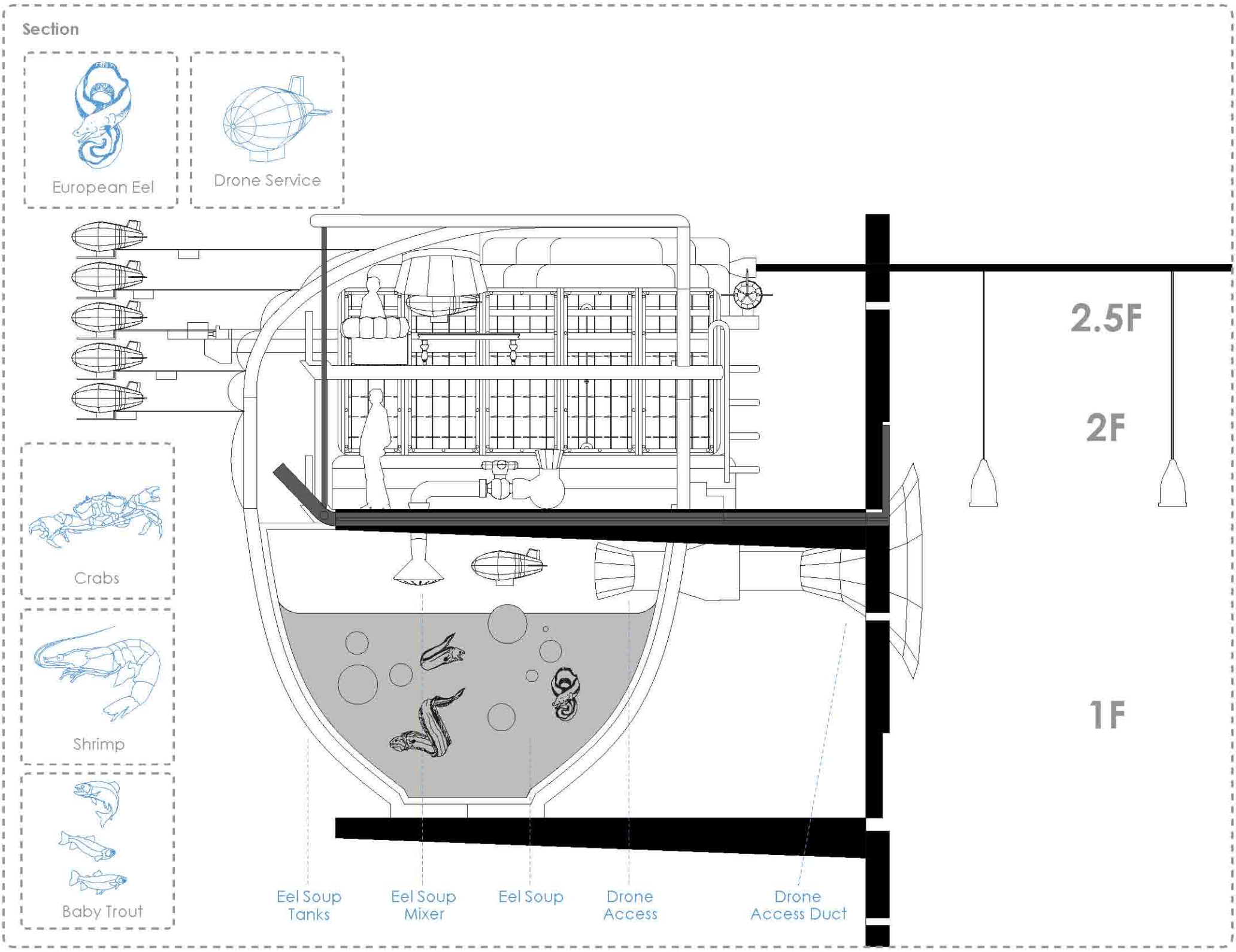


Proportion of GIA: 32/225 =14%

3.8 10 _ EEL TANKS

Room Schedule

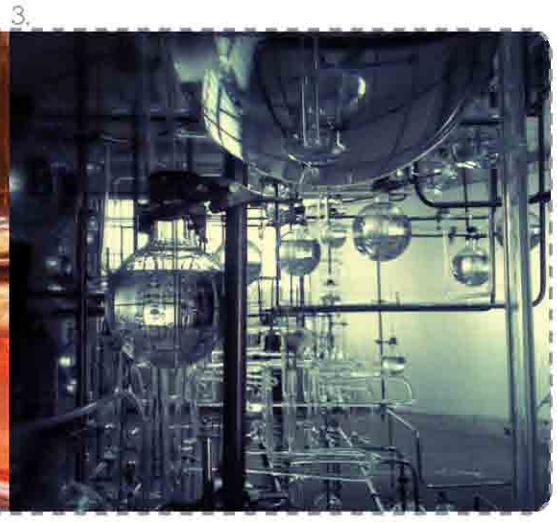
Eel tanks provide highly tailored eel rearing environments, finely tuned to optimum temperatures and mineral contents for optimum eel growth times at specific growth periods. This level of care is also taken to rear 'Eel fuel'; a combination of crab, shrimp and baby trout are farmed in bespoke tanks in order to provide nourishment to the European eel and electric eel population.


Section
European Eel
Drone Service
Crabs
Shrimp
Baby Trout
2.5F
2F
1F
Eel Soup Tanks
Eel Soup Mixer
Eel Soup
Drone Access
Drone Access Duct

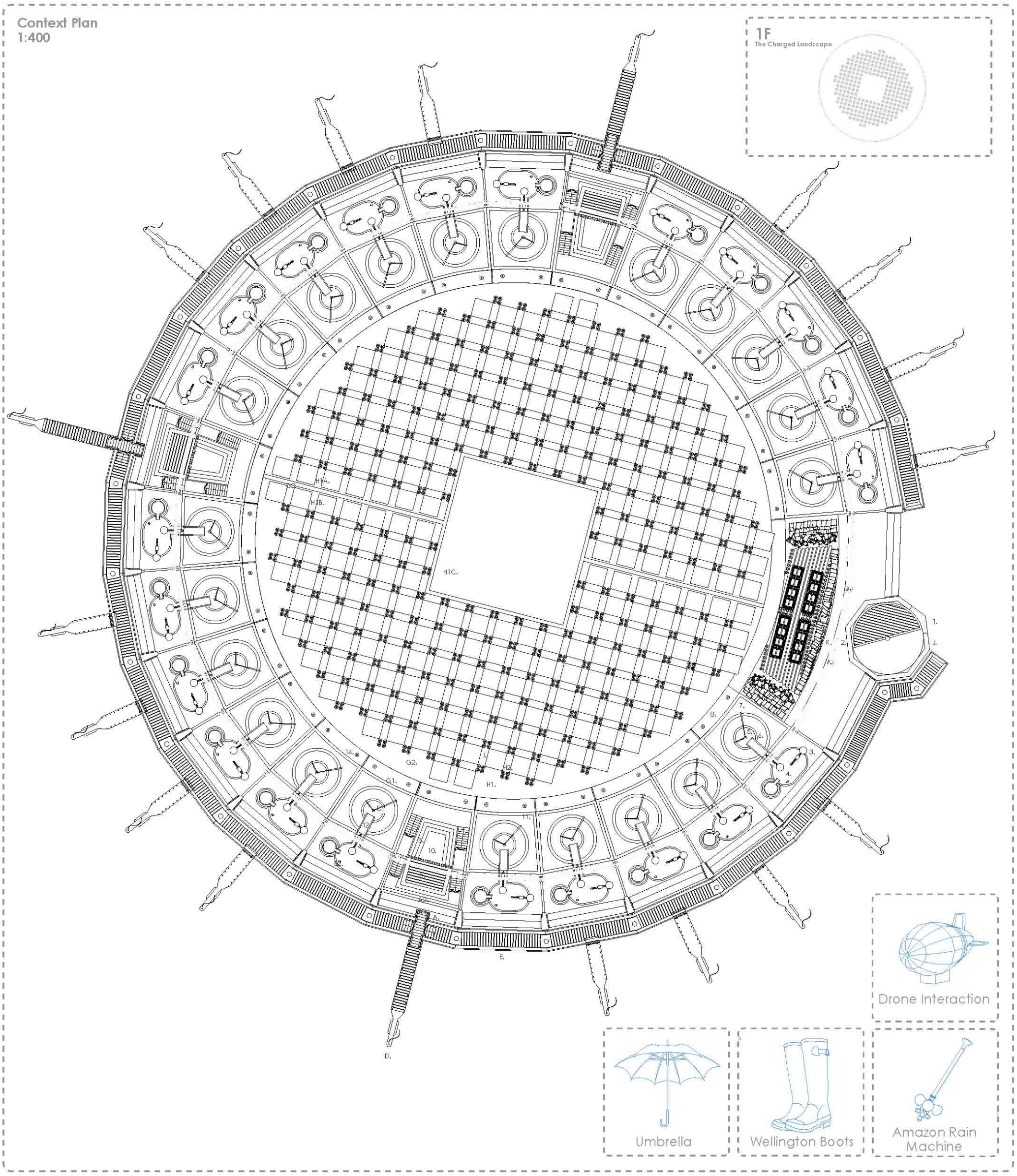
1.

2.

3.



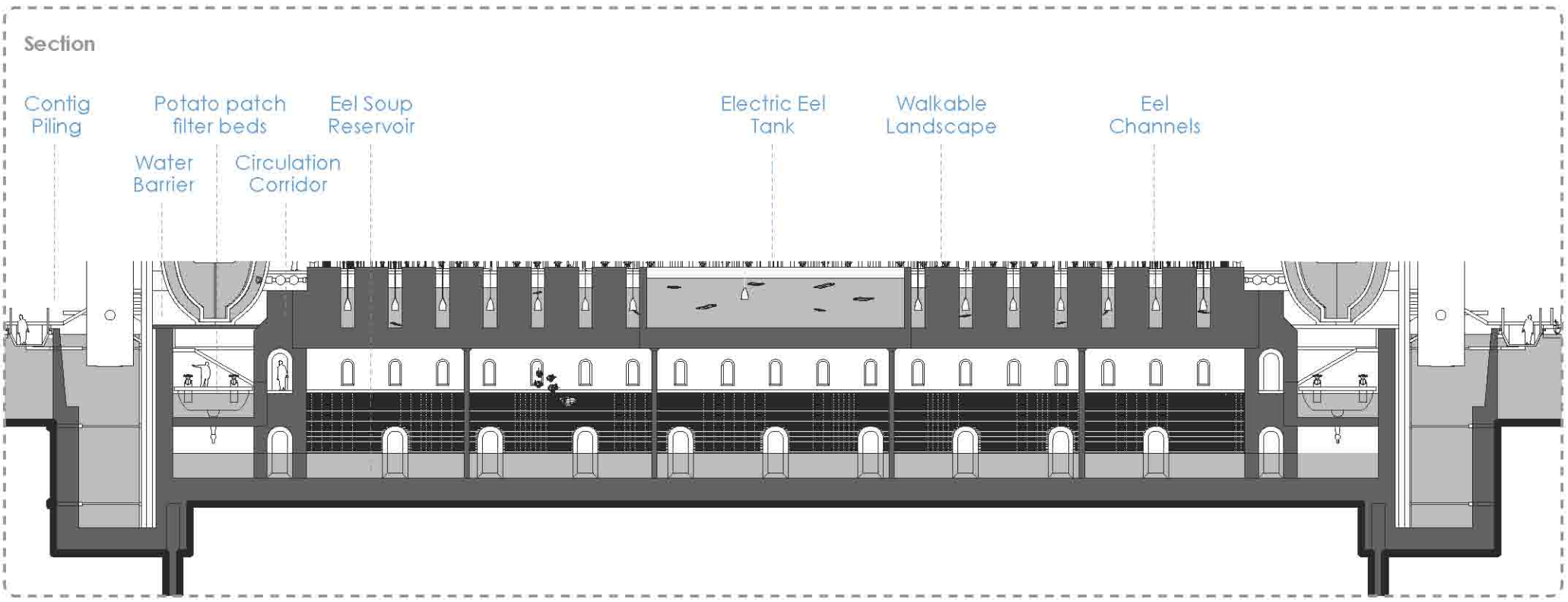
Context Plan
1:400



3.8 11 _ CHARGED LANDSCAPE

Room Schedule

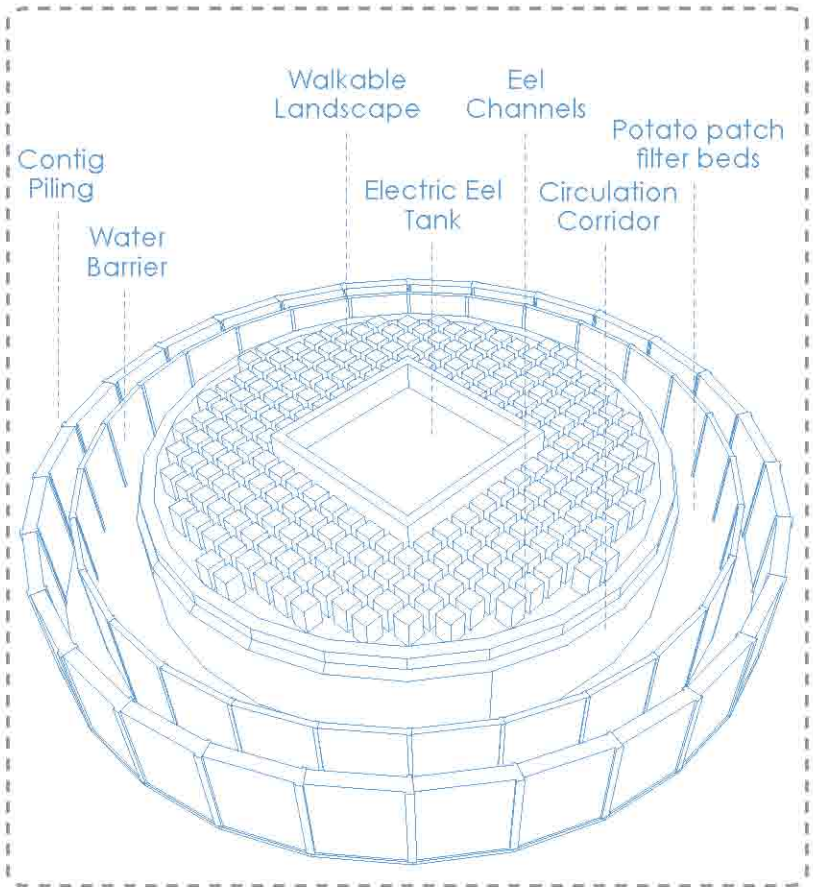
Members of the public visit the building in order to experience the sensory experience of full submersion in a man made cloud. Visitors collect yellow wellington boots and umbrellas on arrival, before stepping out on to the concrete 'charged landscape'. The 'Amazon Rain Machine' drenches the landscape intermittently, agitating the murky eel habitats below foot that splash and ripple at will. Eel traps rise up and down to the fishery above, glinting as their aluminium woven surfaces catch natural light that penetrates the dense cloud. The striking yellow drones cruise through the cloud, interacting with visitors and entertaining youngsters with their illuminating balloon anatomy and customisable programming



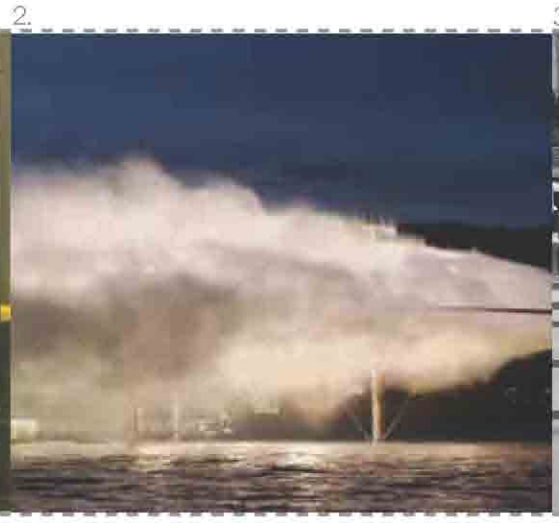
10	CHARGED LANDSCAPE	1 x FLOOR

USE 10 HRS	MAIN ACTIVITIES PUBLIC SPACE UNIQUE SENSORY EXPERIENCE _ BEING EMERGED WITHIN A MAN MADE CLOUD	
VENTILATION BIO SCRUBBER		2,542,152 M2 [GIA]

QUALITY UNIQUE SENSORY EXPERIENCE _ BEING EMERGED WITHIN A MAN MADE CLOUD
LIGHTING: BLURRED SHADOW
ACOUSTICS: MUFFLED
HUMIDITY: HIGH

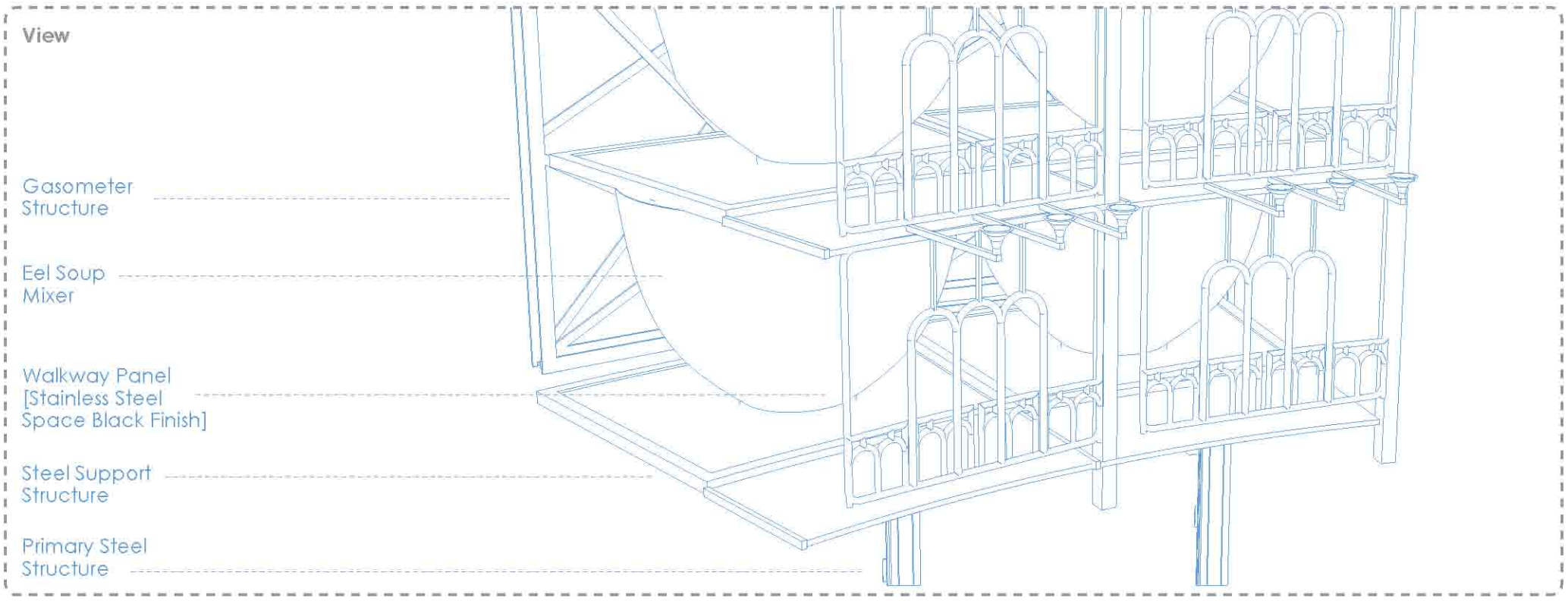


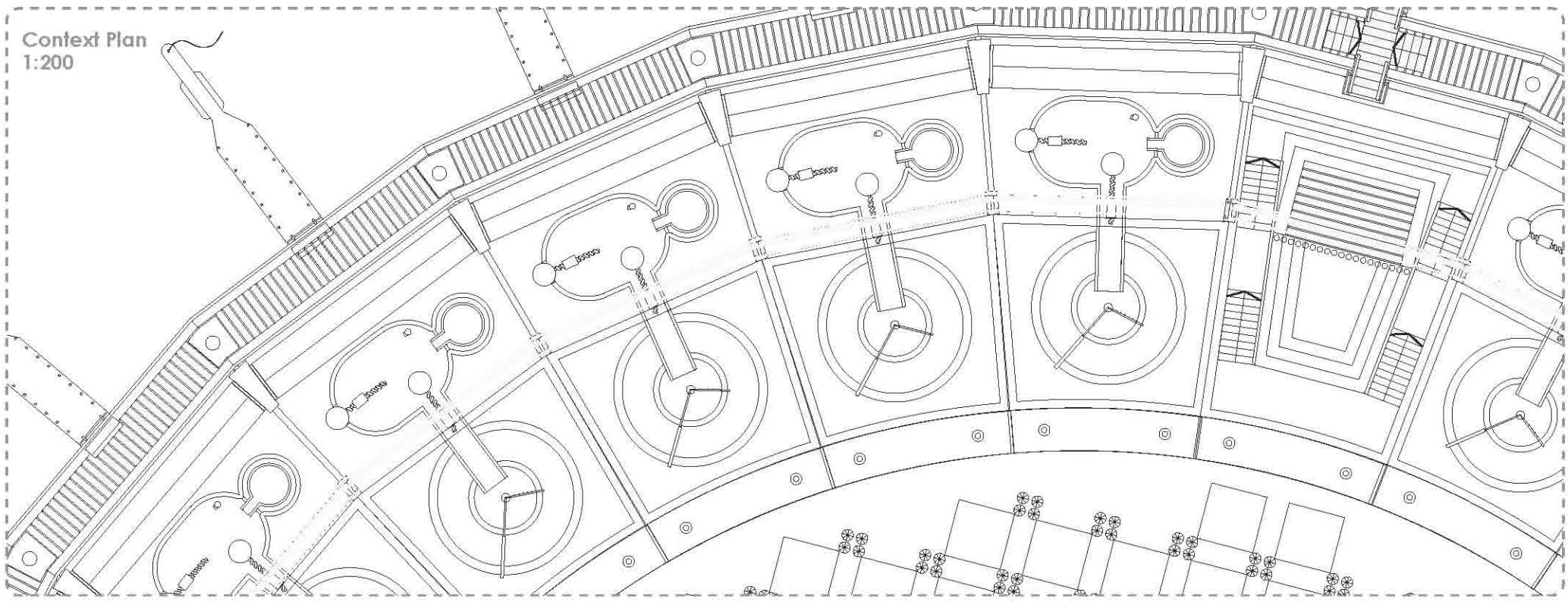
1.

2.

3.


A. Concrete shaft _ Tapered Detail
B. Amazon Rain Water Fountain Landscape
C. Existing Structure_ No1 Gasholder
D. Jetty Access_ Boat Mooring
E. Sunken Walkway_ Water Level
F. Walkway Ramp
G1. Charged Landscape_ Boundary Wall
G2. Charged Landscape_ Stepping Stones
G3. Charged Landscape_ Containment Wall
H1. Electric Eel Habitat
H1C. Electric Eel Habitat_ Nesting
H2. Electric Eel Channel
I. Eel Energy Trap
J. Lock Gate_ Filter Screen
K. Server Farm_ Potato Granary

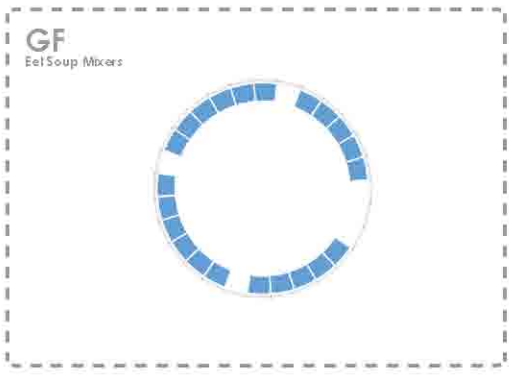
1. Water Pre Treatment_ Lock Gate_ Filter Screen
2. Water Screening_ Secondary Filter Screen
3. Water Storage_ Holding Tanks_ 3 Days_ Natural Biological Purification
4. Water PH Adjustment_ Carbonic Acid Chambres_ Alkaline Thames Water Neutralised
5. Water Coagulation + Flocculation_ Addition of Aluminium Sulphate_ Organic/ Inorganic matter Removed
6. Water Sedimentation Basin_ Low Water Velocity_ Settled Floc Removed From Bottom [5% of All Water]
7. Water Weir_ Catchment Basin_ Bubbles formed_ Dissolved Air Filtration
8. Water Collection Pipes_ For Amazon Rain Machine
10. Water Dispensing Pipe_ Amazon Rain Machine
11. Water Holding Tank_ Potatoe Patch Filter Beds





11	Eel Soup Mixers	22 x Mixers

Use 24 hrs	Main activities Water Filtration First stage of filtering Thames river water to create Eel soup
Ventilation Bio scrubber	47,138 m2 per module (GIA)
Quality Heavy set, solid, glinting reflectivity, warm	

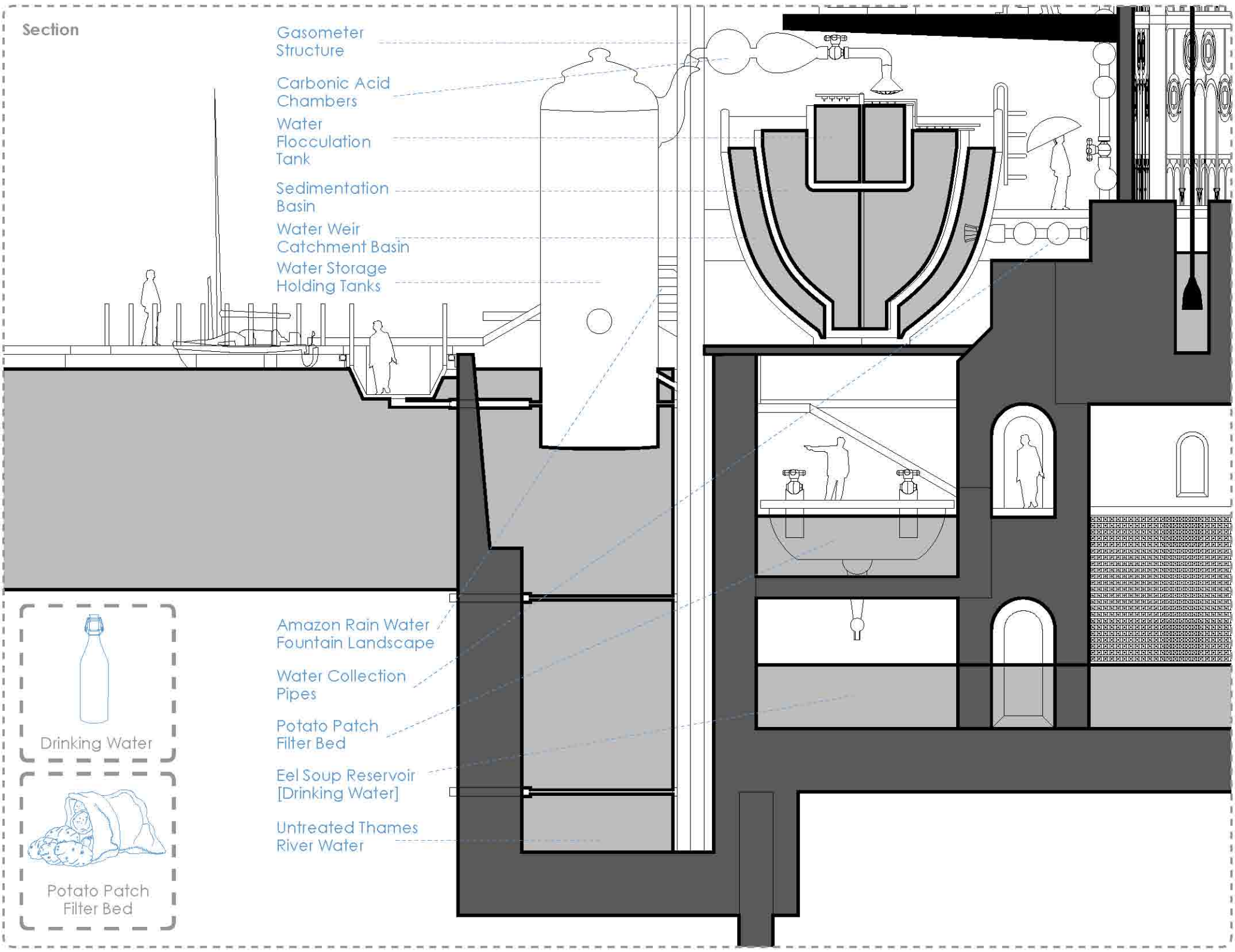


Proportion of GIA: 22/225 =10%

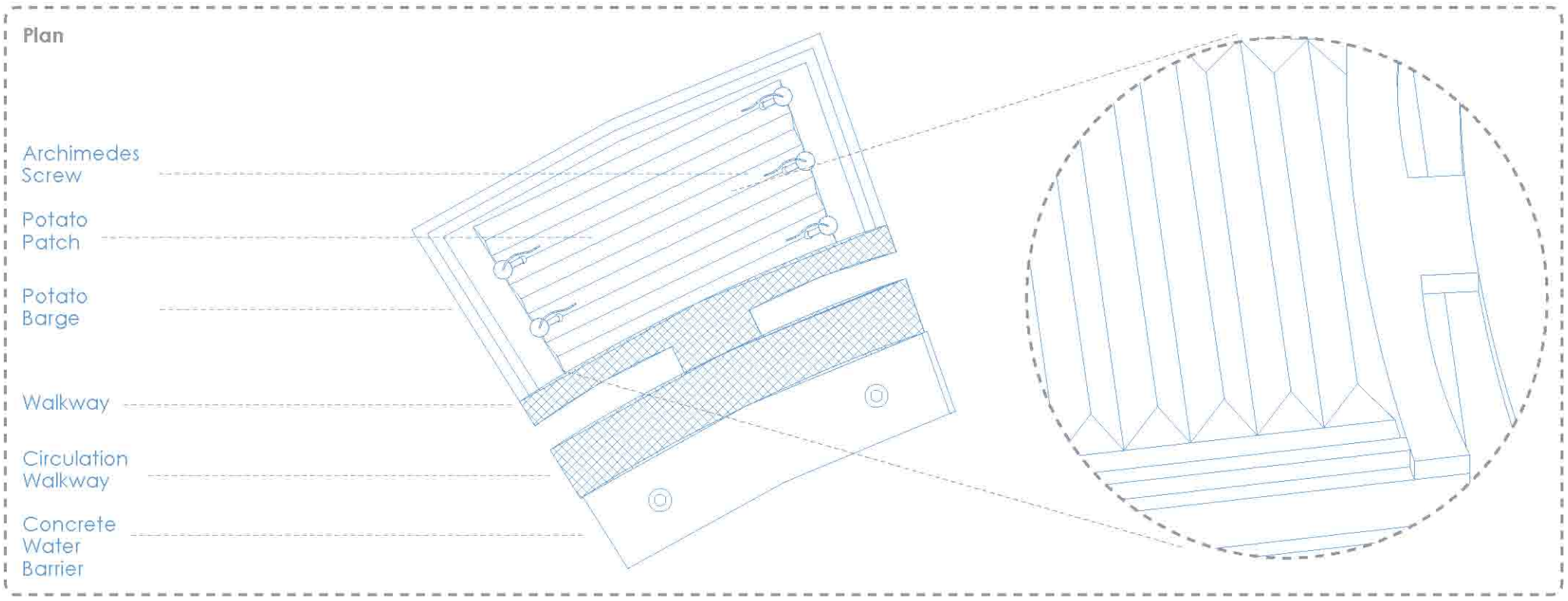
3.8 12 _ EEL SOUP

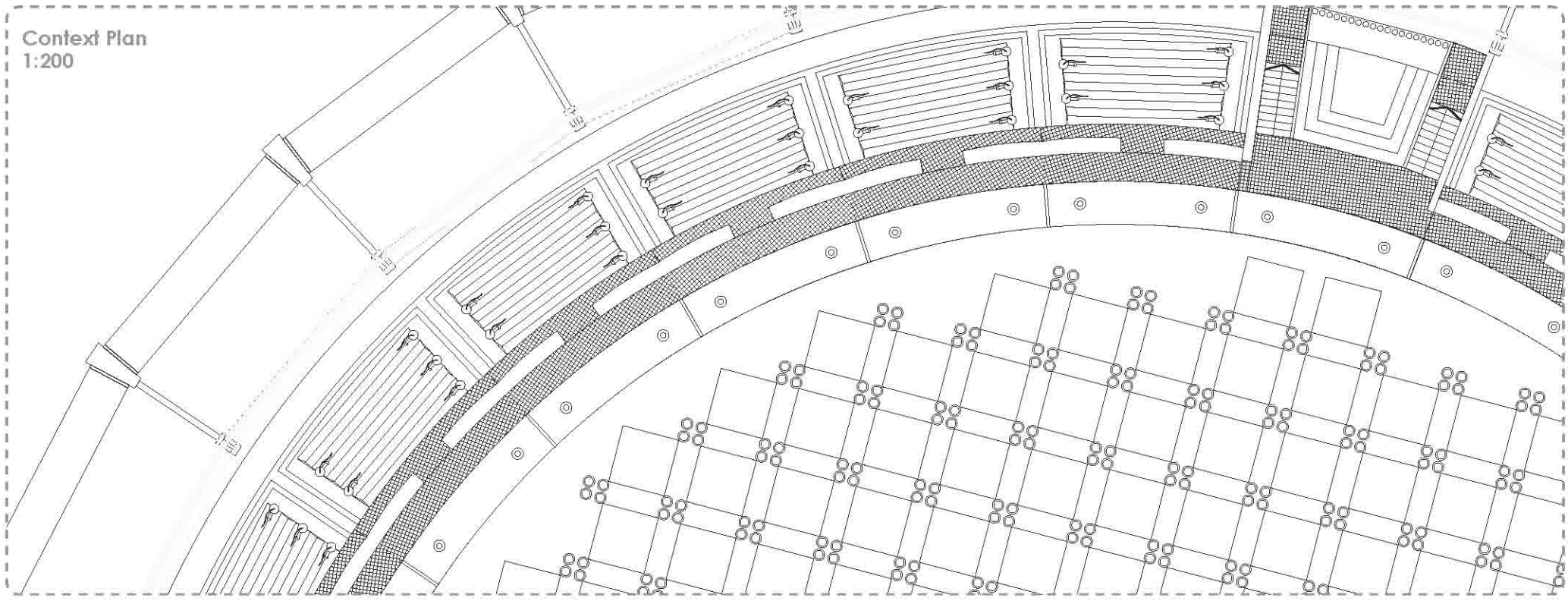
Room Schedule

Eel soup mixers prepare batches of mineral rich filtered Thames water ready for use in the Eel soup tanks. Varying degrees of filtration are achieved from rain water standard for the amazon rain machine to fully filtered drinking water. Bespoke mixes are carefully tuned by experts to provide unique nutritional plans to specific species of eels and eel fuels, as well as drinking water for the inhabitants of the R_evolution lab


Section
Gasometer Structure
Carbonic Acid Chambers
Water Flocculation Tank
Sedimentation Basin
Water Weir Catchment Basin
Water Storage Holding Tanks
Amazon Rain Water Fountain Landscape
Water Collection Pipes
Potato Patch Filter Bed
Eel Soup Reservoir [Drinking Water]
Untreated Thames River Water
Drinking Water
Potato Patch Filter Bed


1.
2.
3.

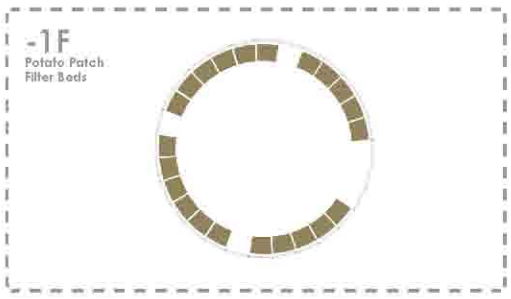




12	Potato Patch Filter Beds	22 x PATCHES

Use 24 hrs	Main activities water filtration graded sand filter beds form final stage of water filtration	
Ventilation stack ventilation		47,138 m2 per module [GIA]

Quality fresh and earthy, calming as the barge floats on Thames river water
Lighting: Low in order for potatoes to grow and remain non toxic
Acoustics: little absorption and echoey due to being surrounded by concrete

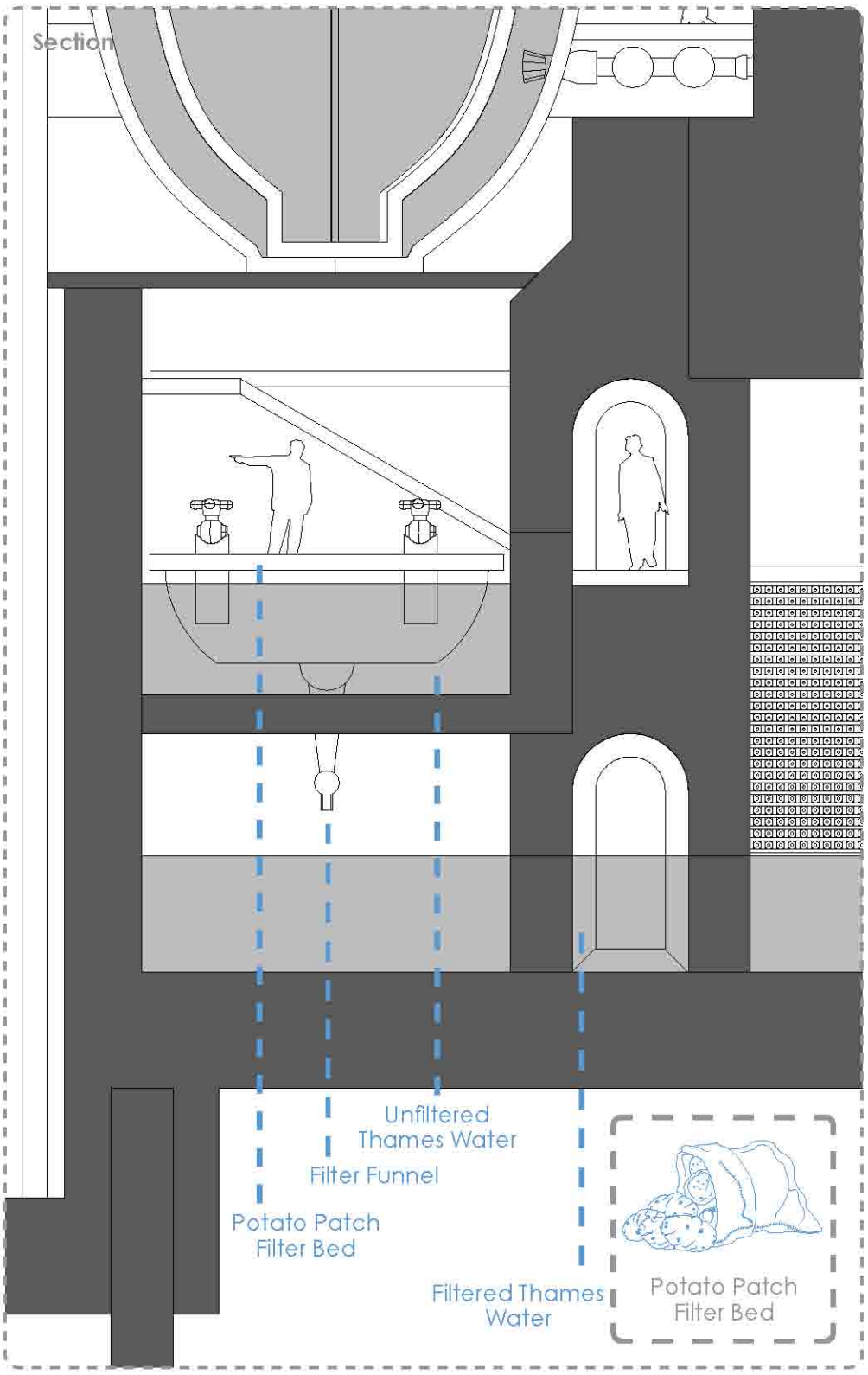


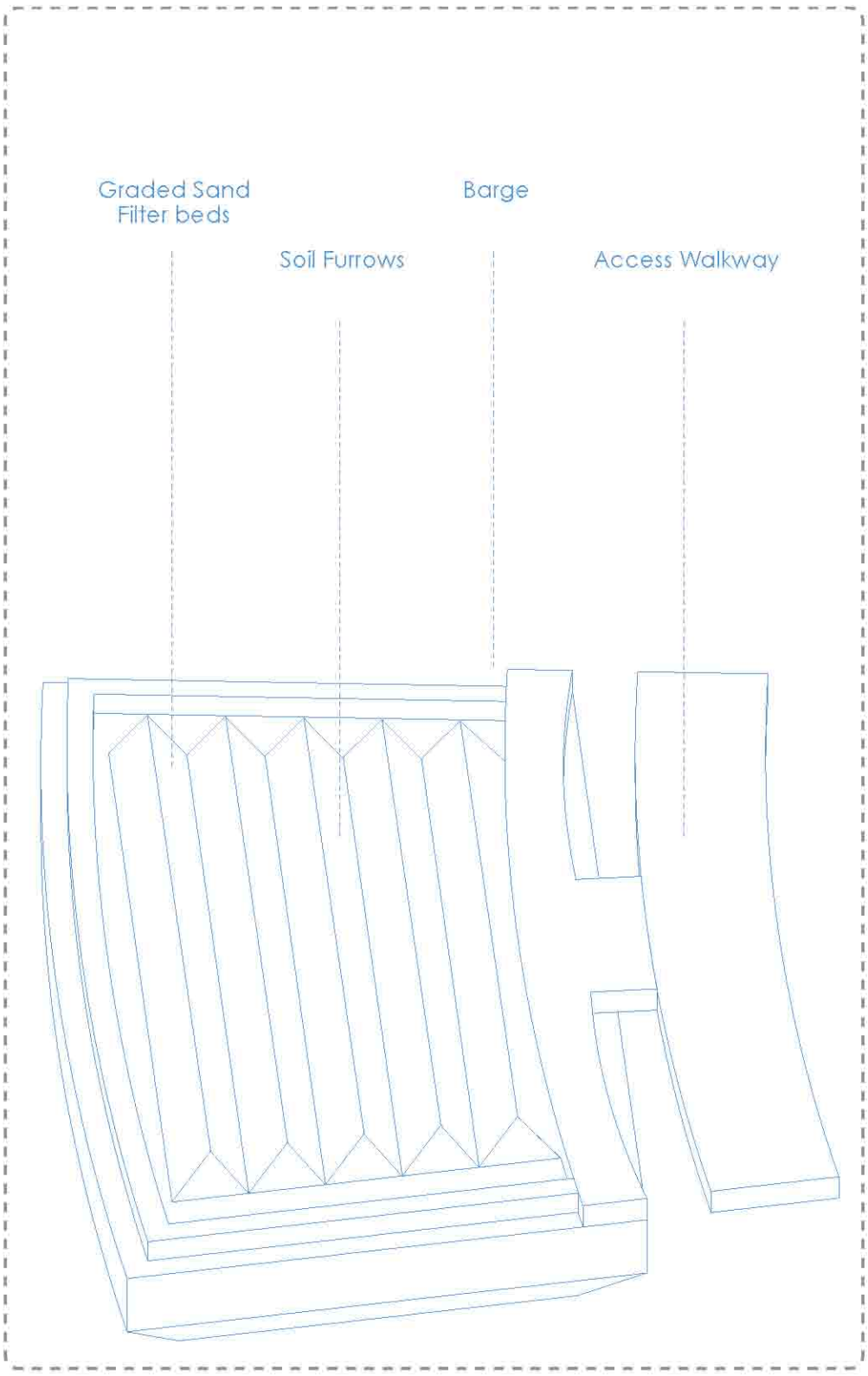
Proportion of GIA: 22/225 = **10%**

3.8 13 _POTATO PATCH

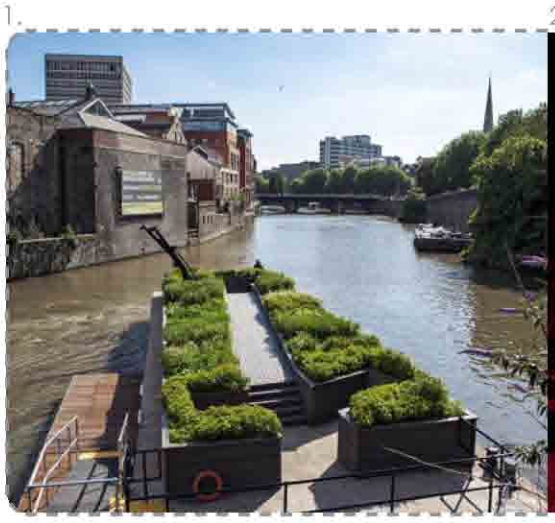
Room Schedule

The 'Potato Patch Filter Beds' consist of arable, furrowed soil on top of layers of graded sand filter beds. The mix is encased on floating barges that sit on the surface of a semi filtered Thames water reservoir. Eel soup mixers above provide a rain water standard water supply that is hydroponically supplied to the potato patch using automated Archimedes screws. Used 'Earl Grey tea bags' provide the secret ingredient that gives the entirely organic Potatoes their distinct taste for use in the 'Eel CAN_teens' most famous dish of 'Eels and mash'. Tubers are buried in around 1 foot of soil which has a high concentration of sand to allow high volumes of water to pass through the graded sand filter beds and not 'puddle', which will in turn rot the vegetable. This process filters the Thames river water to drinking water standard and is stored in the water reservoir in the basement of the building ready to be bottled and served to guests of the CAN_teen. Ornamental potato 'Solanum' plants are also harvested for use as centrepieces in the CAN_teen


Section
Unfiltered
Thames Water
Filter Funnel
Potato Patch
Filter Bed
Filtered Thames
Water
Potato Patch
Filter Bed


Graded Sand
Filter beds
Barge
Soil Furrows
Access Walkway

1.



2.

3.