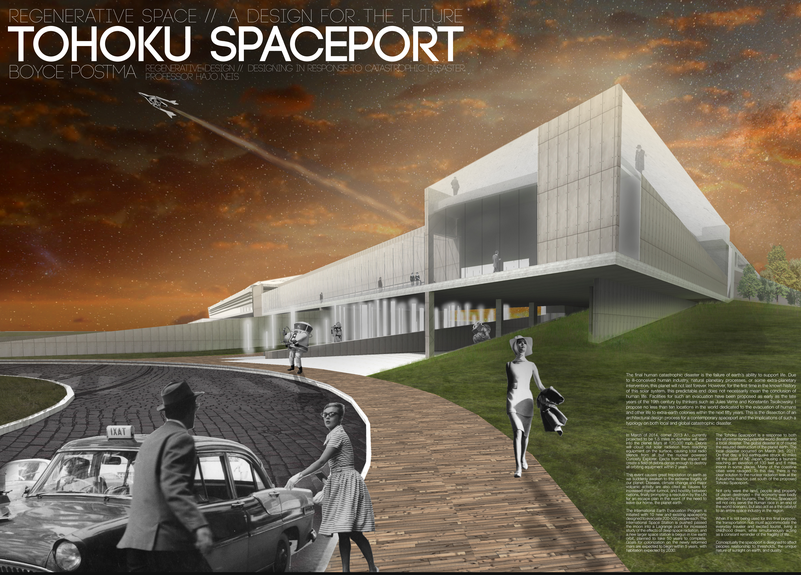
REGENERATIVE SPACE // A DESIGN FOR THE FUTURE

TOHOKU SPACEPORT

BOYCE POSTMA
MASTER ARCHITECTURE STUDIO: DESIGNING IN RESPONSE TO CATASTROPHIC DISASTER
PROFESSOR RAJO NEIS



The final human catastrophic disaster is the failure of earth's ability to support life. Due to ill-conceived human activities, natural planetary processes, or some extra-planetary event, the environment becomes hostile to life. Although the probability of the occurrence of this type, seemingly, improbable and dire, not necessarily means the extinction of human life. Facilities for such an evacuation have been proposed as early as the late years of the 19th century by thinkers such as Jules Verne and Konstantin Tsiolkovsky. I propose no less than ten locations in the world dedicated to the evacuation of humans off-world. This thesis explores the relationship between the human condition and architectural design principles for a contemporary spaceport and the implications of such a typology on both local and global catastrophic disaster.

On March 11 2011, Japan's Tohoku region was struck by a 9.0 magnitude earthquake followed by a tsunami. The earthquake, which was the most powerful earthquake in Japan's recorded history, caused the tsunami to overwhelm the coastal defenses and inundate the Tohoku region, causing total destruction. The Tohoku Spaceport is a response to such a catastrophic disaster, creating a human evacuation facility capable of accommodating approximately 10,000 people. Tohoku Spaceport is located approximately 100 km south of the epicenter of the Tohoku earthquake and tsunami, and south of the proposed Tohoku Spaceport, Sendai Airport.

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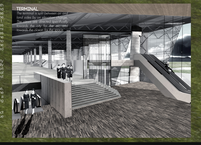
ENTRANCE

LANDSIDE HALL

MEDITATIVE SPACE



TERMINAL

ENTRANCE AND TERMINAL

DEPARTURE

ASCENSION

DEPARTURE

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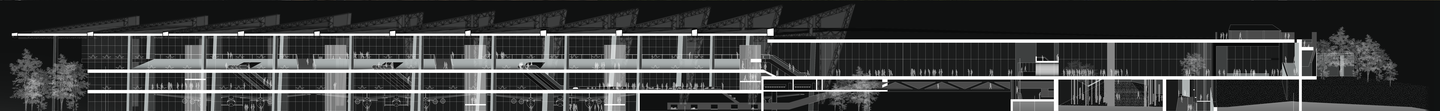

TERMINAL CAFE
A casual dining, coffee shop located in a daily overlooking a small lowland area and the ocean.

AIR TRAVELER ESCALATORS
Air travelers descend from the departure level to the waiting level down to the arrivals and departures level.

SPACE TRAVELER ELEVATORS
Space travelers descend from the top waiting floor down to the departure and arrival floor.

BAGGAGE PICKUP
Arrival baggage is delivered on carts of eight plates. Pickup is on-site triggered based on flight for recognition.

BAGGAGE SORTING ROOM
Arrival baggage is sorted by flight and being carted to the planes and trucks.

LEVEL SPLIT
Departures are at the level slightly up and to the left, arrival passengers are moved up and to the right.

SECURITY
Departure waiting area has an "open layout" allowing the baggage screening, for personnel circulation.

BAGGAGE SCREENING
In this corner before moving across the round to the waiting room.

ELEVATORS TO SECURITY
Elevators are located at the end of the and move straight to the terminal through the elevators to the right.

RAMPS TO MEDITATIVE SPACE
Ramps are located at the end of the physically, lands-aspect covered the 20' to the roof.

SECTION
1" = 1'-0"

MEDITATIVE SPACE
A place for the mind, body, and spirit. A meditative space for visitors and staff of the world's airports.

SHINKANSEN
Shinkansen is a high-speed rail line from Tokyo Omiyaki, under the landside hall.

LIGHT GARDEN
Light gardens are located throughout the light gardens, a representation of the actual sites origin.

BAGGAGE CONVEYERS
Baggage conveyers are located throughout the spaceports under the passenger concourses.

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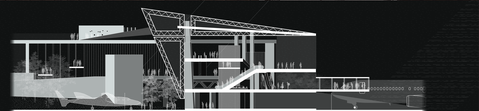

SPACEPLANE BOARDING
Spaceplane boarding occurs on the tarmac directly.

CIRCULATION CORE
Circulation is located in the center, to allow sweeping views through the earth.

SKYBRIDGE
Skybridge is for debarking for all air travelers.

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