



**Nathaniel
Spencer
Hess**

2023
Product
Design
Portfolio

The Sugen Kaffe Beverage Machine

Introducing a new product line for Ikea...



Ikea's Core Values

Cost

Story Telling

Simplicity

Effective + Efficient

Integration

Persona Qualitatives



Elise
37, Married
Two Kids (8/12)
One Dog

City:
Fort Collins, CO,
USA

Schedule:
Early AM

Personality
ENFP

Values kindness
above all else

Wants/Needs



Hidden Needs and Wants

Automated / Programmable



Auto Light Sensor (Low Light Use)



Cup Warmer



Pod Storage Integrated



Competitive Landscape

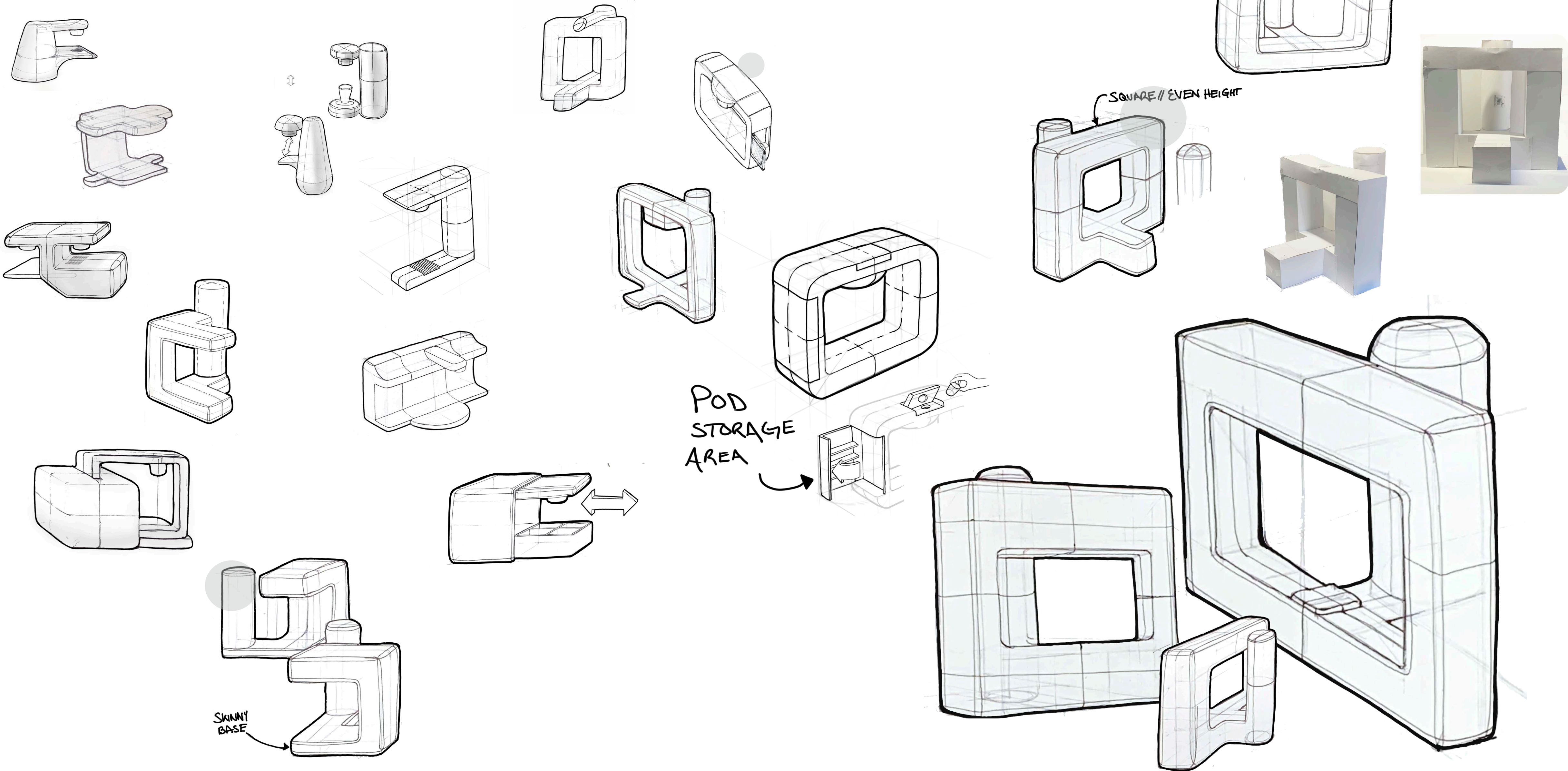


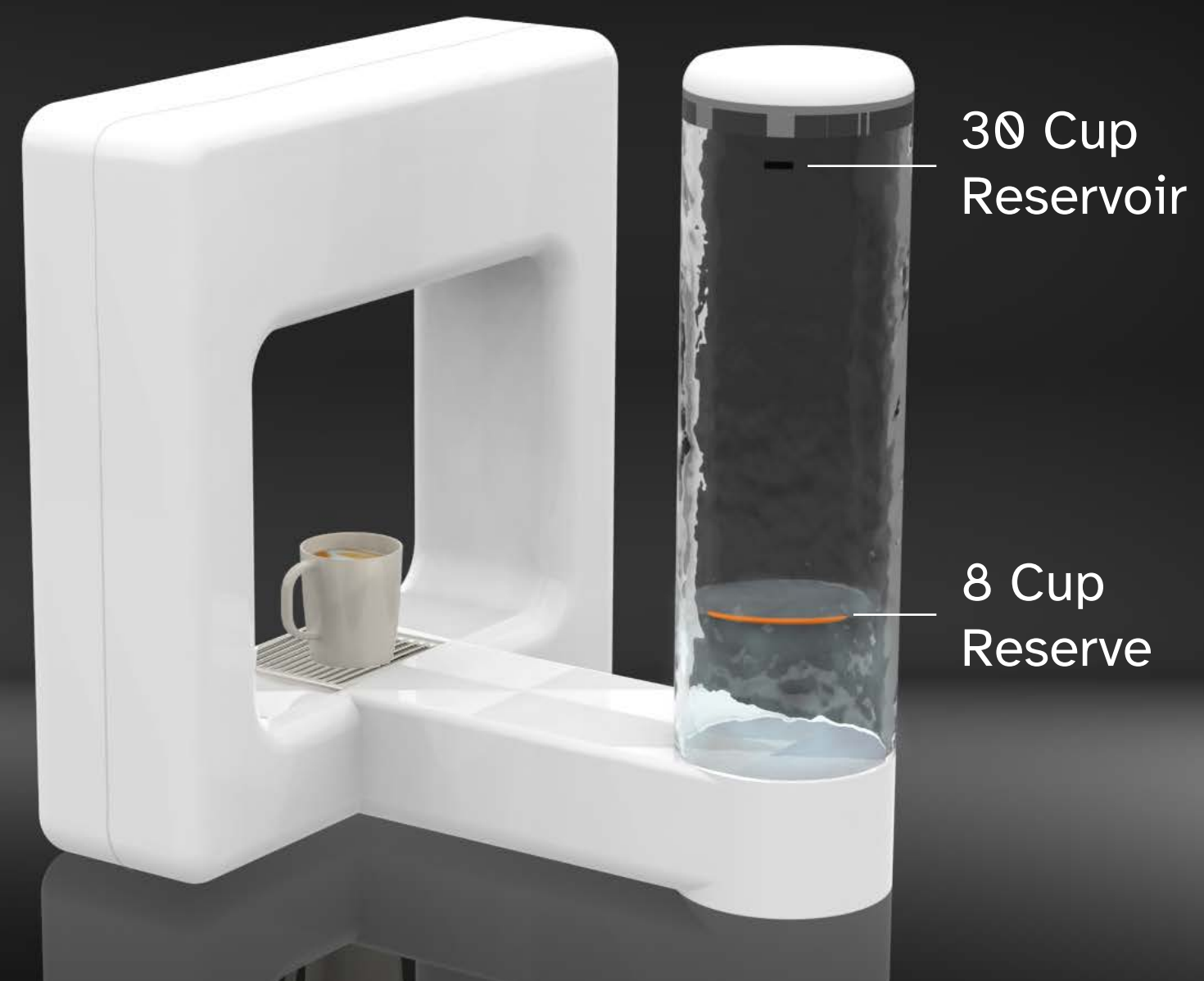
Sketching

Dynamic

Convenient

Openness





Coffee First.

Even if it's dark.

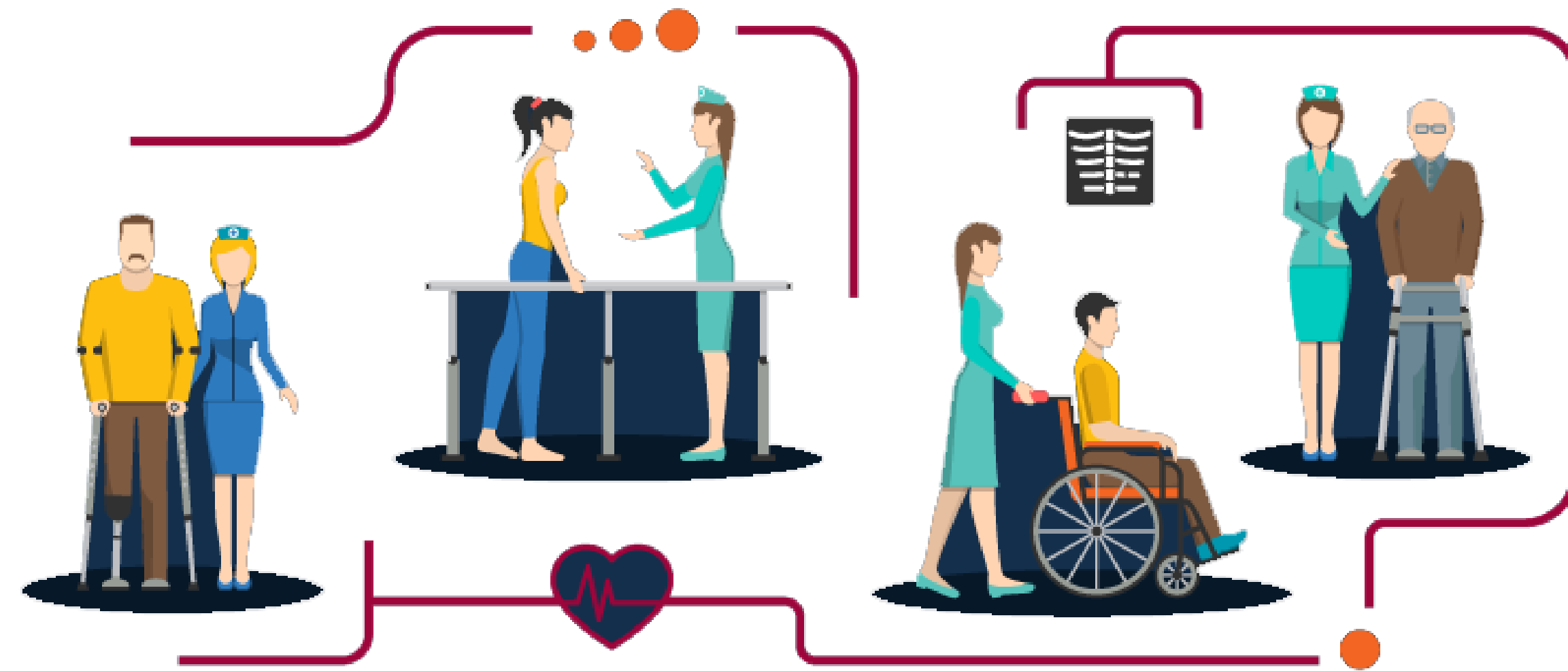


**Shown with
optional wood base*

The Sugan Kaffee



The ElevAssist



*A new device for physical
assistance in the bedroom*



Design Brief

How might we design a product that empowers individuals who struggle with ***getting in and out of bed*** more **easily**?

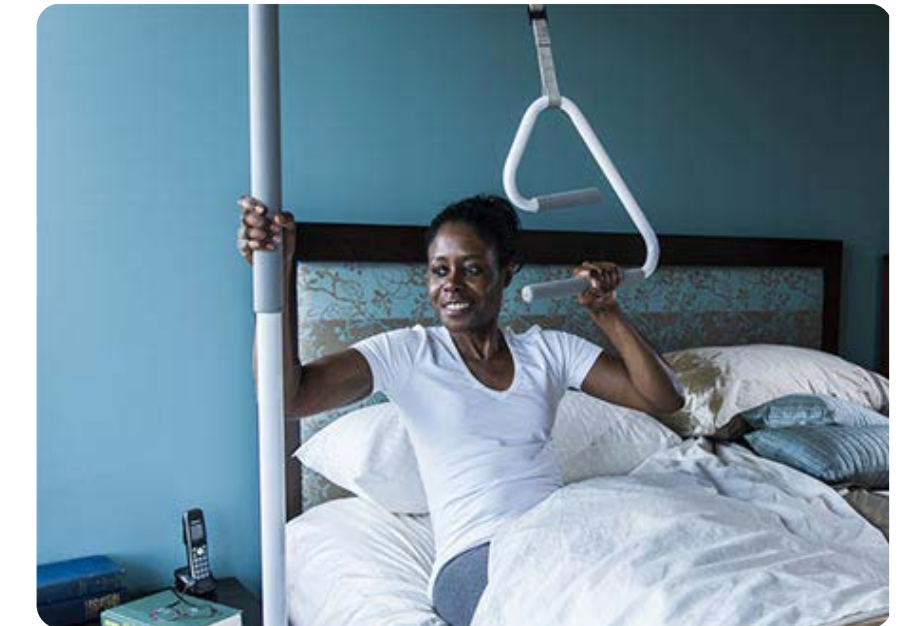
Who

Physically limited individuals who need assistance with getting in, moving around, and getting out of bed.



Where

Residential, assisted living facility and hospital beds.

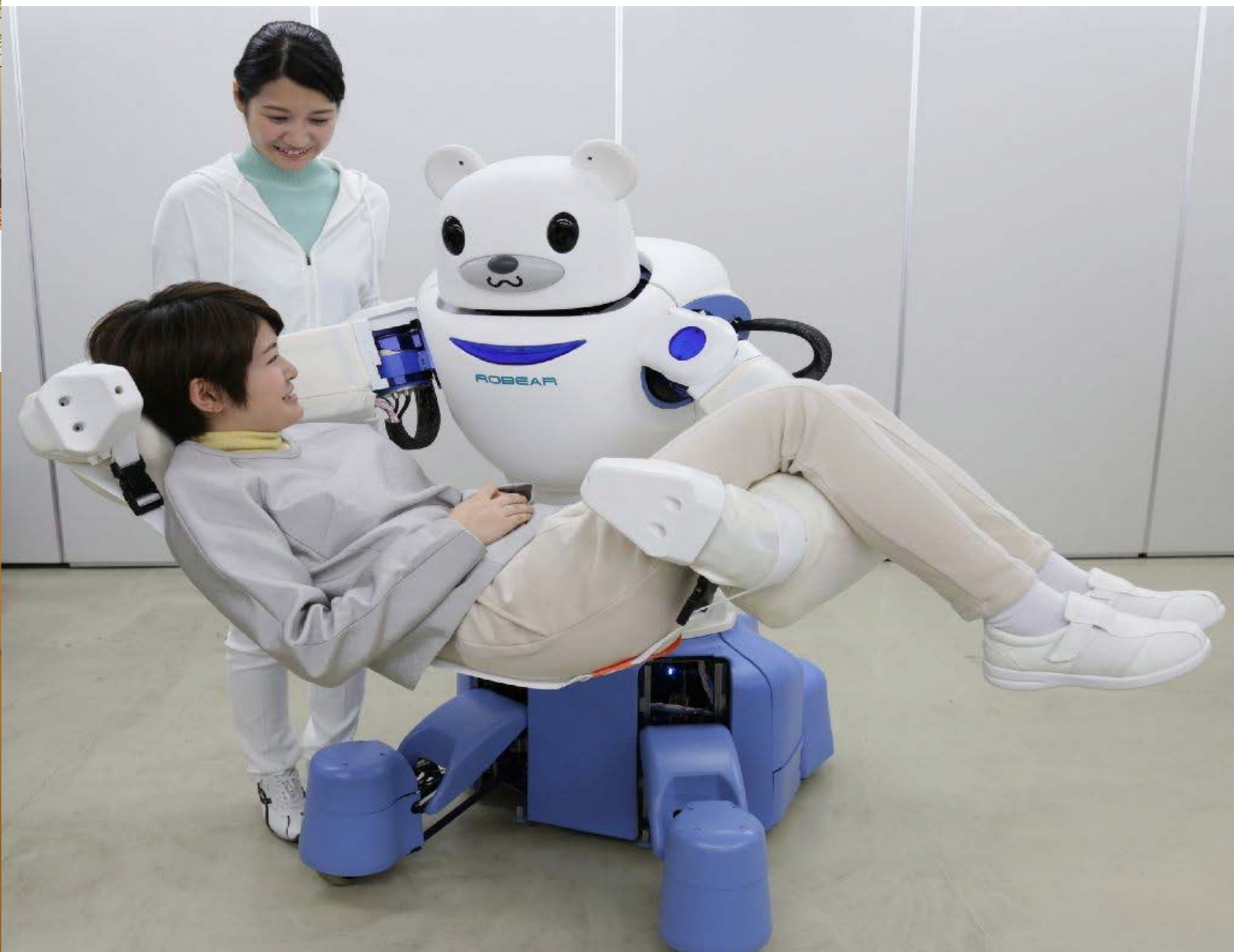


Vision + Value

The ElevAssist seeks to **empower** individuals to continue being self-sufficient by focusing on those that are **mildly physically limited**.

By **enabling independence** and **self-sufficiency**, individual's **emotional state** will remain **positive**.

Market Competitors & Inspiration

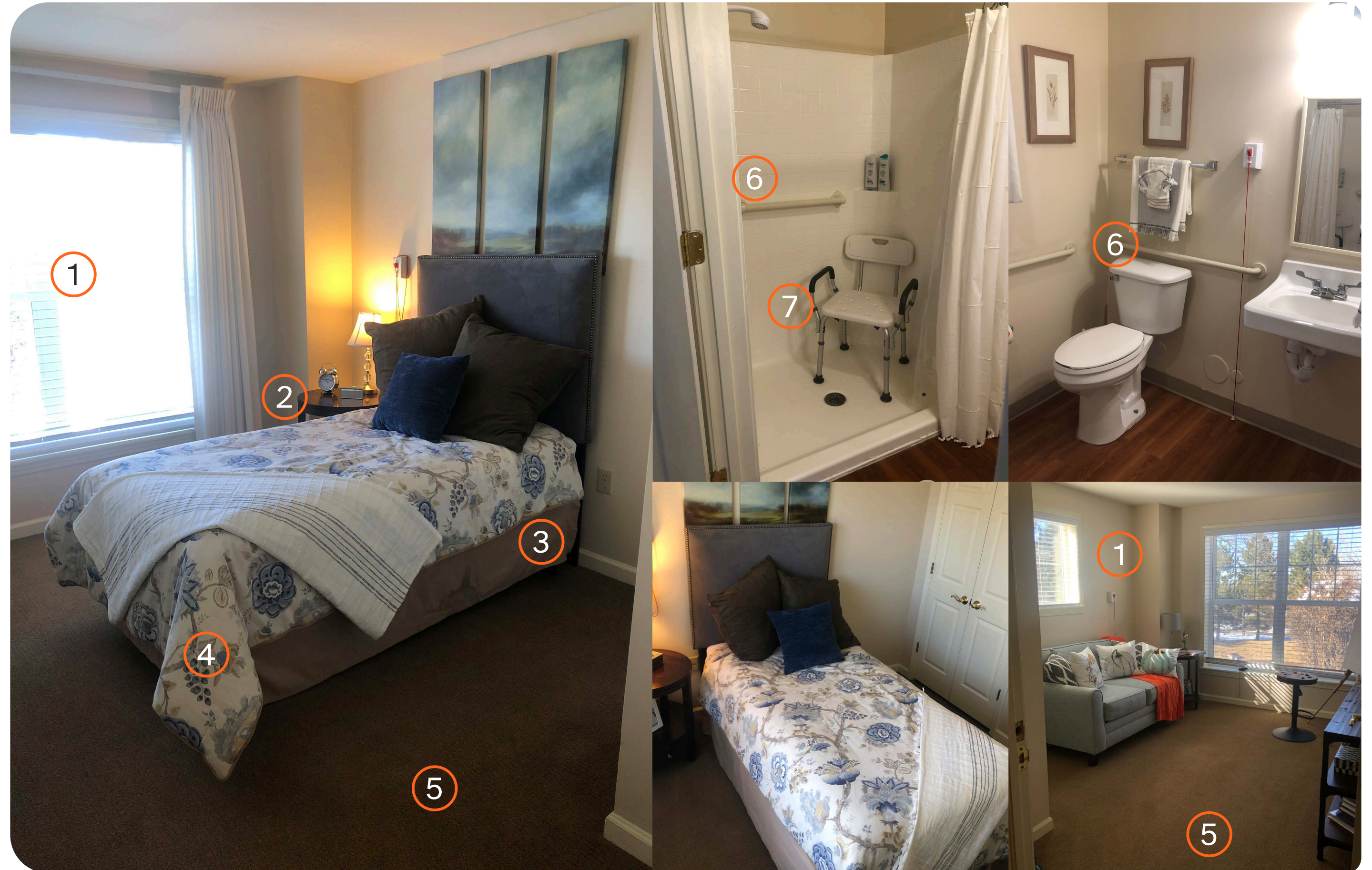


Site/Context Assessment

An apartment in the Sunrise Pinehurst Retirement Community located in Denver, Colorado.

Midday was chosen as it is the best time to observe the comings and goings of resident and allows for optimal insights and findings.

Goal: To focus on residents' behaviors, living situations, and layouts for optimal design ideation and consideration.



1. Large Windows
2. Bedside Table
3. 40" Bed Rail
4. Twin Size Bed
5. 3.5' Width Pathways
6. 28" Hand Rails
7. Shower Chair

Lots of sunlight to increase positivity & decrease stress/depression.
Very small. Devices (laptop/iPad) would not fit well.
Large comfy headboard. No built in safety to the bed (other than height).
Low Height - easy to get into/out of bed.
Wide for walkers, & safety devices. Easy to clean/move around. No place to sit.
Uncomfortable handles - No padding.
Black grip handles. Hard seat/uncomfortable. Stable grip legs for use in water.

Interviews

- Marian**, 60, Physical Therapist
- Melanie and Frank**, 69, Living on their own
- Evelyn**, 93, Lives in Pinehurst
- Elan**, 91, Lives in Pinehurst
- Lindsey**, 34, Works at Pinehurst

Takeaways

Sleepers in general use their sides to get up with the help of their free arm for the initial push. Their legs are cantilevered off the side of the bed & they push with their arms.

Evelyn uses her hips to roll her body from one side position to another. Elan uses his arms in conjunction with his hips to roll from side to side, demonstrating an unusual amount of arm & core strength for his age.

Marian, a physical therapist, talked in depth about the importance of being able to push & pull with dynamic positioning to create a truly assistive product. Dynamic, in this case, means to be able to adjust the position of the device automatically or manually.

Both Elan and Evelyn had recently had large health declines & needed occasional help from an orderly to get up and down.

Notable Quotes

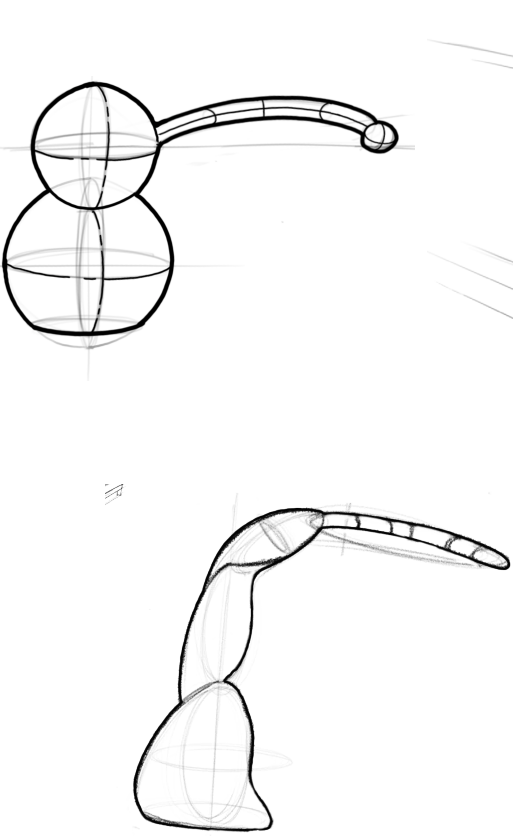
Marian
The center of gravity is in the hips. I see patients who typically must re-learn how to capitalize their center of gravity when something has happened (referring to injuries or aging).

Lindsey
A lot of elderly have experienced severe injuries & even death when they get stuck.

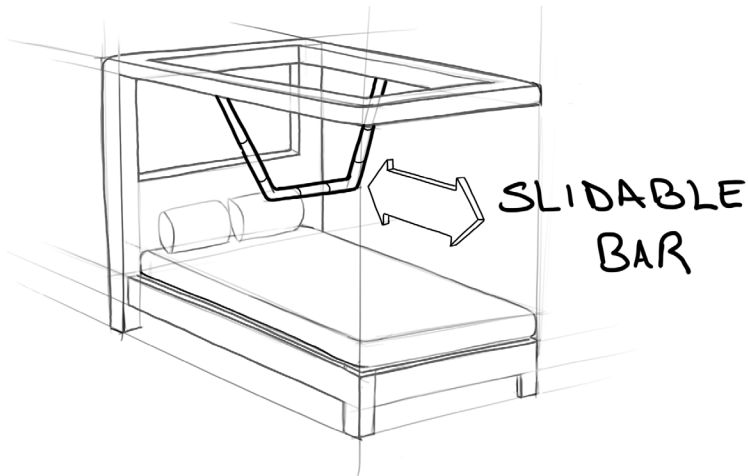
Evelyn
I get my legs close to the edge of the bed & Lindsey puts her arms under mine to bring me upright.

Sketching

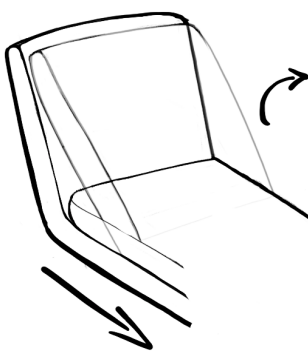
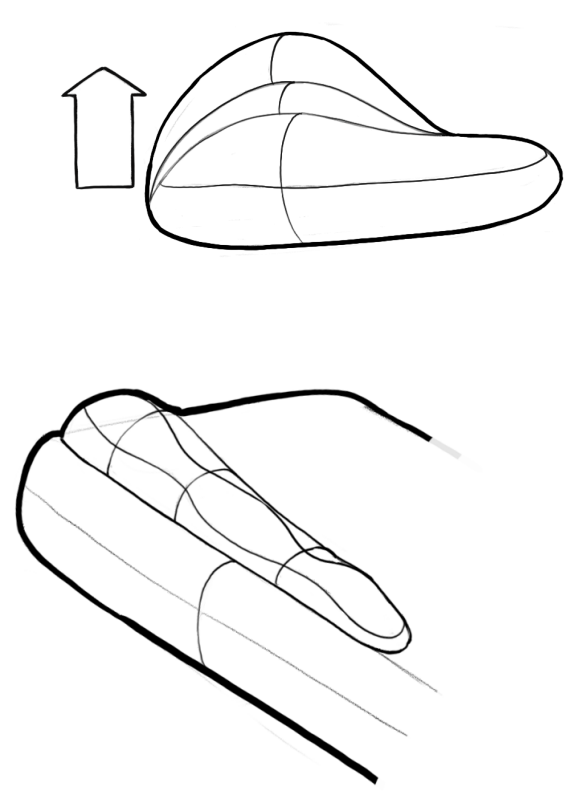
Stand Alone



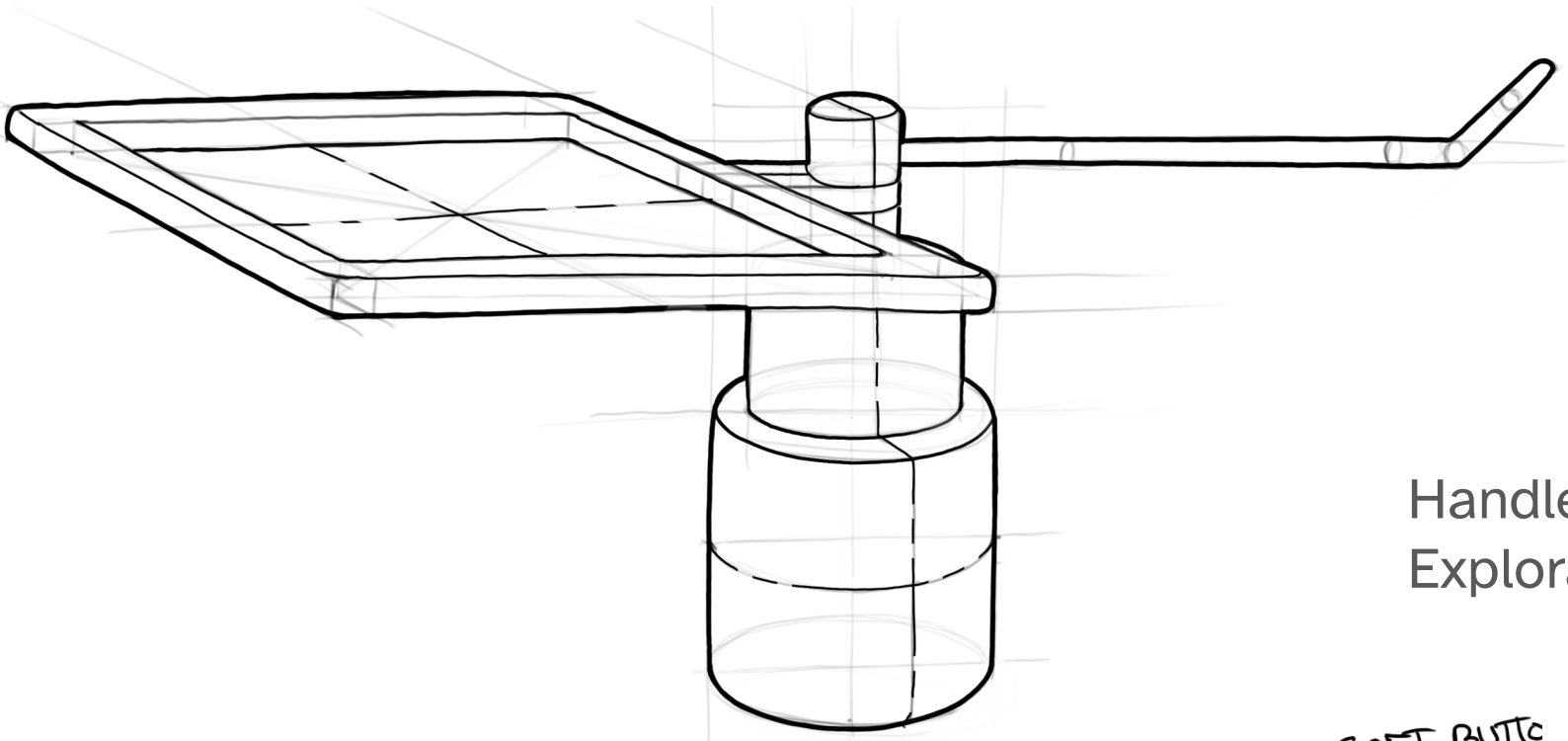
Built In



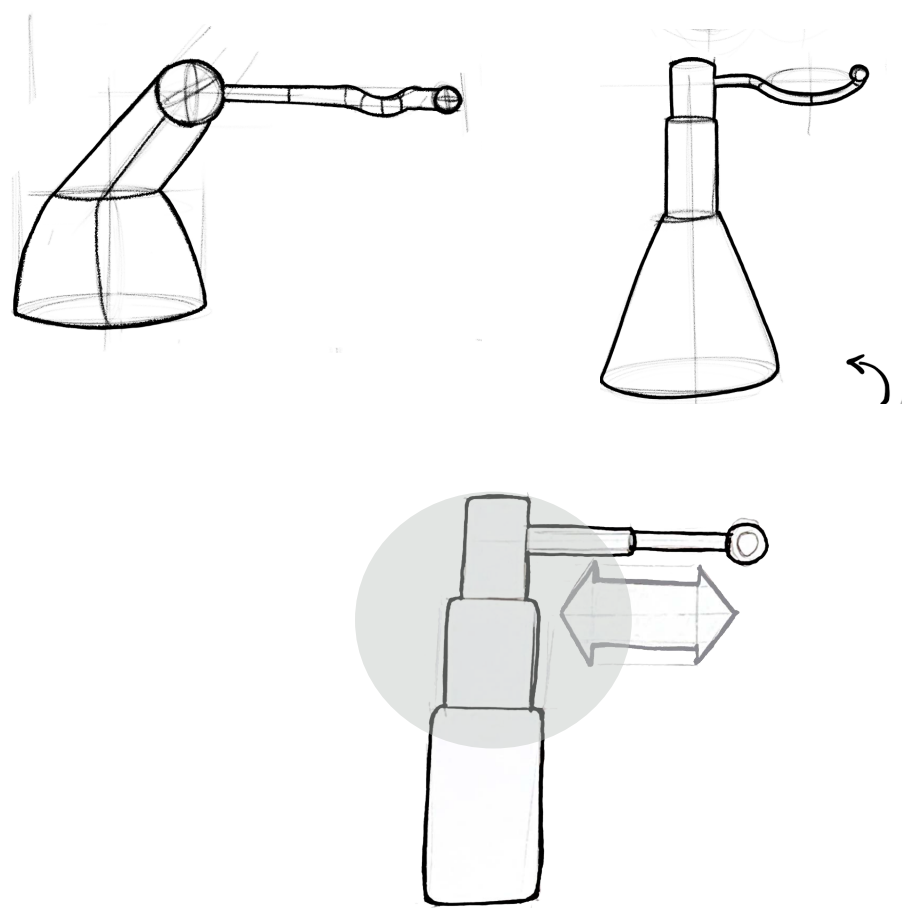
Inflatable



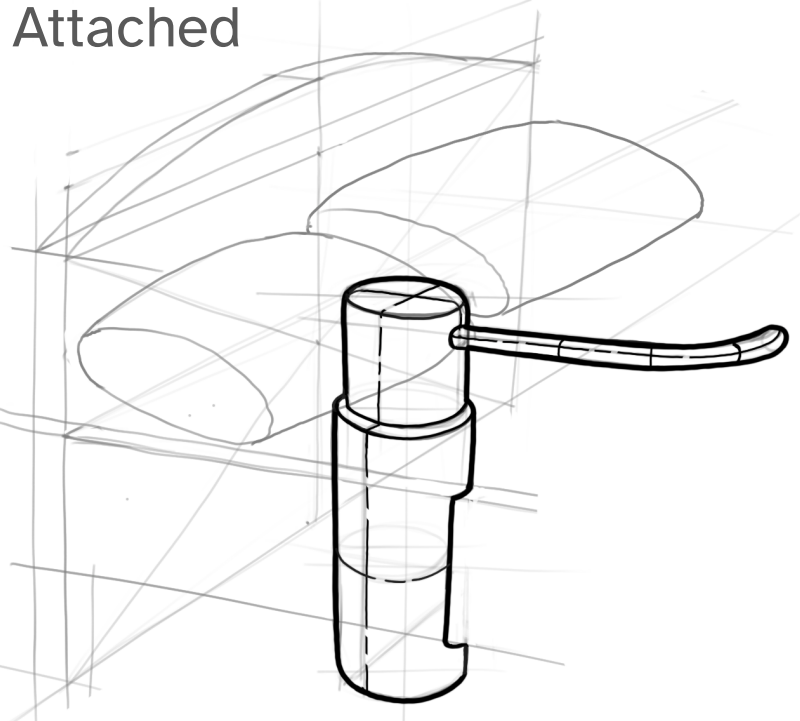
⊘ Not enough support to help a person stand up
USER SLIDES UPRIGHT



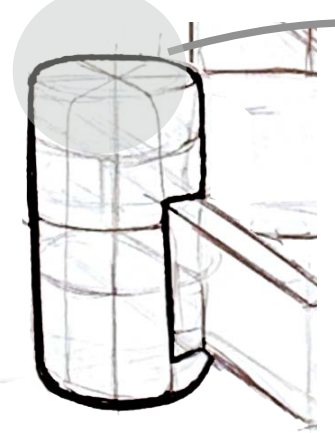
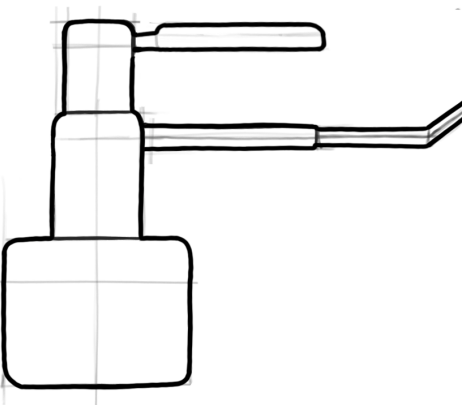
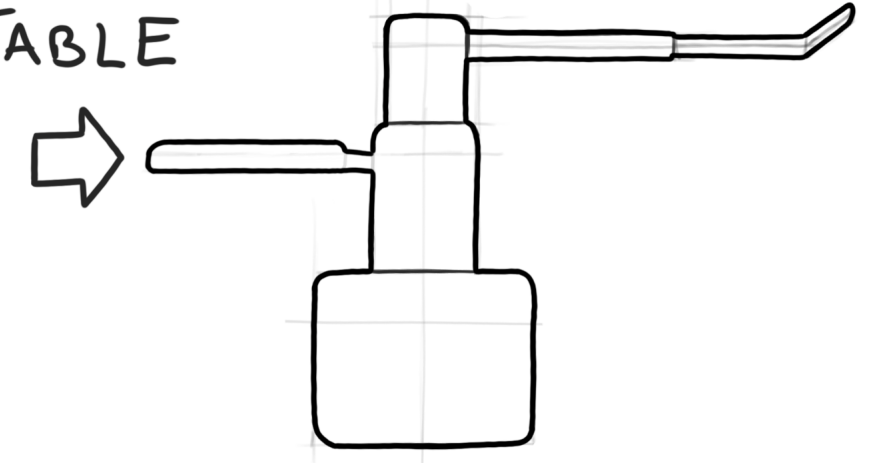
Handle Exploration



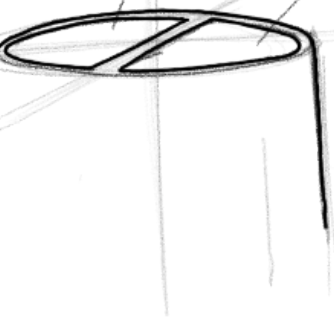
Attached



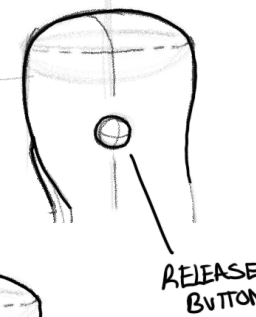
TABLE



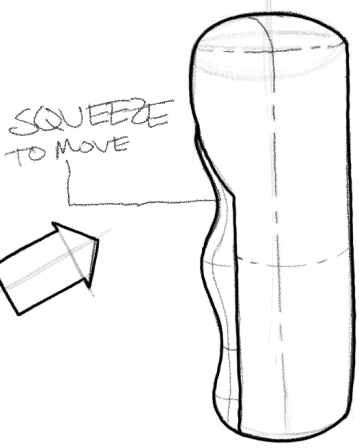
BUTTONS
RED (UNLOCK) GREEN (LOCK)



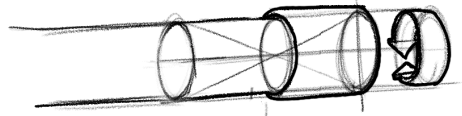
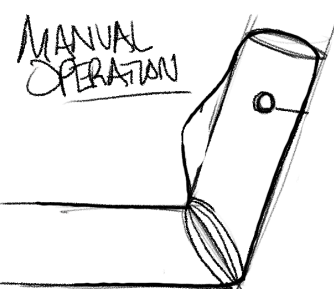
SOFT BUTT *POLYURETH

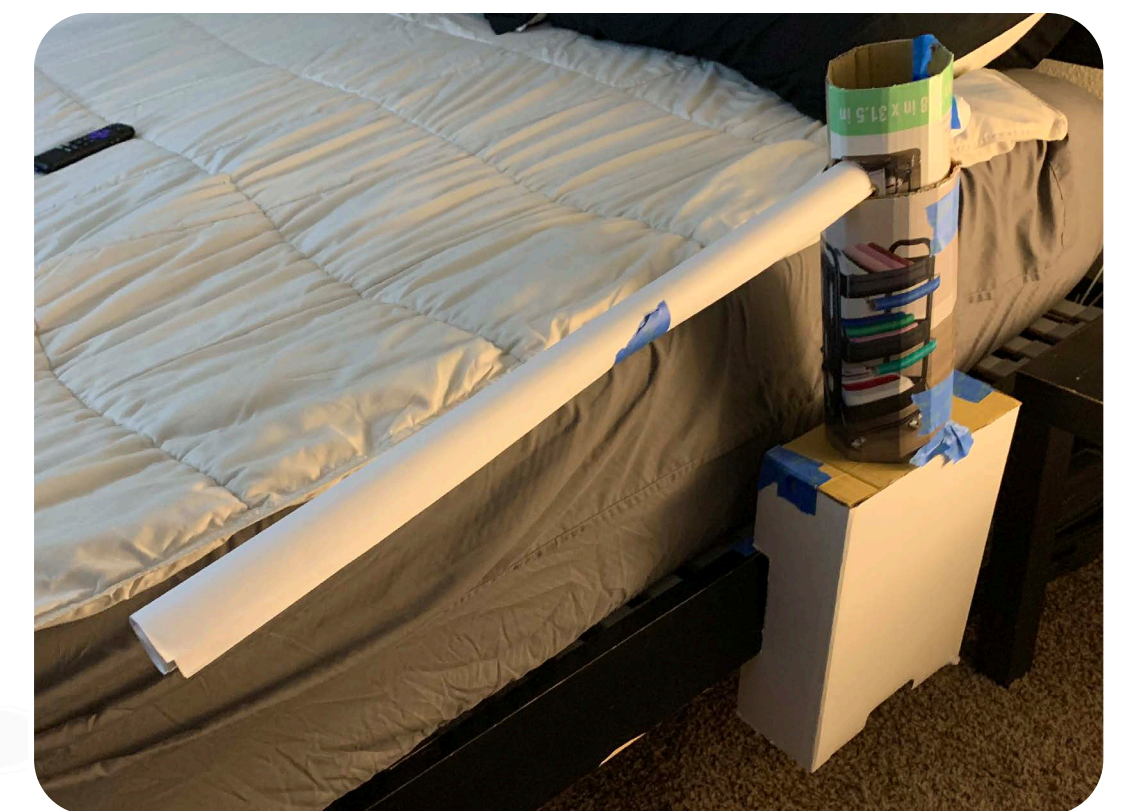
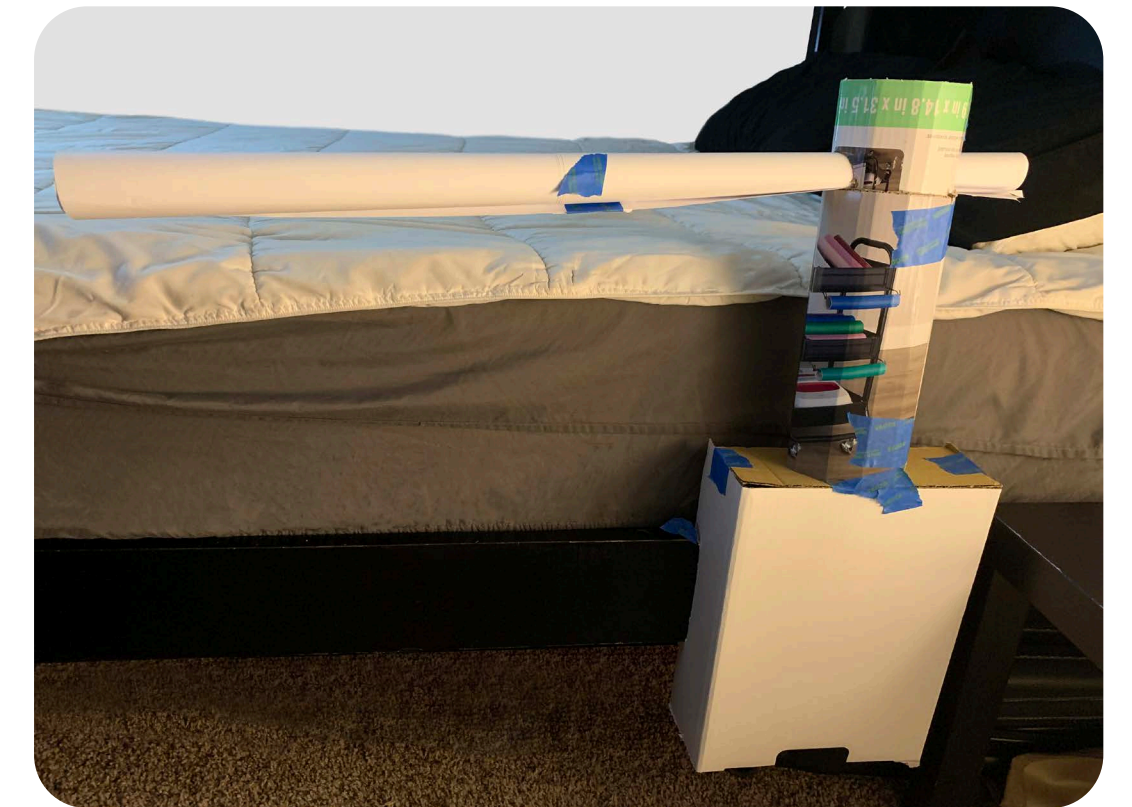
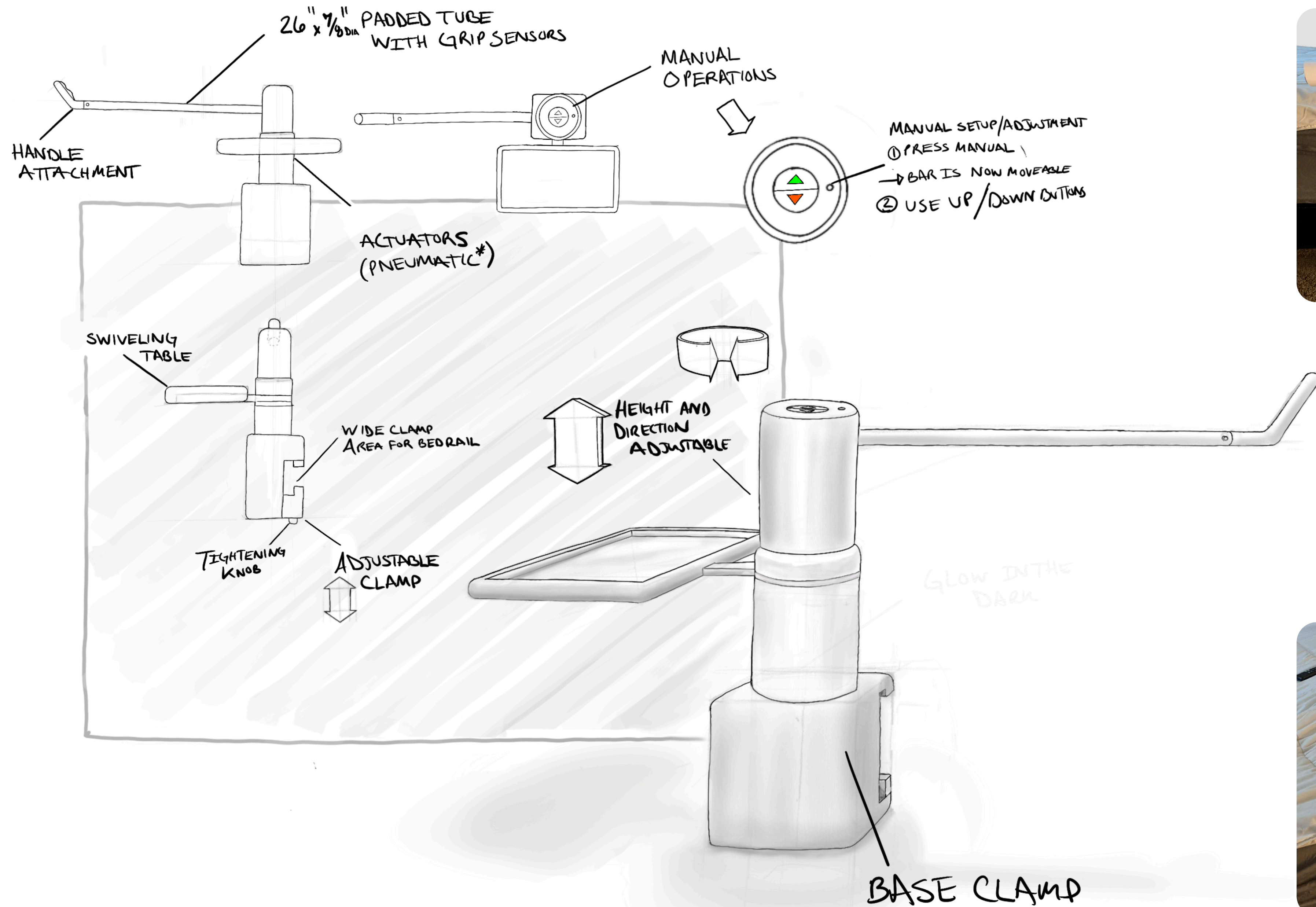


SQUEEZE TO MOVE



MANUAL OPERATION





Materials

Poron PU Soft
Cushioning + Grip
Sensor

Aluminum Tube
(Interior)

Poron PU Outer Layer
Coating (White)

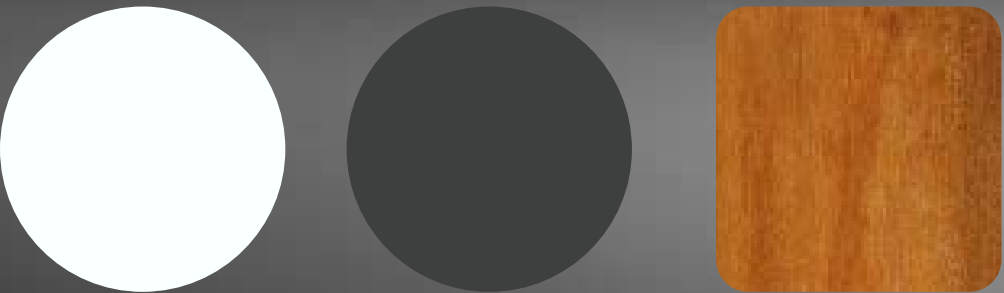
Aluminum
Release
Button

Pneumatic
Actuator

Veneer
Alder

Stained Hardwood
(Alder)

Color Ways





The ElevAssist

*Empowering individual movement,
everyday.*

- The horizontal leverage gently leads user to standing (position 1 to 2)
- Positions and height are adjustable manually for individual needs
- When not in use, it functions as a bed railing for additional safety





Homeless in 2030

A Bluesky Project to Help
Solve Homelessness

| Design Brief

How might we design a medical, health and social services product or service that **assists** people who are **homeless** **to improve their quality of life** and contribute to being in a permananet home?

Target Users

Homeless Who Have



or



and

Want Help

Target Needs



| Fact Finding

- 1/3 of **Deaths** Due to Unmet Medical Care
- 90%+ of population want telemedicine in 2030



On Site Observations



Supportive Autonomy



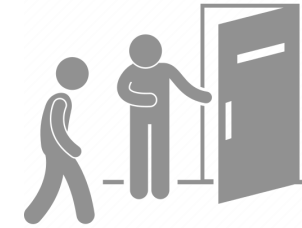
Accountability



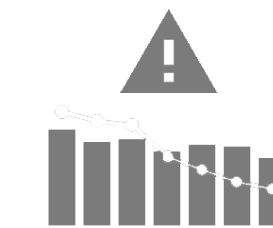
Basic Medical Equipment



Empowerment



Inviting Atmosphere

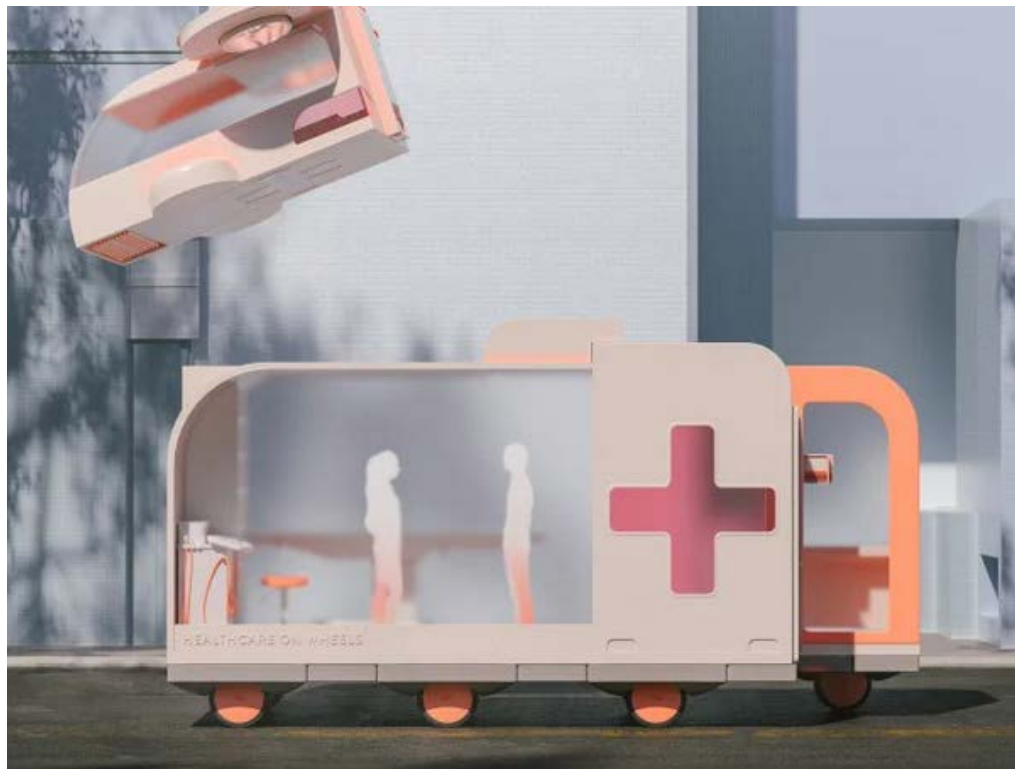


Inefficient Layout



Bluesky Keyword Concepts

Driverless



Robotics/AI



Integrated Medicine



Inviting Atmosphere



Embedded Lighting

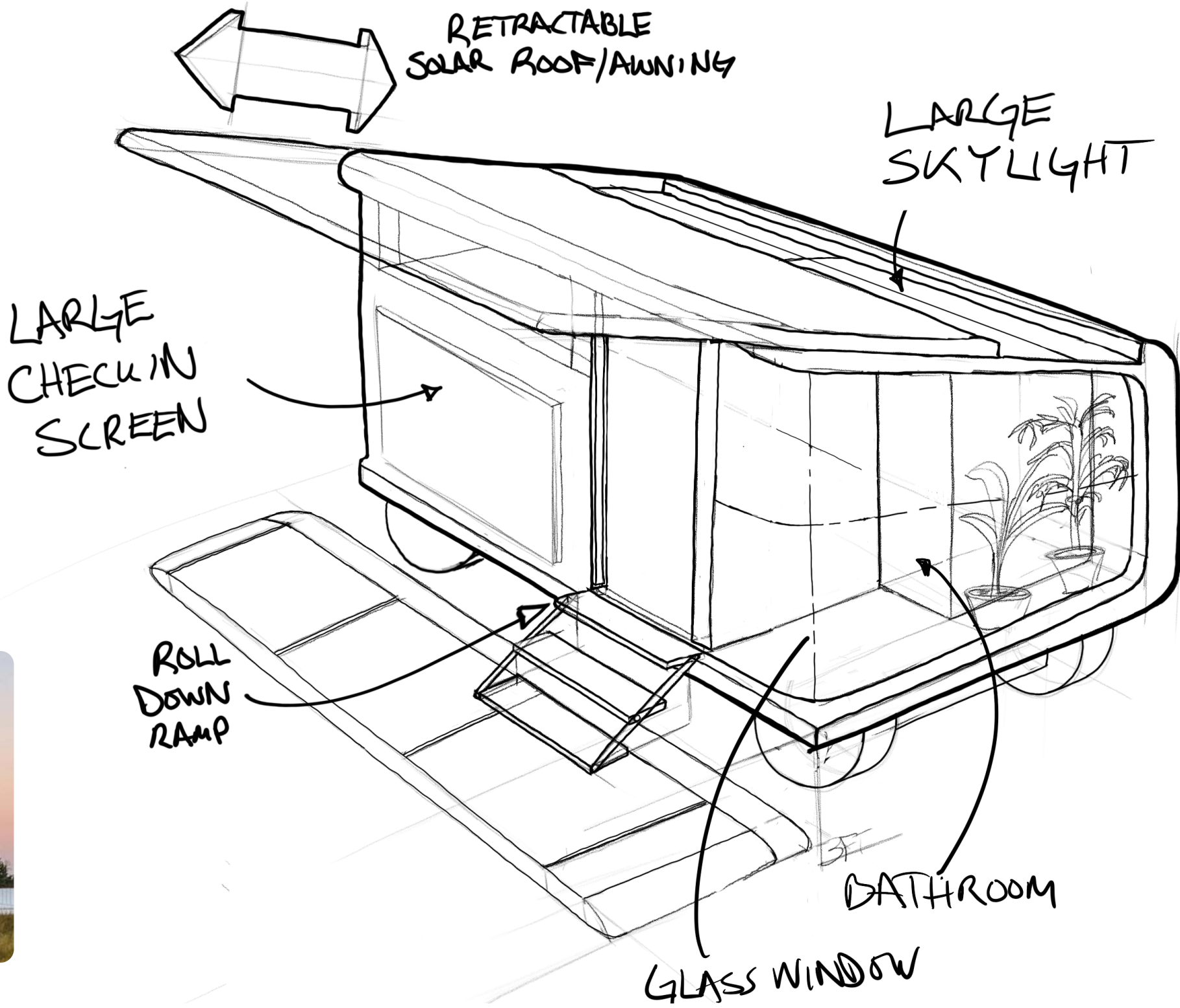
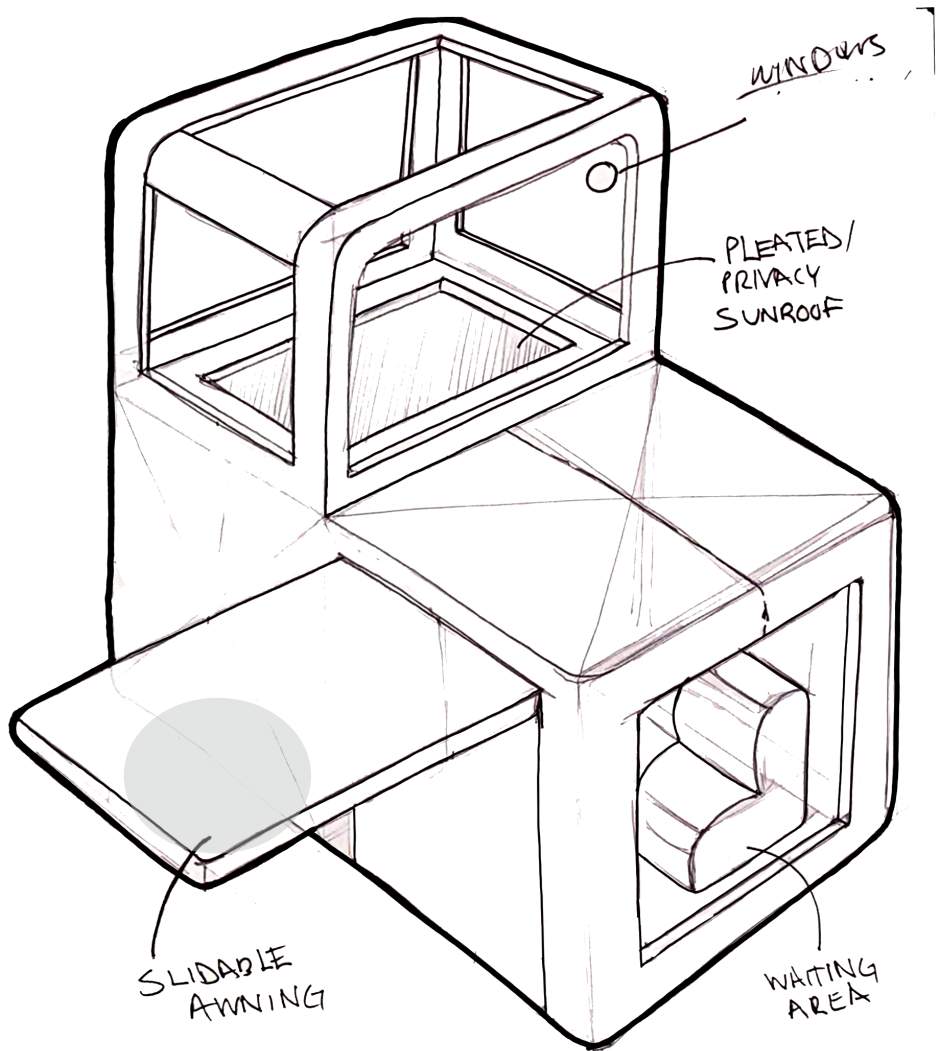
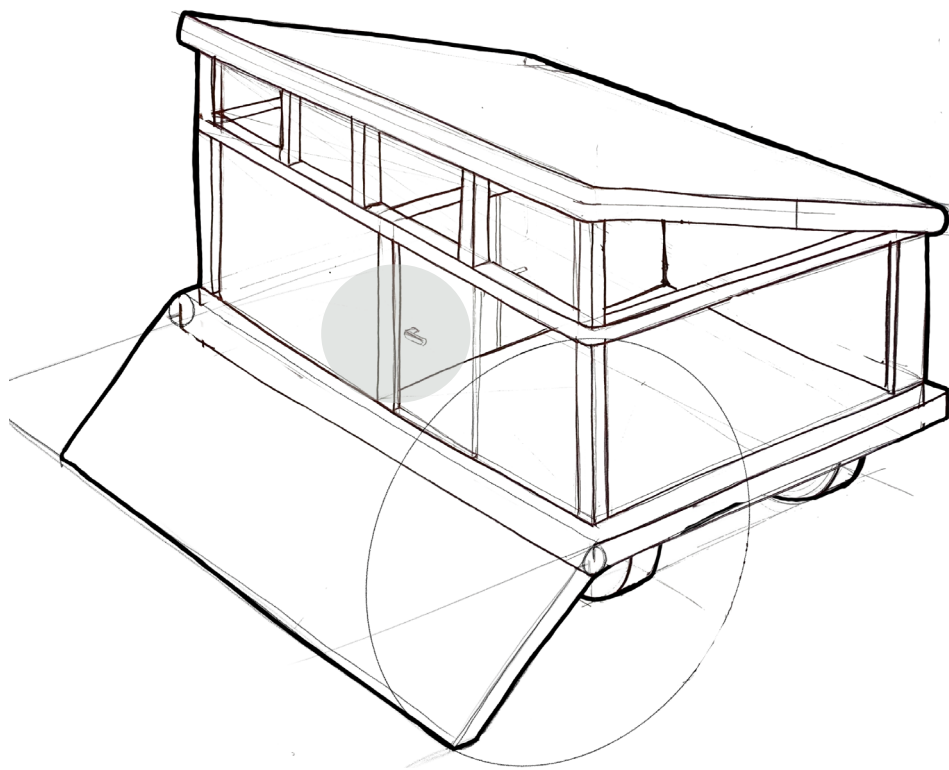
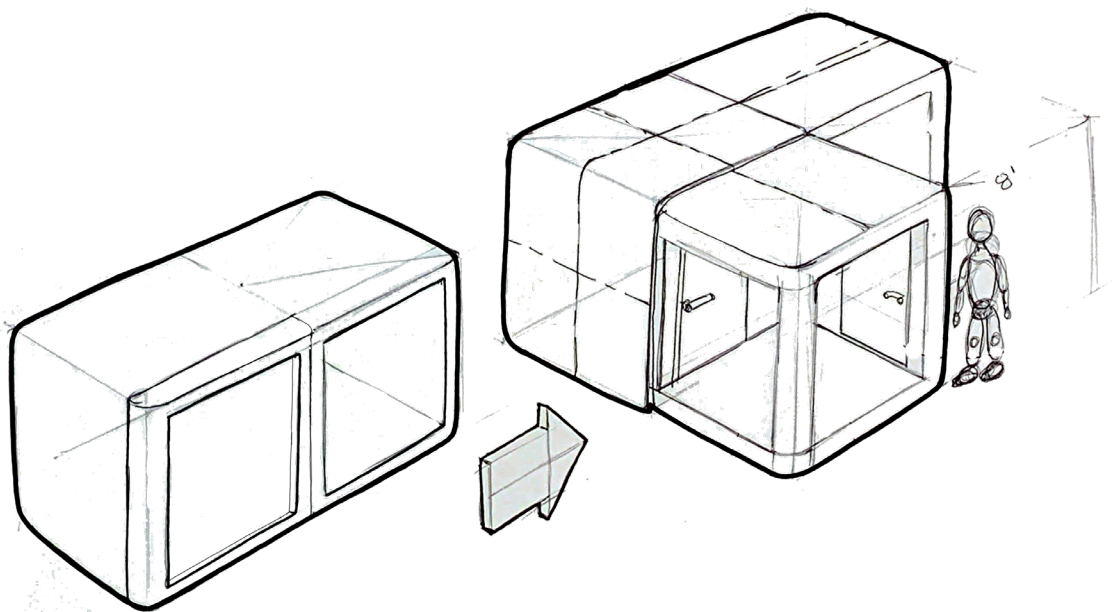
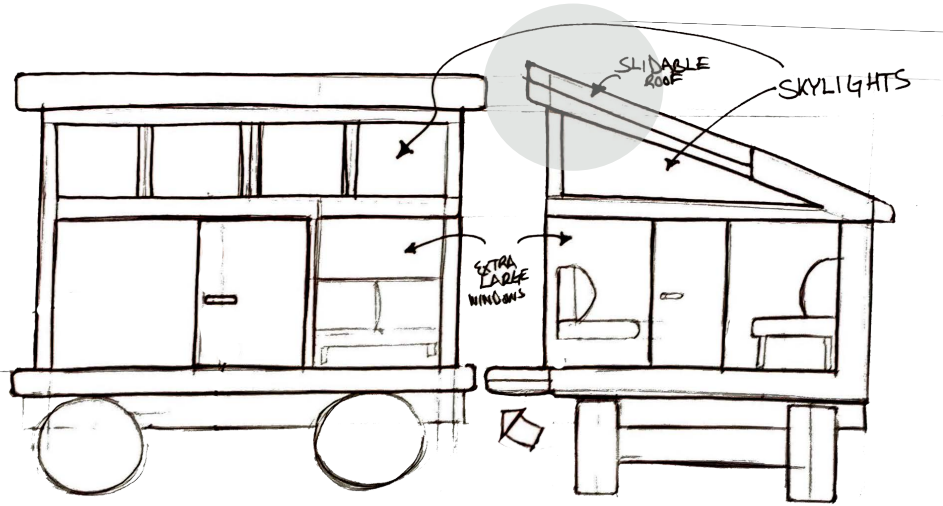
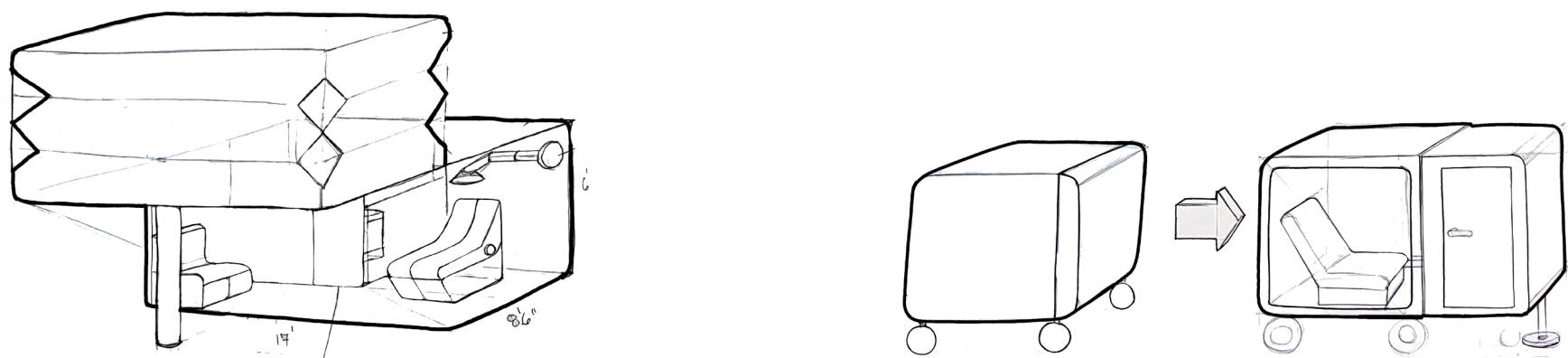


Wearable Tech



Sketches

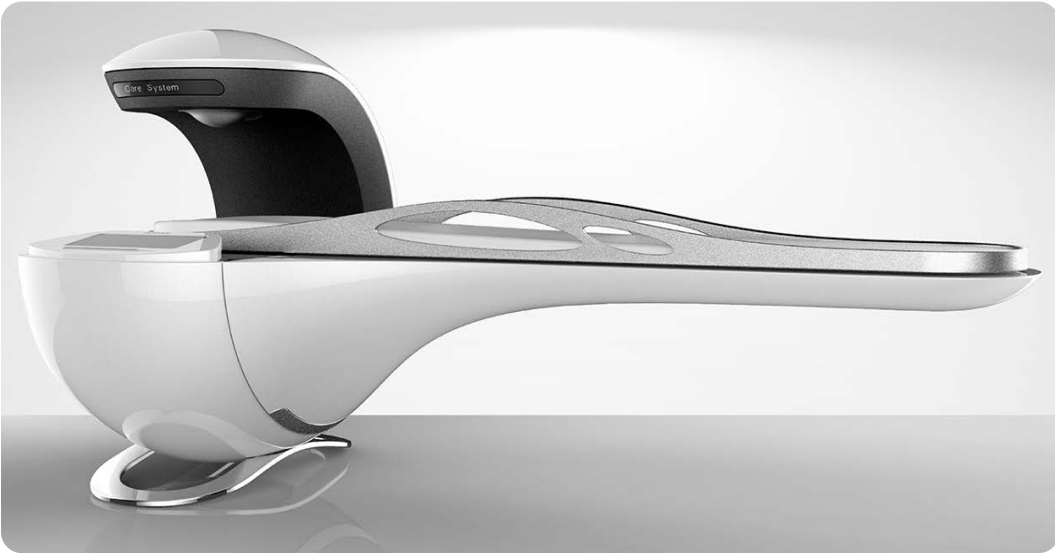
Flexible Exam Rooms will be standard by 2030



Body Scanner

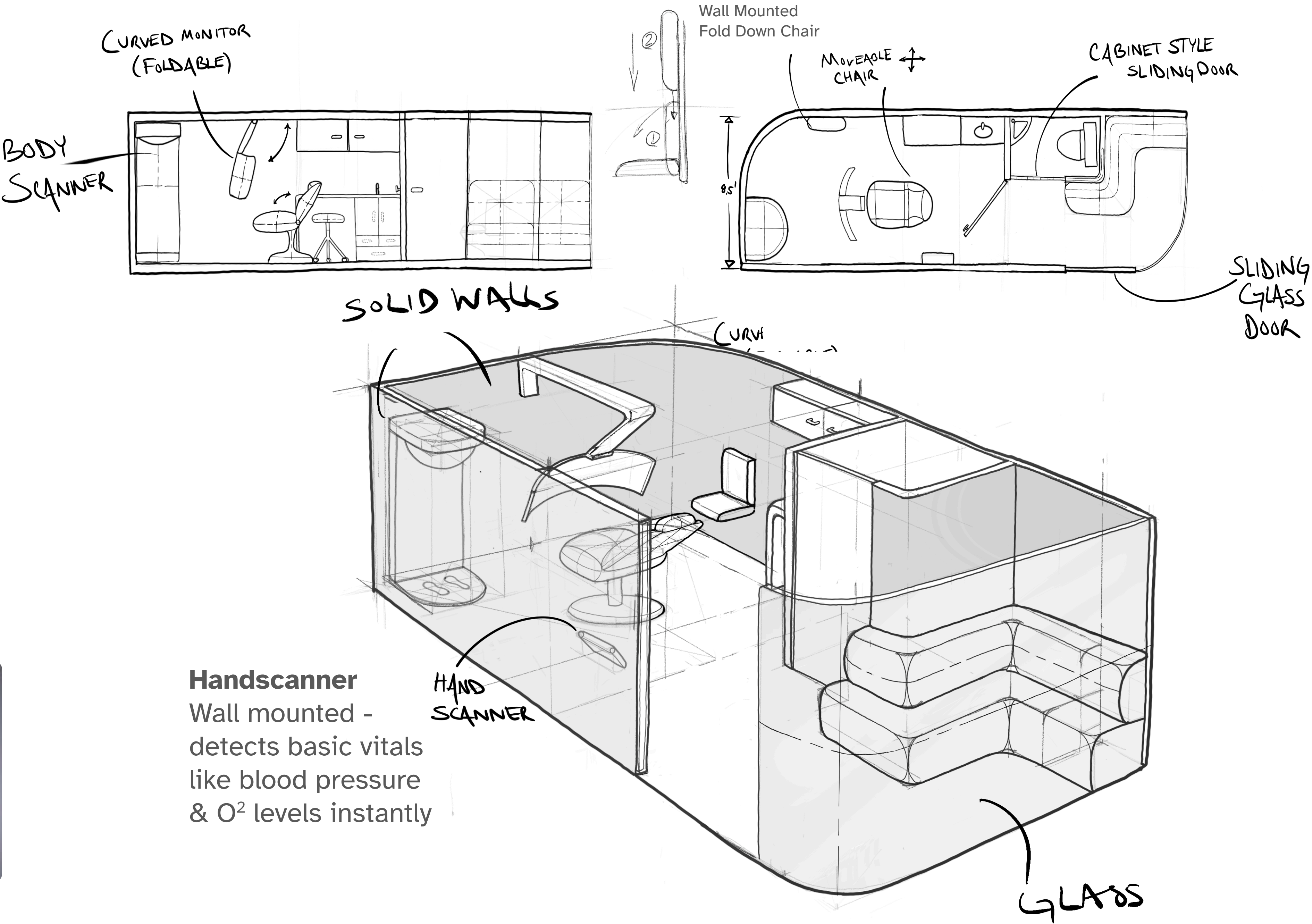
Full scan of all organs, bones, lungs, systems, etc. *even with clothes on.*

Detects body metrics (and changes), infection/illness, swelling, cancer



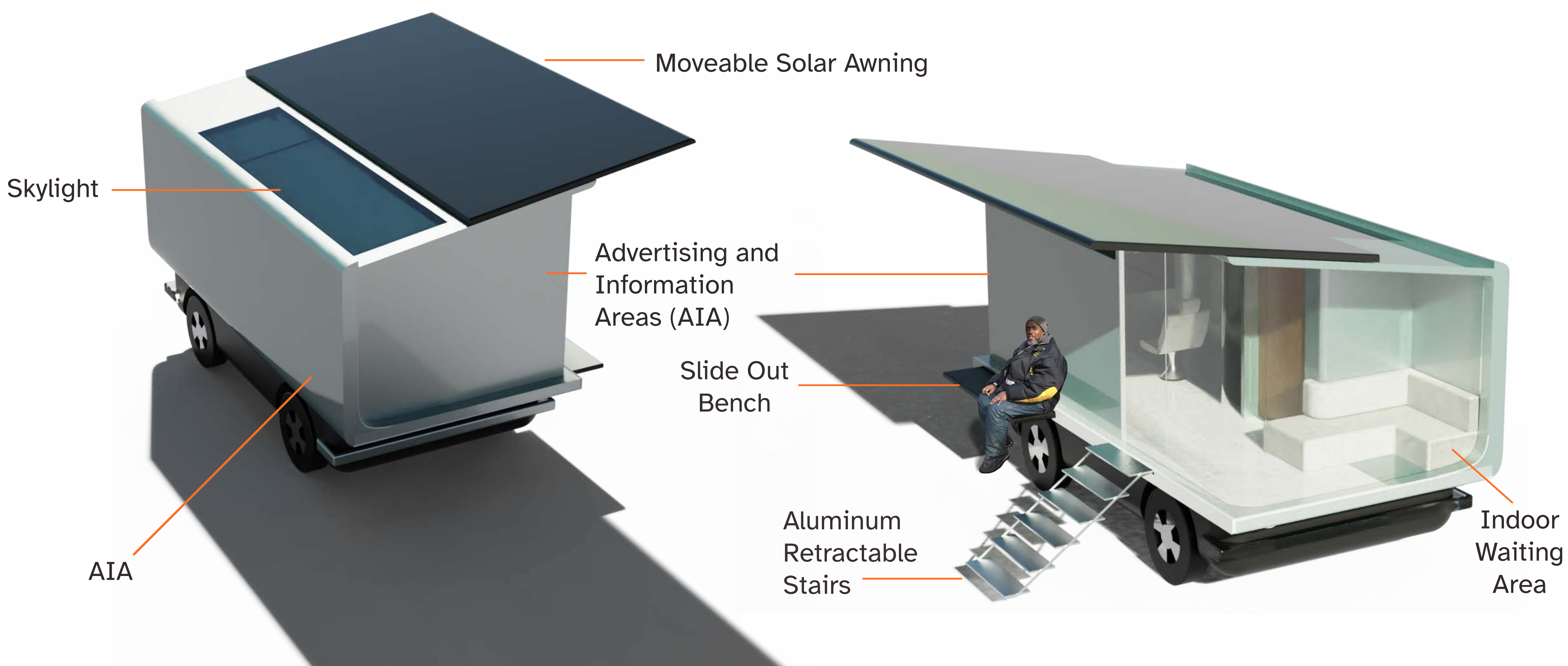
Integration of Data Points

Complete picture of wearables, scans, observations



The Autonomous Mobile Health Unit

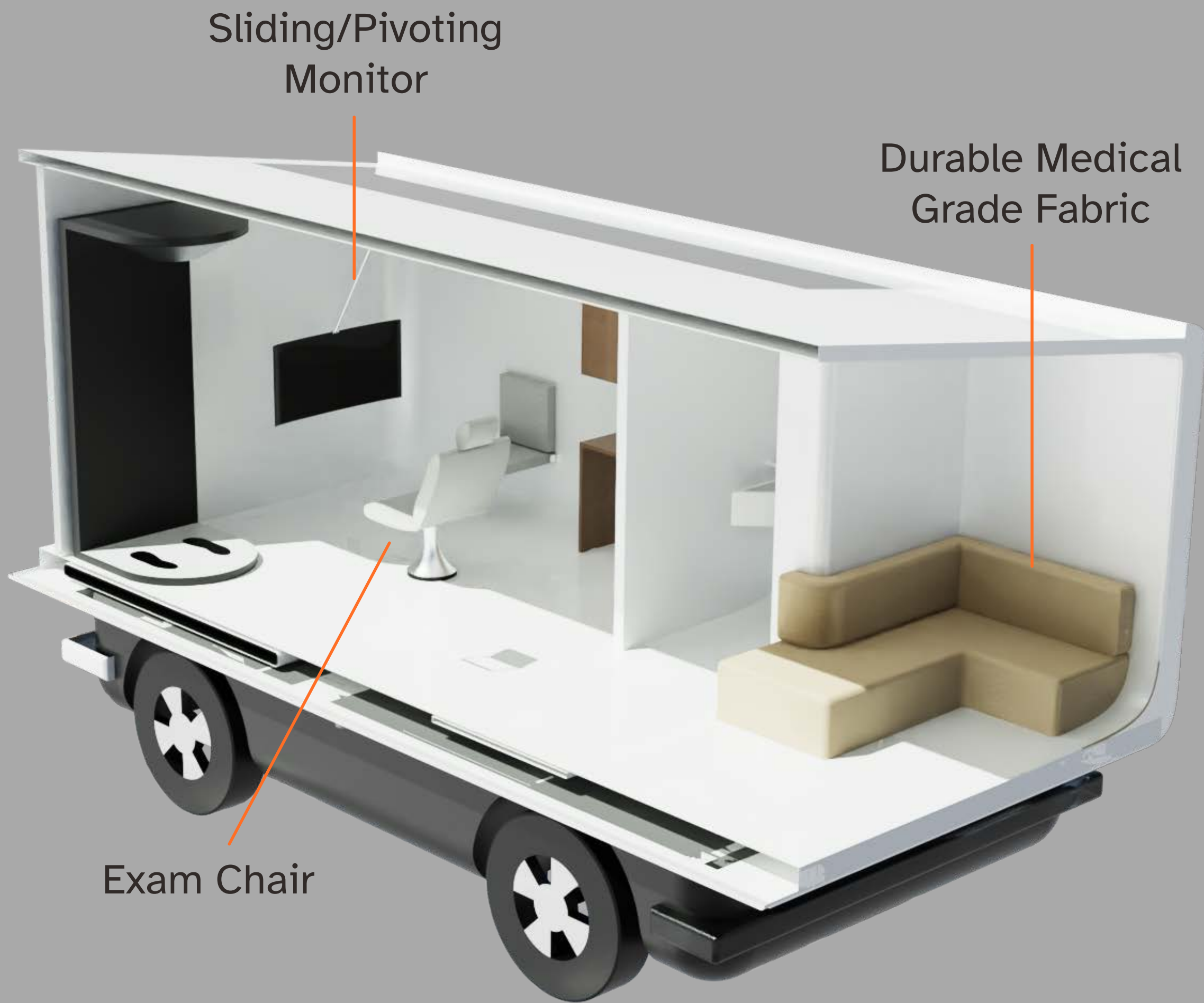
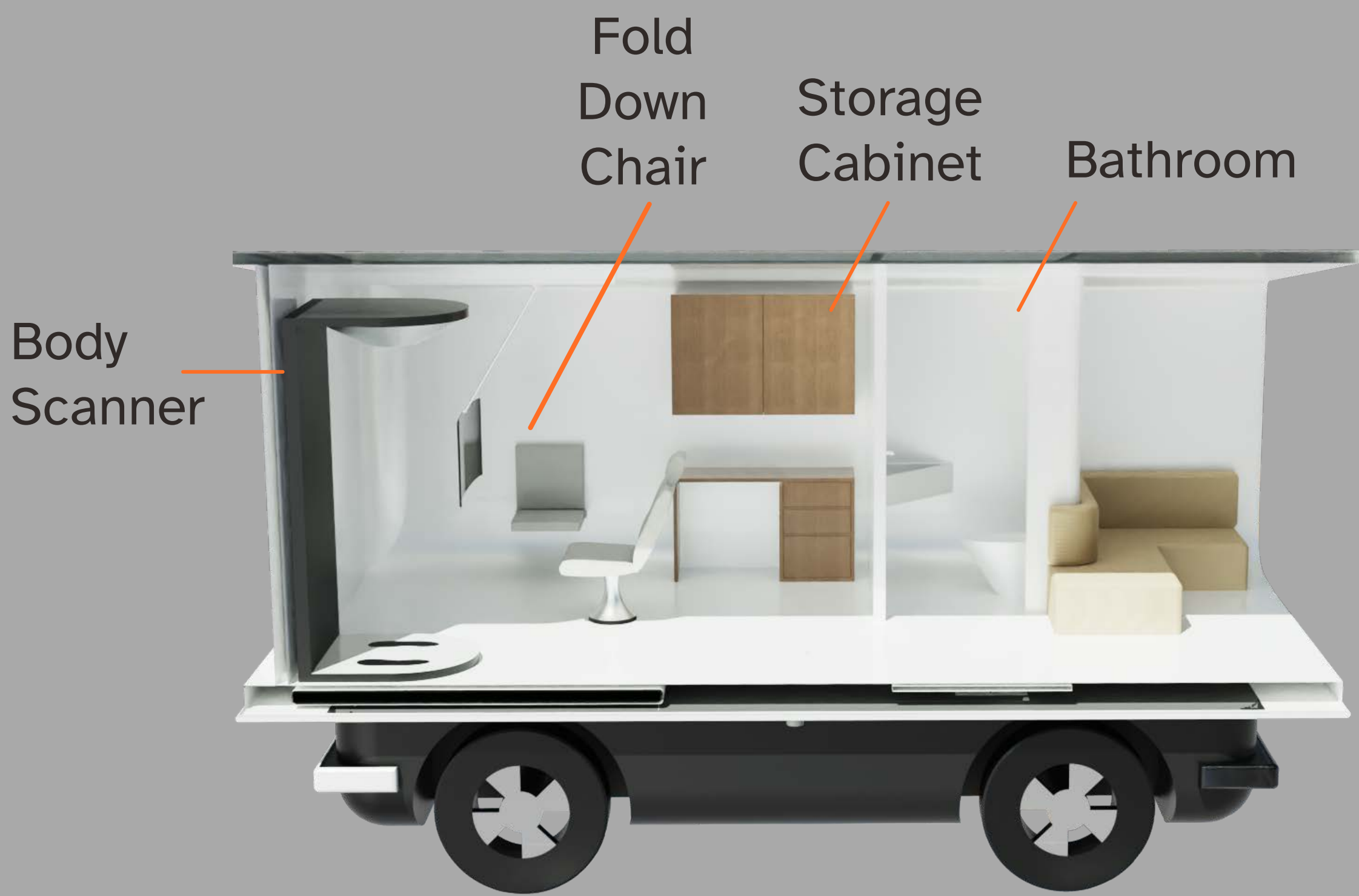
Patient Mode (Parked)



General Dimensions
19' x 8.5' x 12'

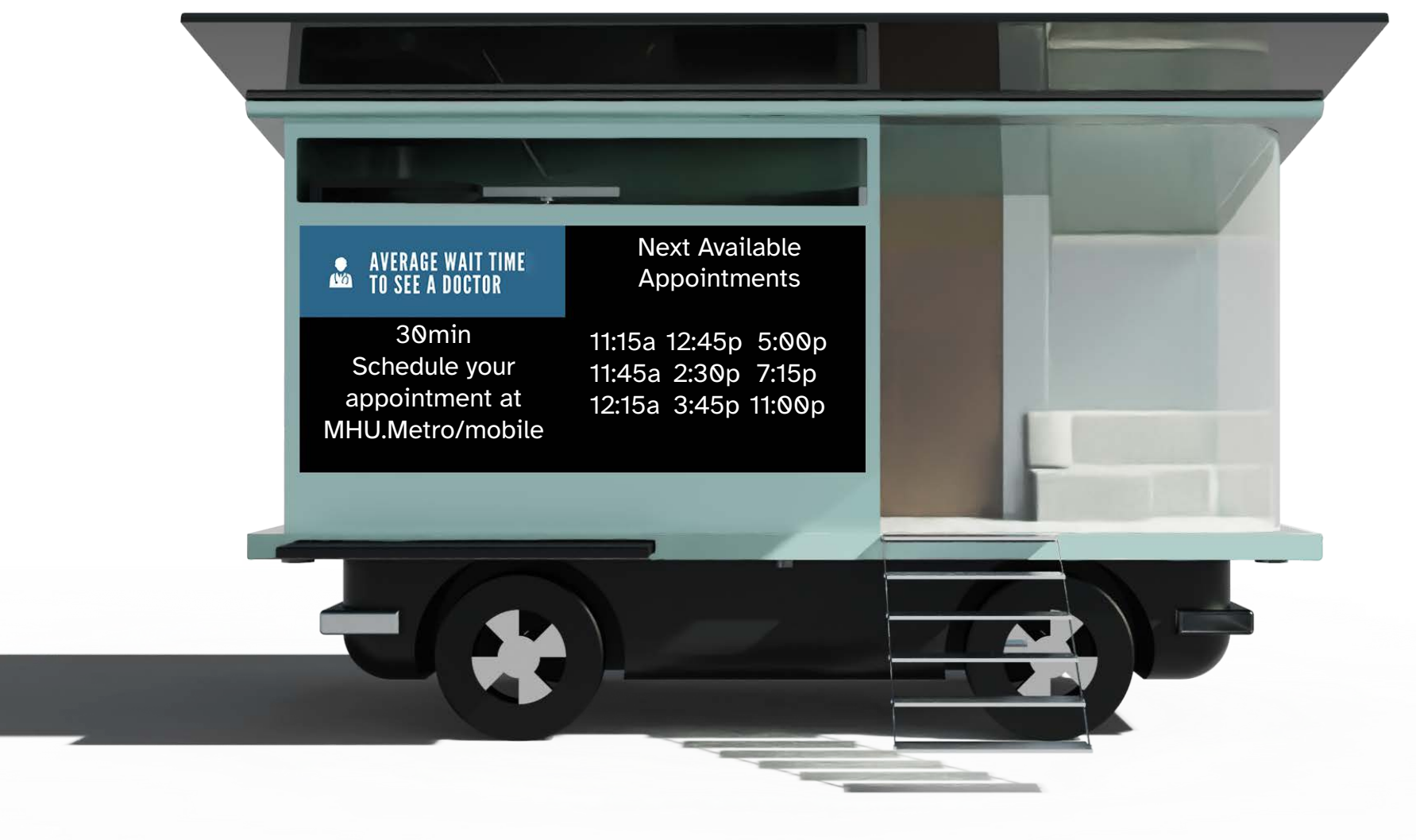
The Autonomous Mobile Health Unit

Interior



The Autonomous Mobile Health Unit

Patient Mode (Parked)



Integrated Lighting Modes (Exterior)

- Mint Green - General Health Appointments
- Red - Emergency Medical Operation & Transport

Advertising Space

Back: 120ft²
Front: 66ft²
Side: 85ft²





Nathaniel Spencer Hess

Born in Jackson Hole, Wyoming, the great outdoors was a big part of my childhood. I learned about sustainable practices such as leave no trace from an early age as well as an appreciation for products that are easy to use, durable and modular.

As an early career industrial designer, I know I have much to learn - my design intention is to better our world through openness and collaboration using sustainable materials and processes. I see design as enriching and elevating our cultures and societies to higher bounds.

With a background in professional and amateur sports, academia, and business experience, I believe I bring to the table unique value and perspective, and I look forward to contributing to a better, more sustainable world through design.



+1-303-913-7888 // nathanielhessdesign@gmail.com

Resume

Education

Metropolitan State University of Denver

Bachelor of Science in Industrial Design

- GPA: 3.89, *magna cum laude*

Denver, Colorado

2018 – 2022

University of Denver

Bachelor of Science in Business Administration

- GPA: 3.4, Finance and Real Estate Majors

Denver, Colorado

2004 – 2008

Experience

Structural Packaging Designer

Express Die Supply, Inc.

- Communicated with clients daily to create steel rule dies for mass manufacturing for paper products, plastics, cosmetics, and food packaging industries. Created, evaluated, and adjusted custom die lines according to client specifications and requirements. Provided quotes and updated die lines for approval prior to in-house manufacture.
- Produced for manufacture 40+ dies weekly with a 24-hour turnaround on 90% of projects.

Sante Fe Springs, CA

August 2022 – November 2022

Randy Kilgore and Company

Business Development Coordinator

- Coordinating, managing, and maintaining insurance products by conducting financial illustrations, annual reviews and evaluations of insurance and investment needs of clients and recommending further action.
- Social media management and marketing to prospective clients including curation of content, creating advertising campaigns and compliance of materials with regulations.

Denver, Colorado

May 2015 – August 2018

City of Laramie – Parks and Recreation

Ice and Events Program Coordinator

- Responsible for the management of daily operations, user groups scheduling and programming activities. Interacted with the public daily while providing exemplary customary service and promoting the Parks and Recreation brand.
- Oversight of revenue and expense reporting, operational and provisional budgets. Achieved cost reductions of \$3,000 over three months.

Laramie, Wyoming

August 2014 – April 2015

Skills

Software

Solidworks
Rhino
Adobe Suite
Shapr3D
Procreate
Sketchbook Pro
Gravity Sketch
Keyshot
Microsoft Suite

Materials

Wood
Plastics
Metal
Rapid Prototyping
Model Making

Interests

Hiking/Climbing
Skiing
Supercars
Scientific News
Financial News
Video/Board Games
Social Events
LGBTQ Community



Thank You
For Your Time

NSH