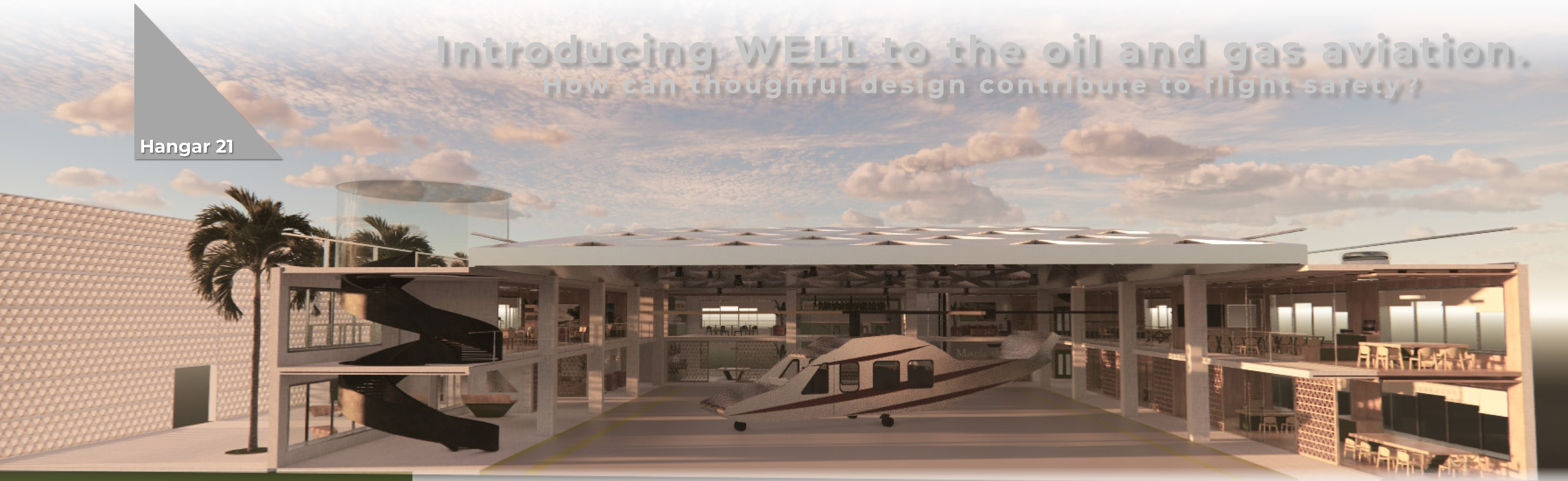
Introducing WELL to the oil and gas aviation.
How can thoughtful design contribute to flight safety?



PROBLEM

80%

DID YOU KNOW THAT THE HUMAN FACTOR CAUSES 80% OF AVIATION ACCIDENTS?

WHAT CAN BE DONE?

WELLBEING

COMFORT

FUNCTION

OPPORTUNITY
TO MINIMIZE STRESS WHILE AT THE HANGAR CREATING A HEALTHIER ENVIRONMENT

LIT REVIEW
HIGHLIGHTS

Human factor
Humans are at the center of any aviation analysis, being the most valuable but also the most vulnerable element of flight safety contributors.

Stress
Pilots are exposed to acute stress daily. Stress directly impacts people's lives and health. Stress is one of the main contributors that affect the human factor.

Existing Discussion
Little to zero research has been done addressing the needs of offshore aviation workers.

CASE STUDY + PERSONAL OBSERVATION
HIGHLIGHTS

Separation of spaces

Attention to specific needs

Thermal comfort

Quietness

Access to healthy food

Feeling valued

CONCEPT STATEMENT

This project is focused on making **revolutionary changes** to the atmosphere of an aviation hangar with the intention to **minimize stress** by surrounding and nurturing the users with the best environment possible before and after the flight while waiting, planning, briefing to give them comfort and make their lives easier and more functional. The concept that will be used to address the project's needs is the **triangle interaction between humans, machines, and the environment - the triad that rules flight safety.**

The triangle is also present in aviation in many diverse forms and shapes, such as in helidecks, wings, rotors scissor links, and can be interpreted as a **modern shape of an airfoil.**

Biophilia - bringing the outdoor connection indicated in the research will be present in colors, materiality, and natural vegetation, particularly in **natural light and natural ventilation, the two biggest challenges the building and the location have.** As part of the lighting and ventilation needs, but also to celebrate Brazilian culture, ***cobogo*** - a typical Brazilian façade element made from ceramics or concrete that allows the entrance of sunlight, regulation of visual access, and natural ventilation used in construction openings - will be introduced in this project.

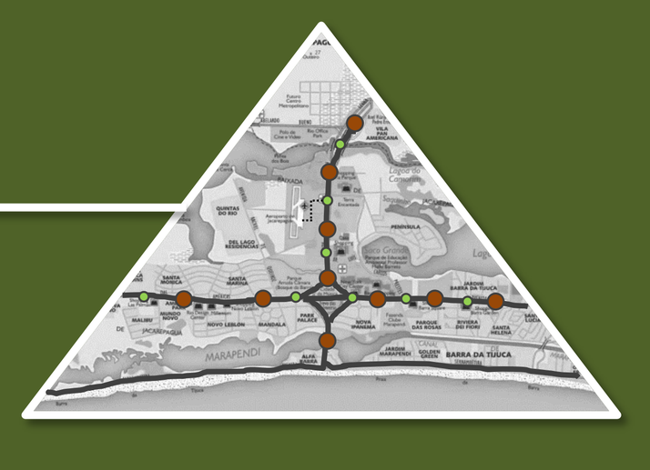
The **colors chosen f**or the project are inspired by the **Giant Water Lilly** (*Victoria Amazonica*), a typical plant of the Amazon Forest. The Giant Water Lilly serves as a boat for small animals, bringing the **idea of a life raft** to the hangar in the form of color. The intention is to create a sense of **comfort and safety** for a population that spends hours flying on top of the water, often without surveillance, being **water ditching one of their most significant stressors.**

SITE ANALYSIS

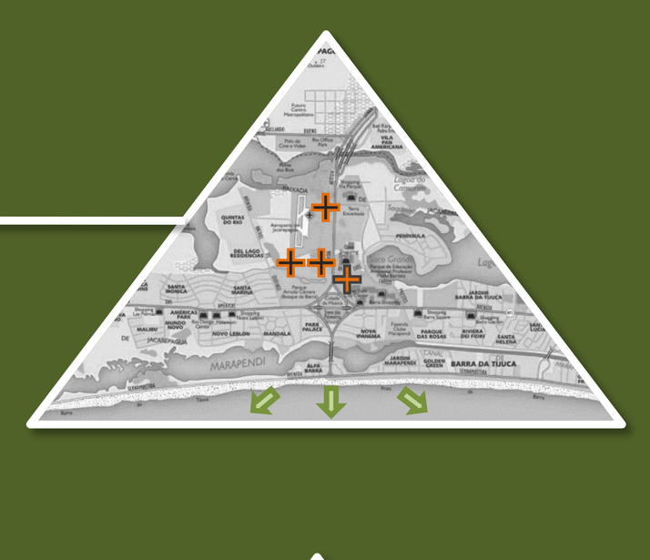
Jacarepagua Airport
Rio de Janeiro
Brazil

Hangar 21
Jacarepaguá Airport

Accessibility
- Noise + Traffic
- Public Transportation
- Major Roads



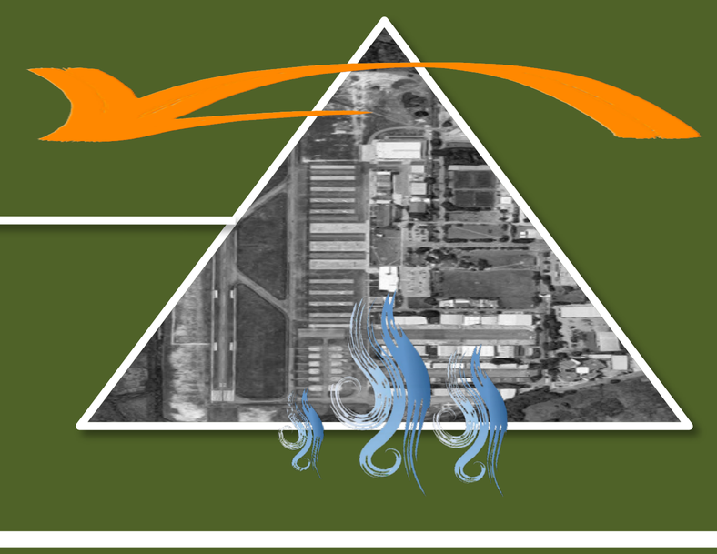
Offshore + Medevac
- Private Hospital
- Public Hospital
- Oil Prospection



Airdrome

22° 59' 15" S
43° 22' 12" W

Runway 03 | 21



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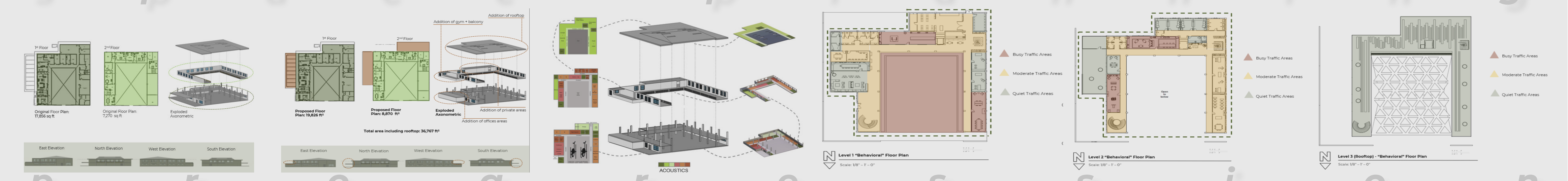


p r o g r e s s i o n

STORAGE
On demand storage varying from tail rotor, engines, to simple tools and AA batteries.

AVIONICS STORAGE
Temperature control room that stores radios, and naviagtion instruments that require copper grounding tables to handle the avionic equipments.

FLIGHT DISPATCH
The central nervous system of the hangar needed to overview to entire operation and for that reason it is located in the middle of the hangar.

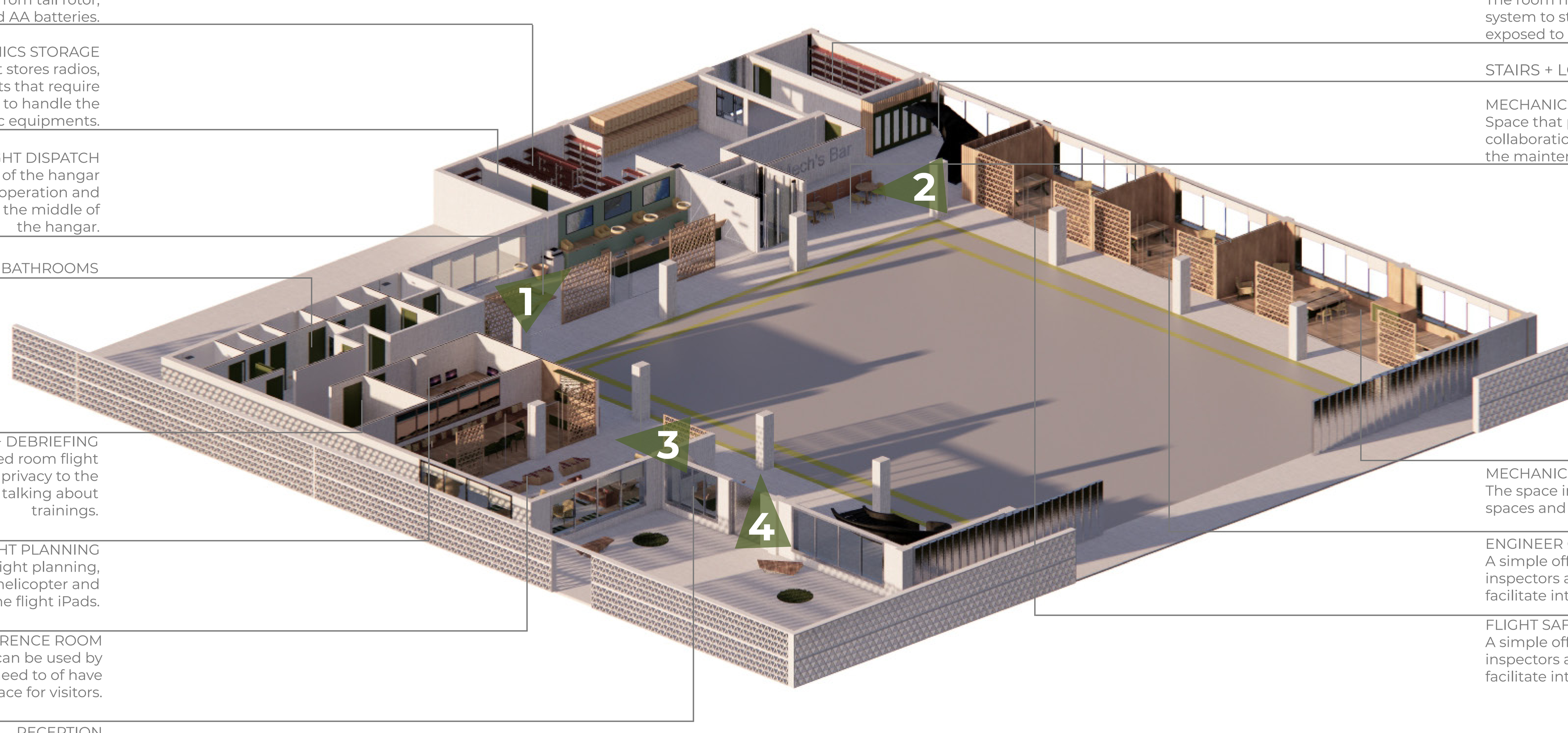
MALE + FEMALE BATHROOMS

BRIEFING + DEBRIEFING
A quiet room, separated room flight planning and dispatch to give privacy to the flight crew, in particular, when talking about trainings.

FLIGHT PLANNING
A quiet room dedicated to flight planning, with one computer per helicopter and docking stations for the flight iPads.

LOUNGE + CONFERENCE ROOM
A multi-use space that can be used by everyone but addresses the need to of have an appropriate space for visitors.

RECEPTION



DARK EQUIPMENT ROOM
The room has a motion sensor lightning system to store equipment that cannot be exposed to light, for example: tires + o-rings.

STAIRS + LOCKERS

MECHANICS' BAR
Space that promotes interaction and collaboration between the flight crew with the maintenance.

MECHANICS + INSPECTORS OFFICE
The space includes a tech desk, meetings spaces and a lounge.

ENGINEER OFFICE
A simple office adjacent to the mechanics, inspectors and Flight Safety Officer to facilitate interaction.

FLIGHT SAFETY OFFICER OFFICE
A simple office adjacent to the mechanics, inspectors and engineer to facilitate interaction.


1
First Floor - Flight Dispatch

2
First Floor - Mechanic's Bar


3
First Floor - Lounge + Conference

4
First Floor - Reception + Entrance View

MEDEVAC BEDROOMS
Located in a quiet zone with acoustic treatment, the bedrooms give comfort for pilots that are at medevac field standby.

KITCHEN
Located on the second floor to encourage vertical movement, the well-equipped kitchen offers individual and communal seating arrangements.

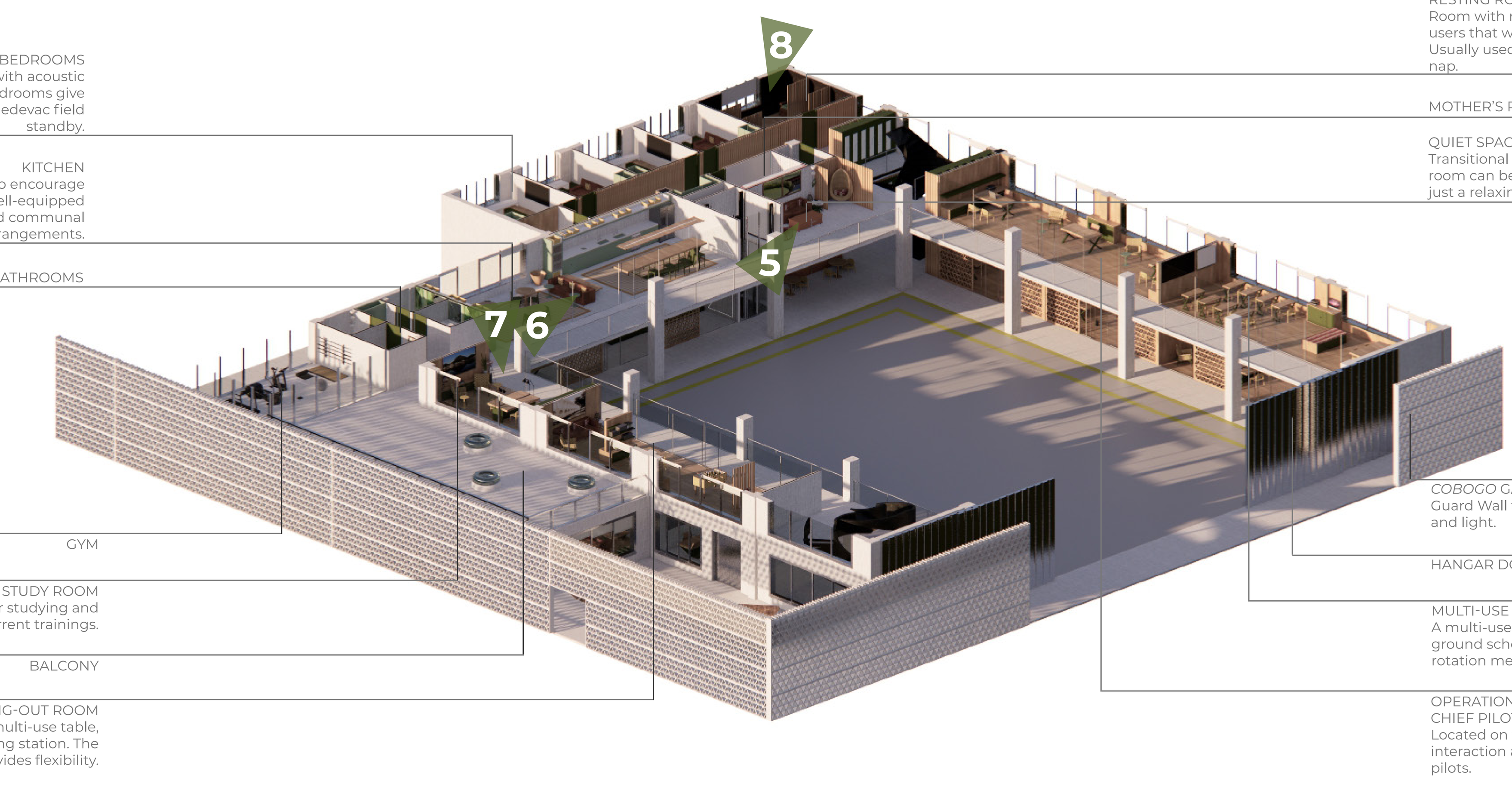
MALE + FEMALE BATHROOMS

GYM

STUDY ROOM
Quiet space dedicated for studying and completing online recurrent trainings.

BALCONY

PILOTS' HANG-OUT ROOM
Interactive room with TV, multi-use table, fussball table, and gaming station. The separation of the spaces provides flexibility.



RESTING ROOM
Room with reclining chairs dedicated to the users that want to stay quiet and in the dark. Usually used by transport pilots in need of a nap.

MOTHER'S ROOM

QUIET SPACE
Transitional moment to the quiet zone. The room can be used for private phone calls, or just a relaxing moment reading a book.

COBOGO GARD WALL
Guard Wall that increases natural ventilation and light.

HANGAR DOOR

MULTI-USE - TRAINING + MEETING ROOM
A multi-use room that can be used for ground school, recurrent training sessions or rotation meetings.

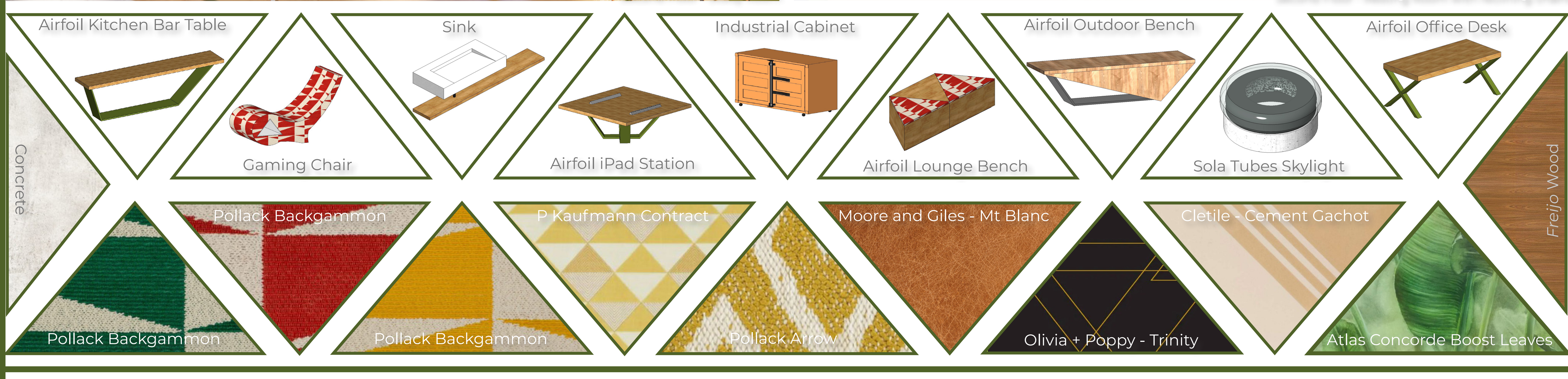
OPERATIONAL MANAGER +
CHIEF PILOT OFFICE
Located on the second floor to tpomote interaction and communication with the pilots.


5
Second Floor - Quiet Space


6
Second Floor - Kitchen


7
Second Floor - Study Room


8
Second Floor - Resting Room with reclining chairs



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