Problem statement:

Despite the low footfall and traffic at the plane spotting pavilion located at Changi Business Park, the pavilion area is left abandoned most of the time. This situation could be caused by multiple factors. These include presence of trees that block the view of the landing planes, and the lack of notable features in the site other than a few benches and rubbish bins.
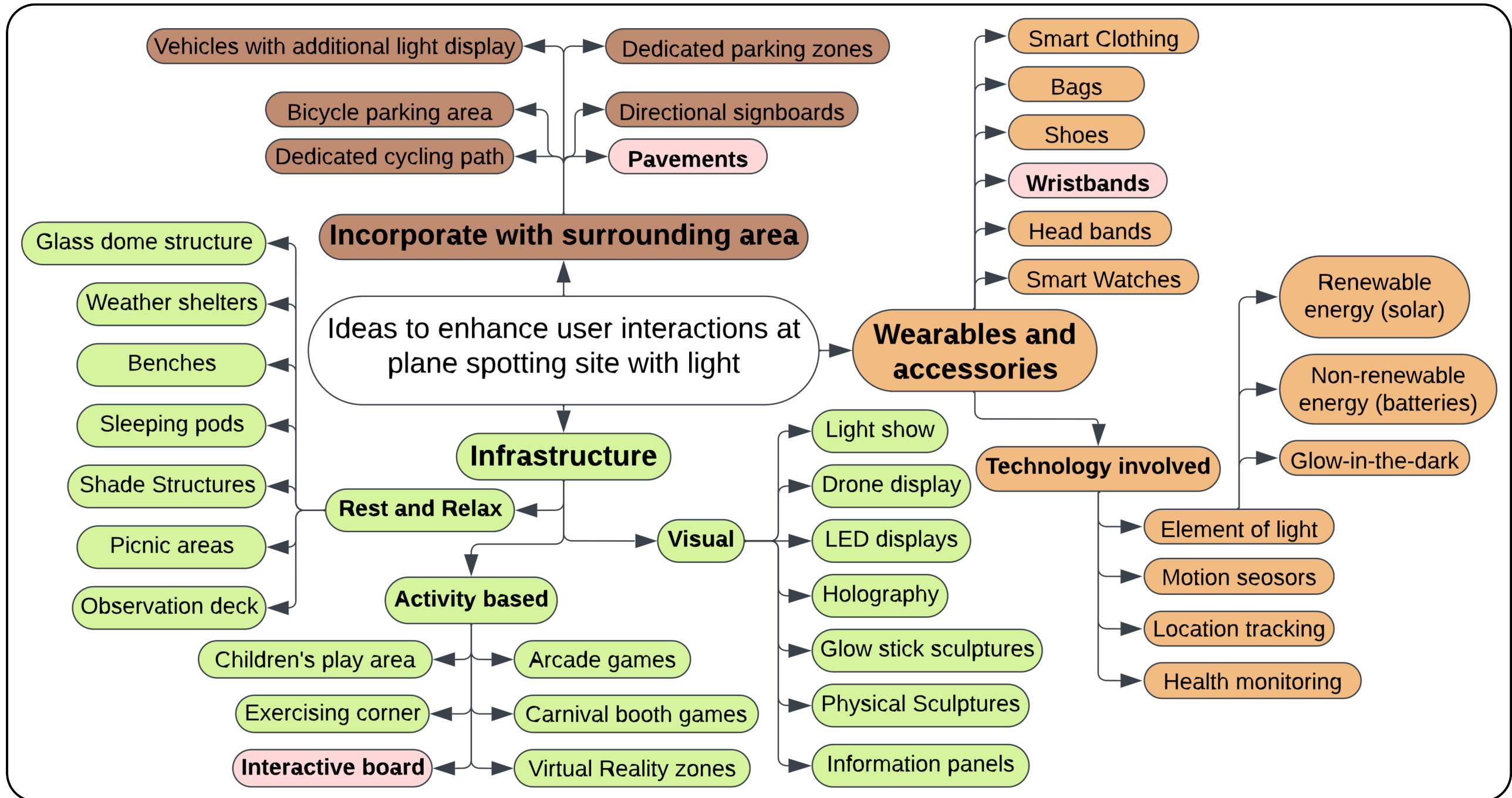
With the current state of the site in mind, I decided that there are regions of untapped potential in encouraging more visitor footfall and enhancing the interactions between visitors of the site through the usage of light.

Thus, my problem statement would be 'how can we enhance the interactions between all visitors of the plane spotting site such that the footfall to the pavilion would improve?'

Design Goals

There are 2 background contexts to account for this project: URA's vision of the Changi Region as an area of innovation for aviation industries, and Glow 2.0's focus on social interactions through the use of light.

The **project design goal** is to introduce **interactive light-based and aviation themed features** as means to inject some much needed energy into this under-utilized, relatively deserted plane spotting area. This would **improve the footfall into the area** as visitors have an **enhanced experience interacting with the features.**

Tree diagram of ideas

- Vehicles with additional light display
- Dedicated parking zones
- Bicycle parking area
- Directional signboards
- Dedicated cycling path
- Pavements
- **Incorporate with surrounding area**

- Glass dome structure
- Weather shelters
- Benches
- Sleeping pods
- Shade Structures
- Picnic areas
- Observation deck

Ideas to enhance user interactions at plane spotting site with light

- **Rest and Relax**
- **Infrastructure**
- **Activity based**
  - Children's play area
  - Arcade games
  - Exercising corner
  - Carnival booth games
  - **Interactive board**
  - Virtual Reality zones
- **Visual**
  - Light show
  - Drone display
  - LED displays
  - Holography
  - Glow stick sculptures
  - Physical Sculptures
  - Information panels

Wearables and accessories
- Smart Clothing
- Bags
- Shoes
- **Wristbands**
- Head bands
- Smart Watches

Technology involved
- Renewable energy (solar)
- Non-renewable energy (batteries)
- Glow-in-the-dark
- Element of light
- Motion seosors
- Location tracking
- Health monitoring

Top: Tree diagram of ideas. The ideas are grouped into 3 main categories: (1) Wearables and accessories; (2) Infrastructure within the site, and (3) Other ideas that incorporate the surrounding area of the plane spotting site.
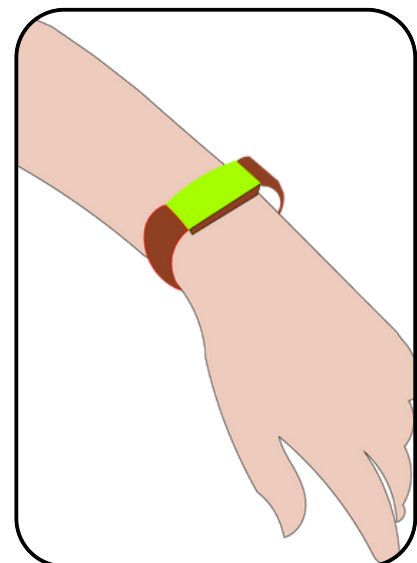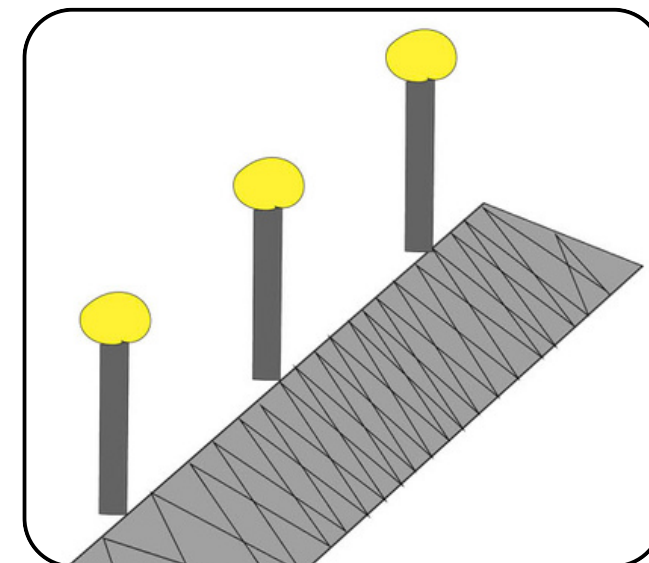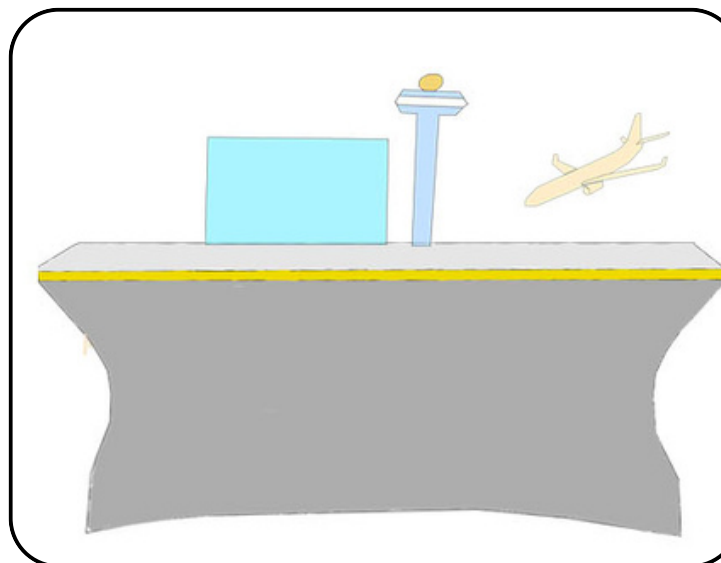
Bottom:

Design sketches (colored light red in the mind map). From left to right:

(1) Interactive board with holographic images of Changi Airport and a plane landing at Changi Airport;

(2) Pavements that rely on kinetic energy when users walk on the pavement to power up light installations;

(3) Wristband that lights up when near the plane spotting site

Airport@CBP: The Light Experience

With the above-mentioned design goals in mind, I decided to weave in multiple ideas from the tree diagram above to create a cohesive idea.

Airport@CBP: The Light Experience aims to transport the history of Changi Airport to the plane spotting site in a visual, captivating manner while allowing visitors to enjoy the uninterrupted view of planes landing at Changi Airport. The addition of light features at the site aim to enhance the experience of the visitors on site as they admire the displays and planes.

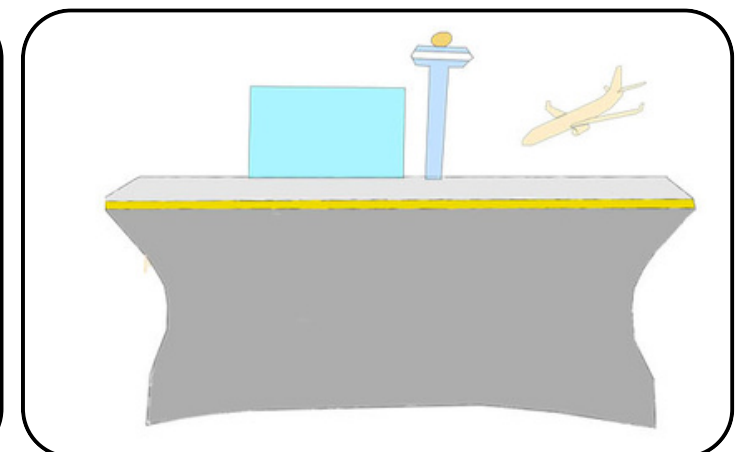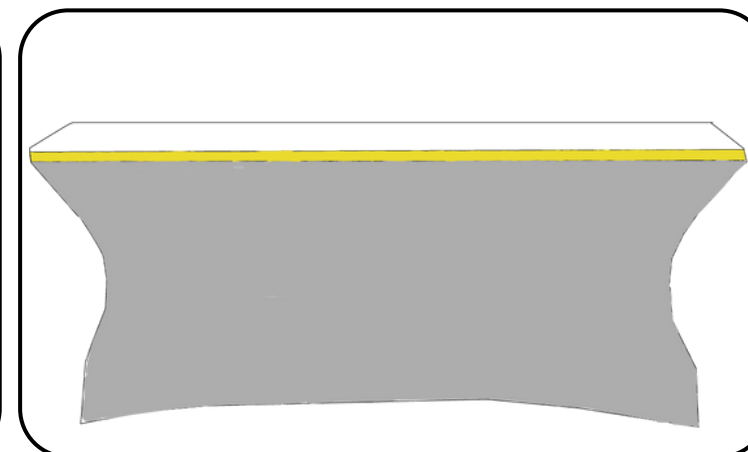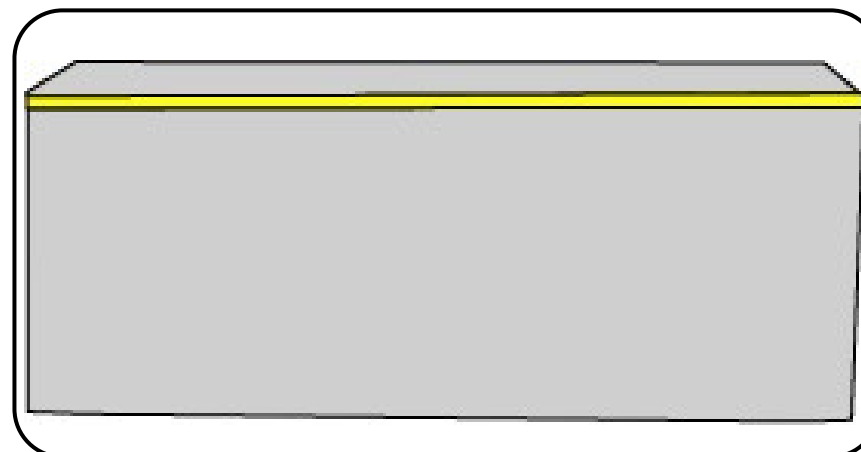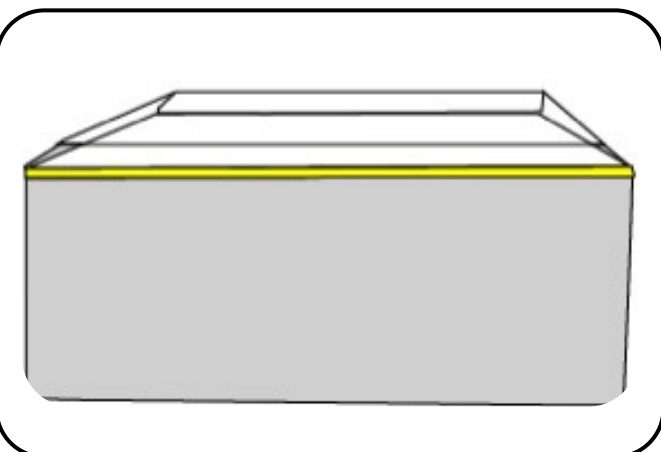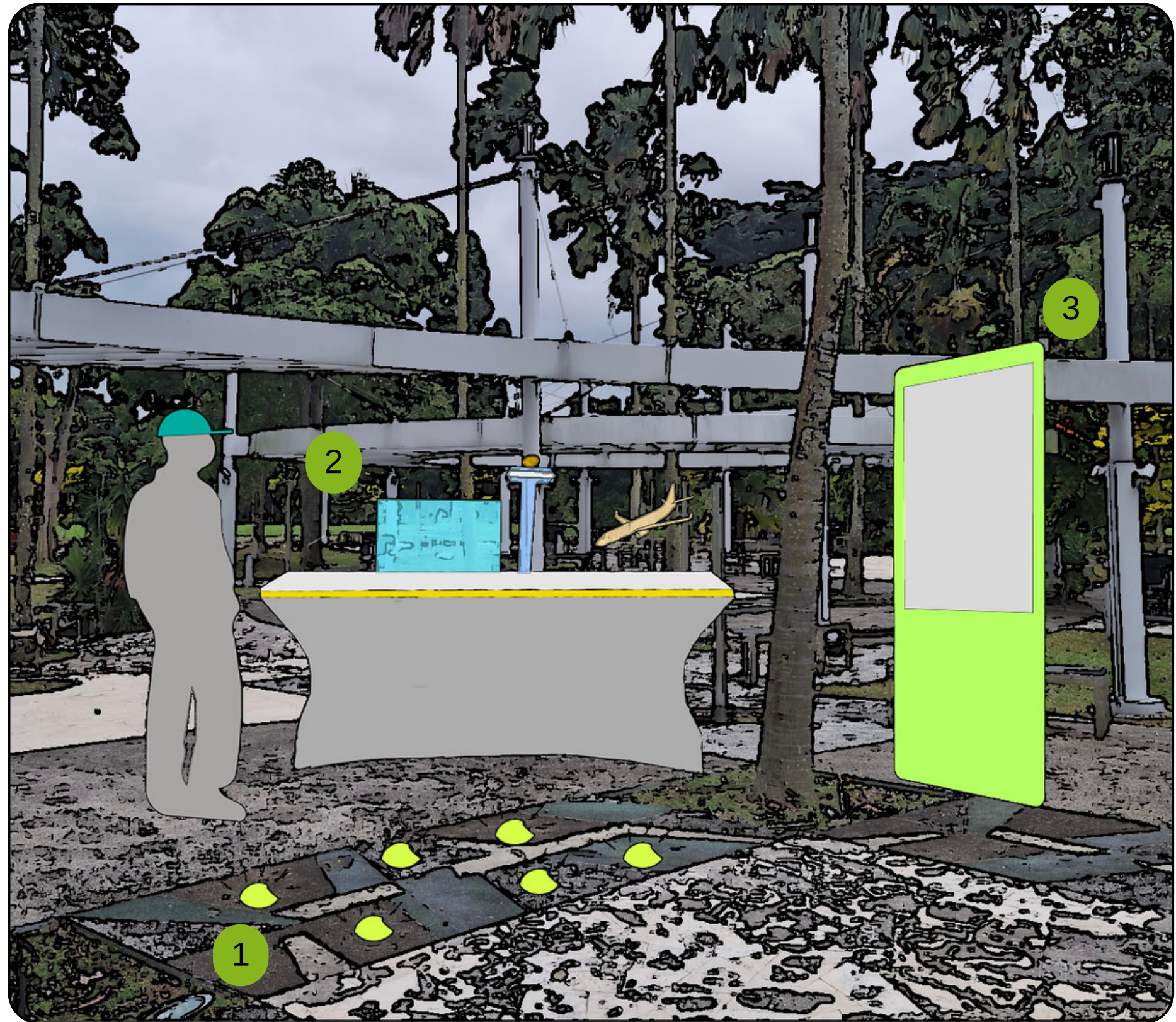There are 3 key features within Airport@CBP: The Light Experience:

(1) The LED lights installed on the ground. The lights will only be switched on when there are visitors on site, which would leave him intrigued over the displays on the floor

(2) The table-top display screen shows a holographic image of Changi Airport with some information about the airport. The holographic images are only illuminated when the visitor is standing near the screen. An image of a plane is shown when a plane is landing.

(3) The vertical display screen that shows information about the plane spotting site. When a plane is landing, directions for the visitor to the plane observation point would be shown.

Right: Contextualized drawing of how the idea would look like within the site.
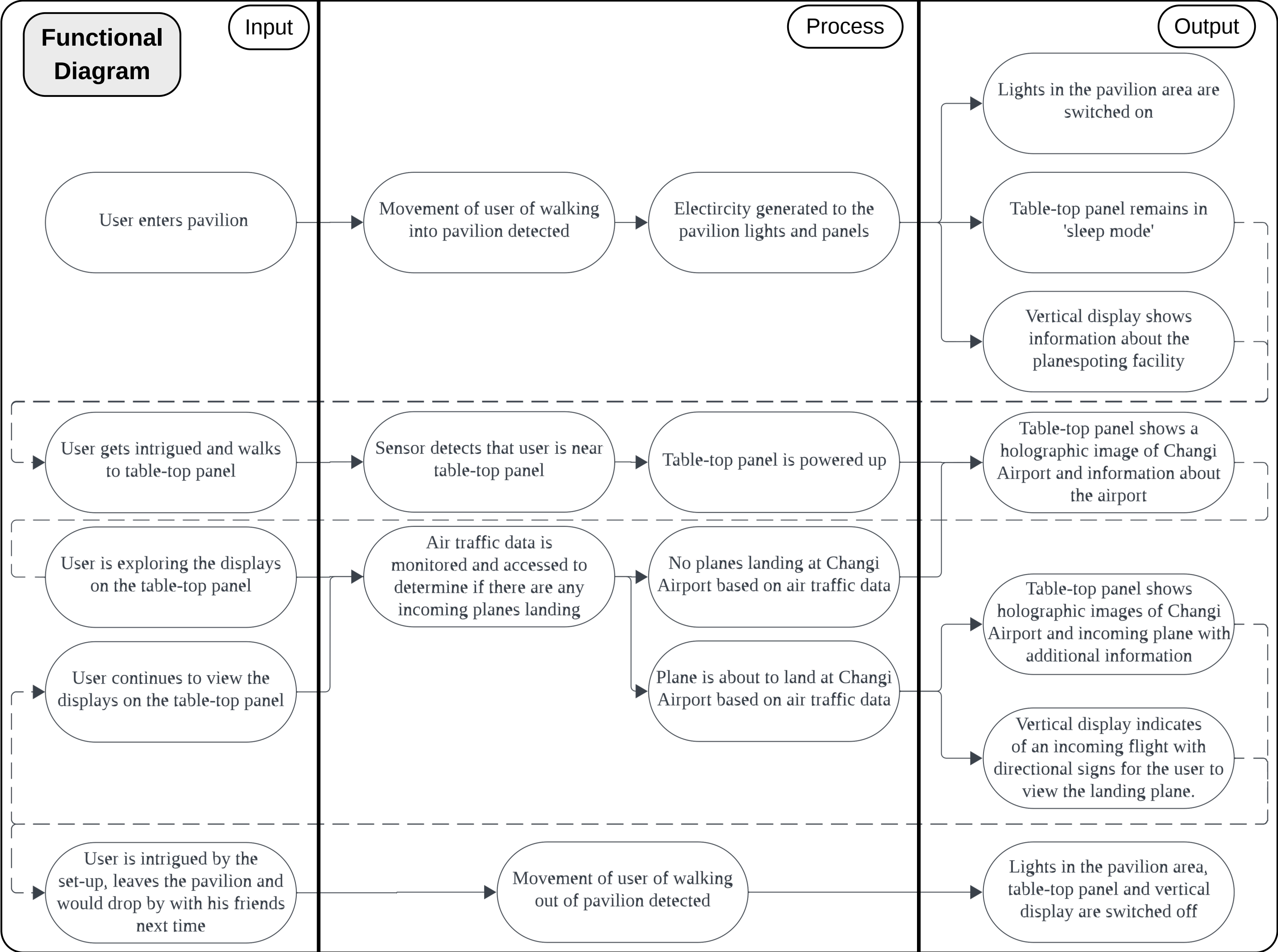
Bottom: Iterations of the table-top display screen.
Multiple shapes and surfaces were explored, such as the use of a sloped base from the table top or assuming the display to be a cuboid. Eventually, I settled for a flat-top table with curved sides and base given the 'exhibition-like' looks and feel.
The final sketch used is in the far right corner.

Functional Diagram

Input | **Process** | **Output**

User enters pavilion → Movement of user of walking into pavilion detected → Electircity generated to the pavilion lights and panels →
- Lights in the pavilion area are switched on
- Table-top panel remains in 'sleep mode'
- Vertical display shows information about the planespoting facility

User gets intrigued and walks to table-top panel → Sensor detects that user is near table-top panel → Table-top panel is powered up → Table-top panel shows a holographic image of Changi Airport and information about the airport

User is exploring the displays on the table-top panel

User continues to view the displays on the table-top panel

→ Air traffic data is monitored and accessed to determine if there are any incoming planes landing →
- No planes landing at Changi Airport based on air traffic data
- Plane is about to land at Changi Airport based on air traffic data

→
- Table-top panel shows holographic images of Changi Airport and incoming plane with additional information
- Vertical display indicates of an incoming flight with directional signs for the user to view the landing plane.

User is intrigued by the set-up, leaves the pavilion and would drop by with his friends next time → Movement of user of walking out of pavilion detected → Lights in the pavilion area, table-top panel and vertical display are switched off

Story Board

The process on the idea working are shown from the user journey of John.

Description:

(1) John happened to pass by the plane spotting pavilion during one of his runs and explored the area out of curiosity.

(2) Upon entering, the pavilion lights switch on, which pleasantly surprised John.

(3) A vertical display board shows the information about the plane spotting site.

(4) He admired the information on the vertical display; light displays on the site are illuminated from the table-top display.
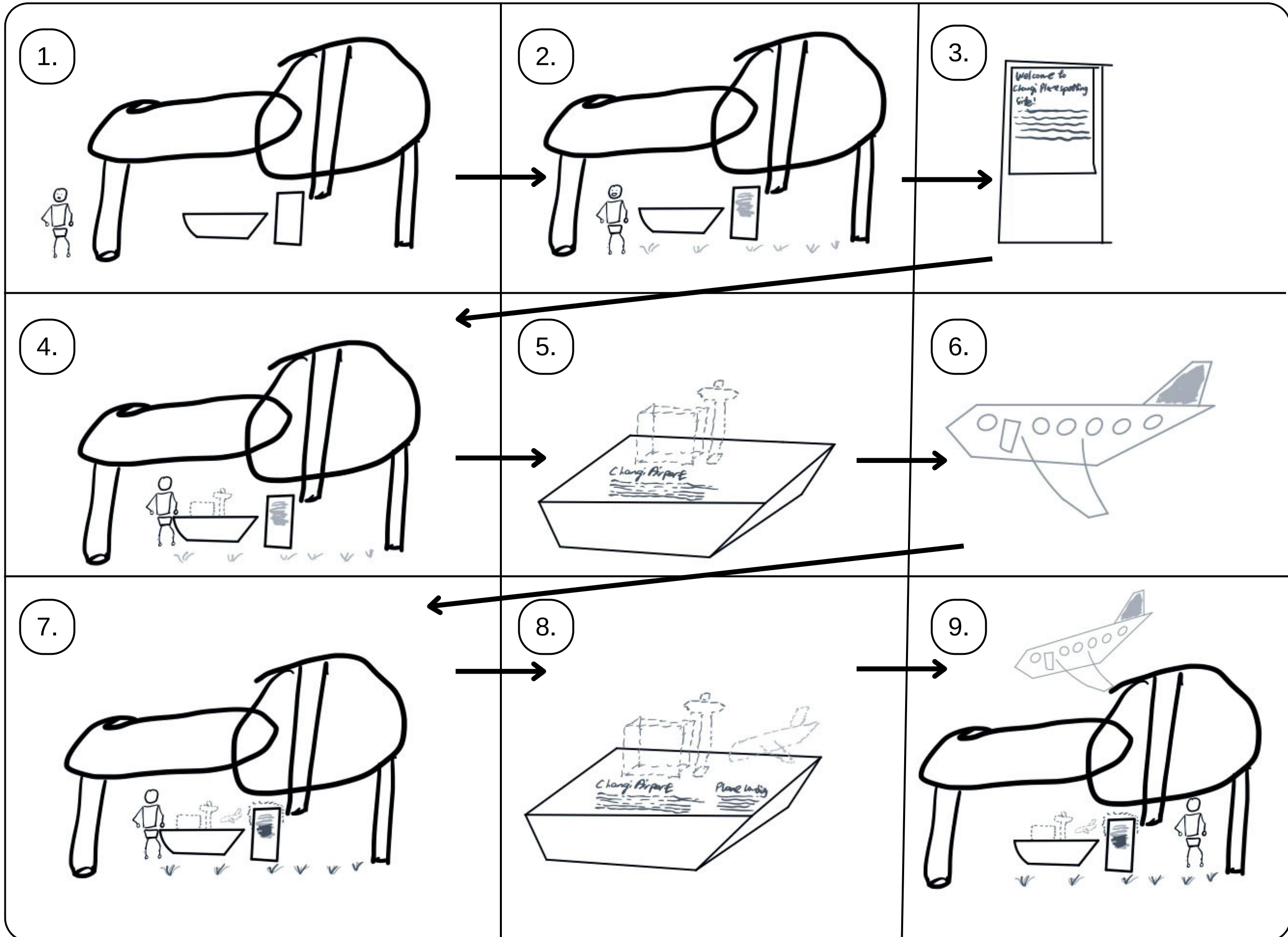
(5) The table-top display shows a holographic image of Changi Airport, along with some airport information

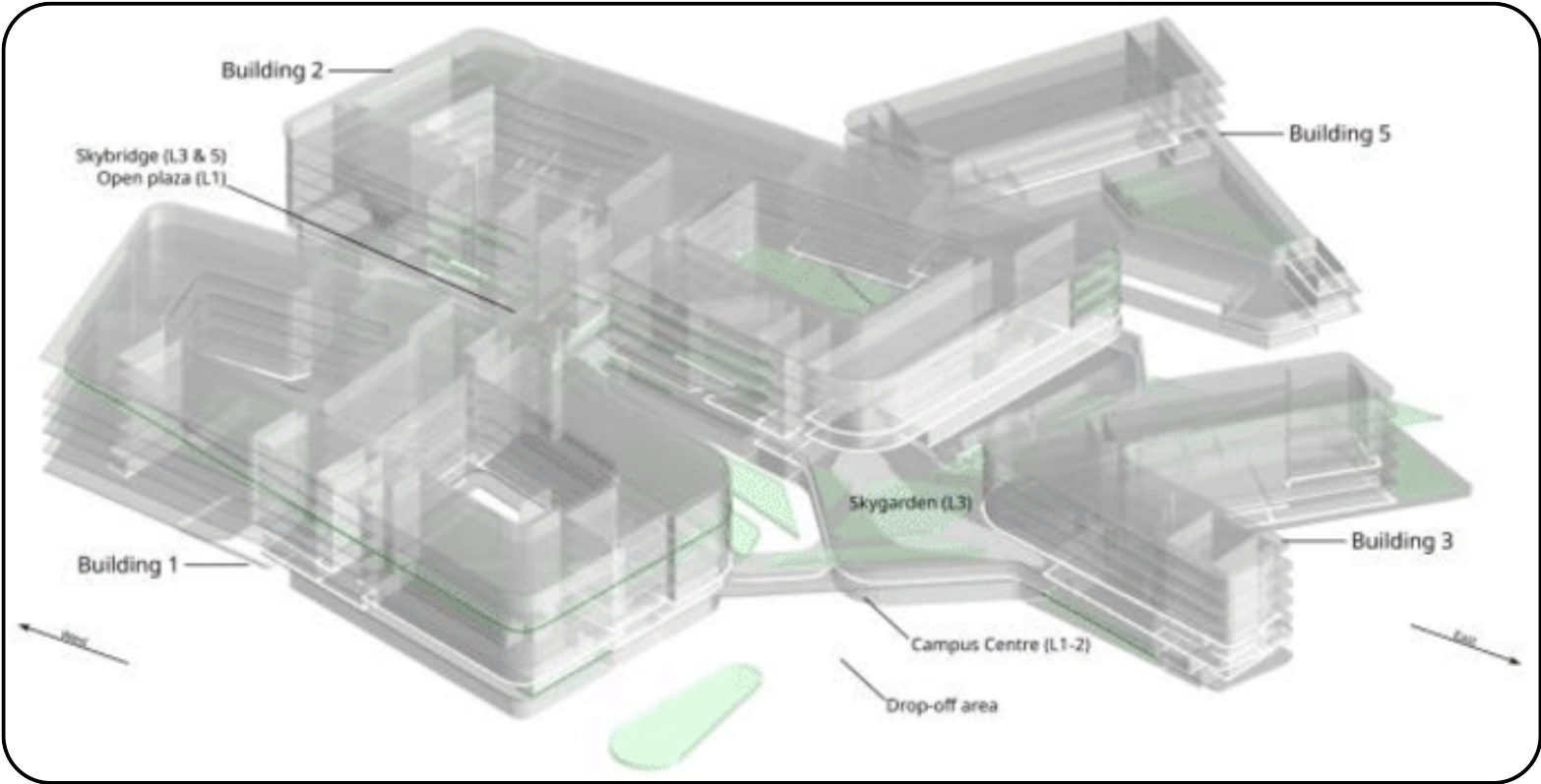(6) A plane prepares to descend and land at Changi Airport

(7) The displays signal John on the landing plane and directs him to an observatory spot.

(8) A holographic image of the plane is shown on the table-top display;

(9) John views the plane's decent from the plane spotting site.

1.

2.

3.

4.

5.

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Intriguing - Creative - Experiential