

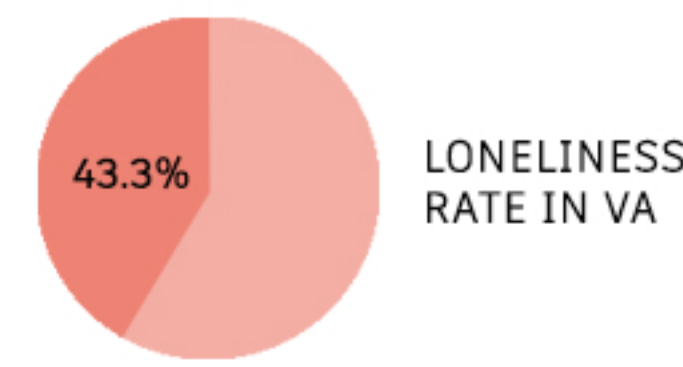
COMMON GROUND

(NEURO)BIOLOGY + HIKING

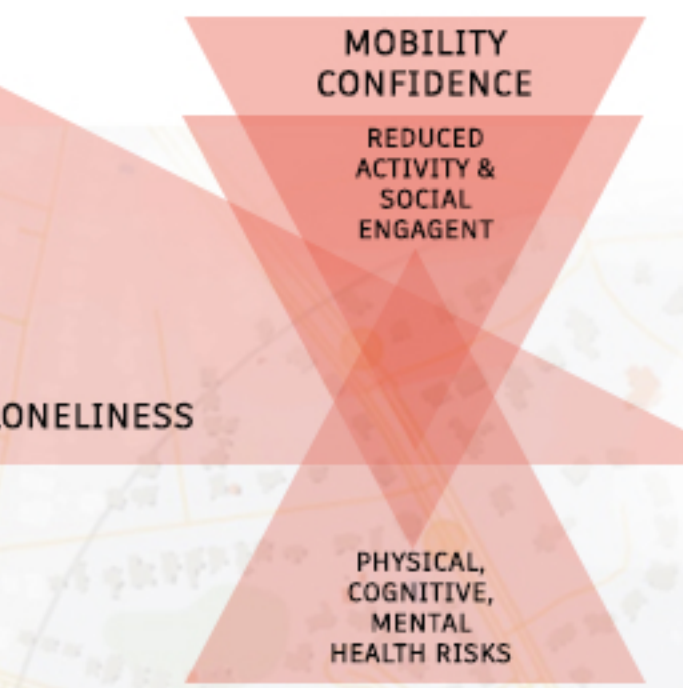
DESIGN CONCEPT

This project reimagines hiking as a neurobiological learning process within a controlled, immersive setting. A continuous path integrates varied terrains, inclines, and rhythmic challenges that simulate real-world hikes while strengthening procedural memory and mobility confidence. The space allows users to assess physical readiness, train for specific outdoor trails, and progressively build coordination, balance, and endurance in a safe environment. Beyond physical preparation, the design addresses stress, social isolation, and mobility anxiety by fostering shared goals, collective training, and community-based learning.

REGIONAL HEALTH PRIORITIES



Virginia has the third-highest rate of loneliness in the U.S.¹ Research shows that loneliness is closely linked to physical inactivity, lower mobility confidence, and increased cardiovascular risk.² With age, loneliness and declining mobility reinforce each other, reducing activity and social engagement.³ Common Ground addresses this cycle by building mobility confidence and meaningful social connection simultaneously.



SITE & POPULATION ANALYSIS



CITATIONS

- U.S. Census Bureau. Household Pulse Survey.
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- National Academies of Sciences, Engineering, and Medicine. (2020). Social Isolation and Loneliness in older adults. NCBI.
- Xue, Q. et al. (2024). Mobility limitations and cognitive decline in aging populations.
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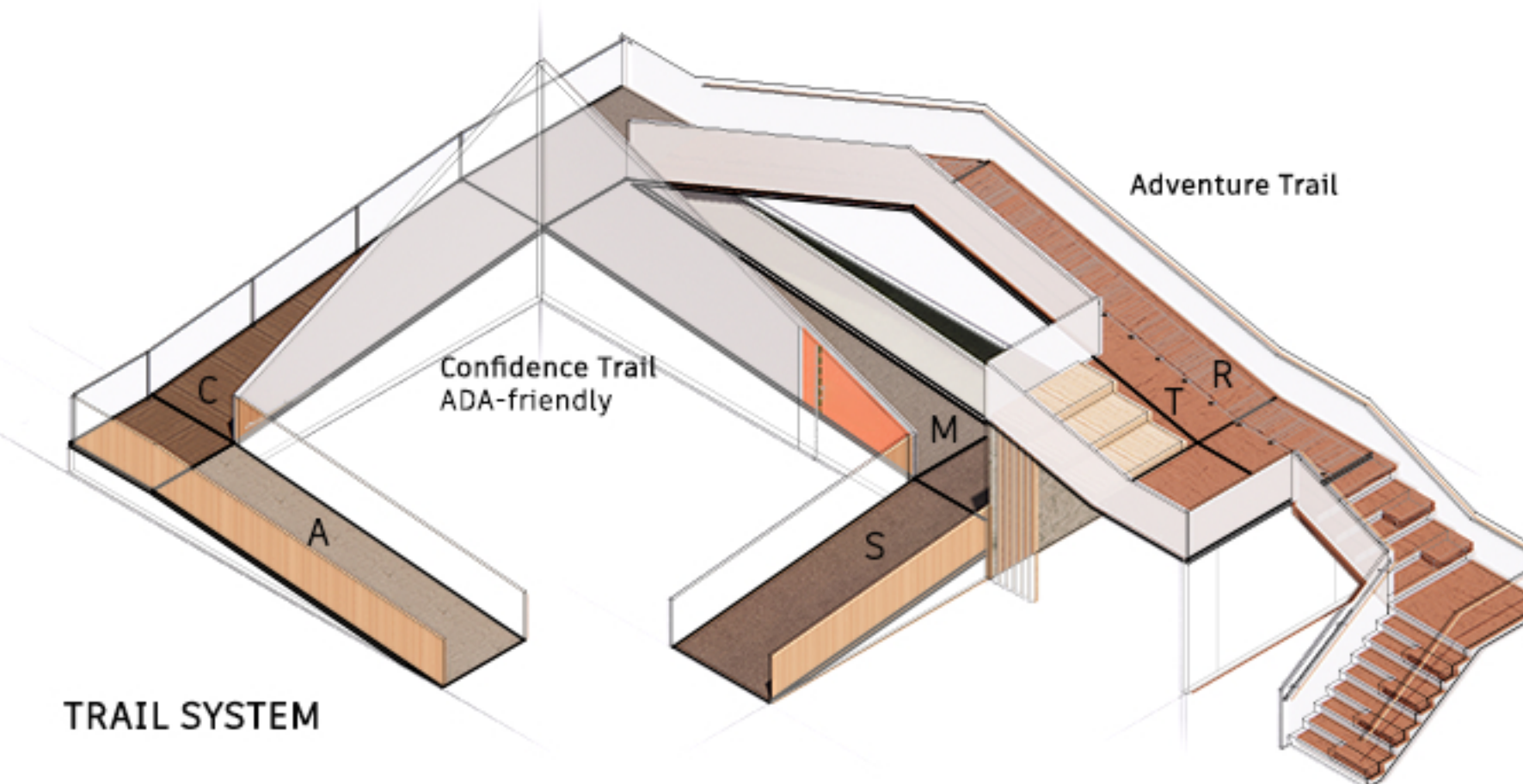
AXONOMETRIC VIEW

TRAIL SYSTEM

Common Ground includes two indoor hiking practice trails:

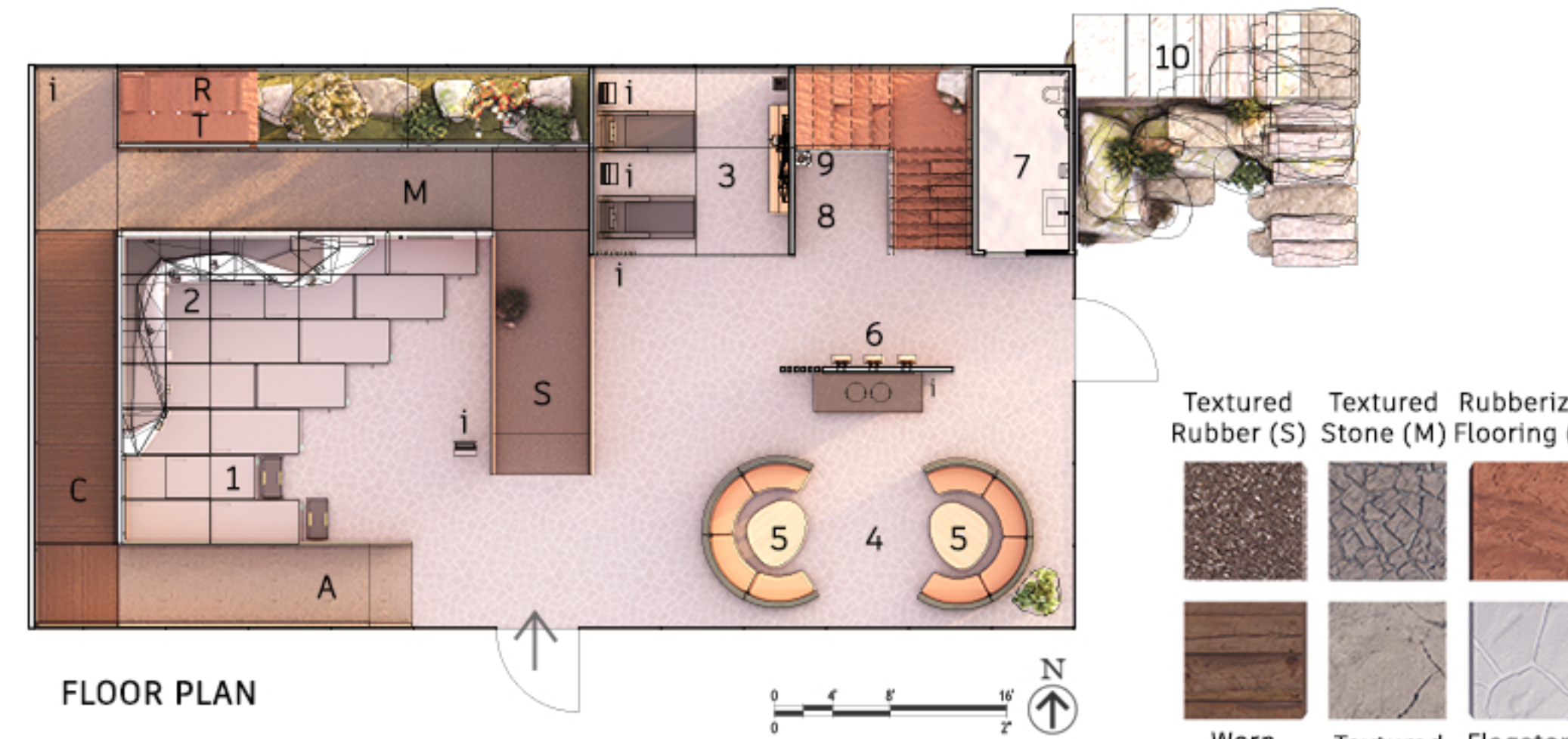
Confidence Trail: ADA-friendly trail comprised of a series of ramps with gradually increasing difficulty:
Smooth (S): Rubberized flooring
Moderate (M): Textured stone
Challenging (C): Worn wood
Advanced (A): Textured concrete

Adventure Trail: A non-ADA trail with rugged rubberized flooring, divided into two sections:
Rugged (R): Rubberized flooring that simulates natural soil
Technical (T): Rubberized flooring with a more uneven surface for a challenging hike



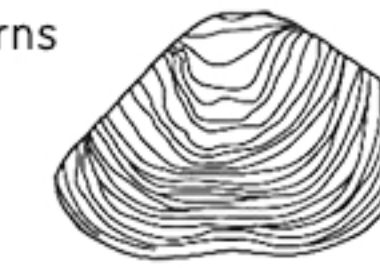
FLOOR PLAN LEGEND

- Balance Training Area with crash mats and handrails
- Climbing Wall
- Self-Assessment Fitness Corner with touchscreen displays and an AI-powered personal training app
- Social Area for knowledge-sharing sessions and trip planning
- VR Hike Visualization Tables with augmented reality glasses
- Equipment Wall with weighted vests and poles
- ADA-Compliant Restroom
- Connection Point Board for finding hiking partners
- Water Filling Station
- Outdoor Rock Stair leading to the roof, with integrated seating that doubles as an outdoor training area



WHY HIKING & NEUROBIOLOGY?

Hiking is a brain skill, not just a fitness goal.¹¹ Confidence on the trail comes from procedural memory, as the nervous system repeats movement patterns until they feel automatic. While gyms build strength and outdoor trails demand confidence, there is currently no hybrid space that prepares both brain and body for real hiking while fostering social connection the way Common Ground does.



PARTI

USER NARRATIVE

TOM

Tom is a 43-year-old hiker preparing for his most ambitious goal yet – the Appalachian Trail. Hiking has always supported his mental and emotional well-being. After an afternoon on the golf course with his dad, he stops by Common Ground. He completes a Self-Assessment, and his training plan syncs to his app and wearable device. During training, he monitors performance and progress in real time. At the Connection Point board, he joins an Appalachian Trail group and connects with another visitor preparing for the same hike. Together, they explore the route in VR to better understand elevation and terrain.

BARBARA

Barbara is 62 and recovering from a major leg injury. It's her first visit to Common Ground, and she wants to start safely. At the entrance and at the start of each trail area, she scans QR codes that explain how the space works, the level of difficulty, and what each zone is designed to train. Seeing the Info Board that the Confidence Trail is ADA-friendly reassures her. After a Readiness Assessment, she begins gradual ramps and controlled movement, rebuilding balance and stability. Later, she meets her friend in the social area to plan future hikes together.



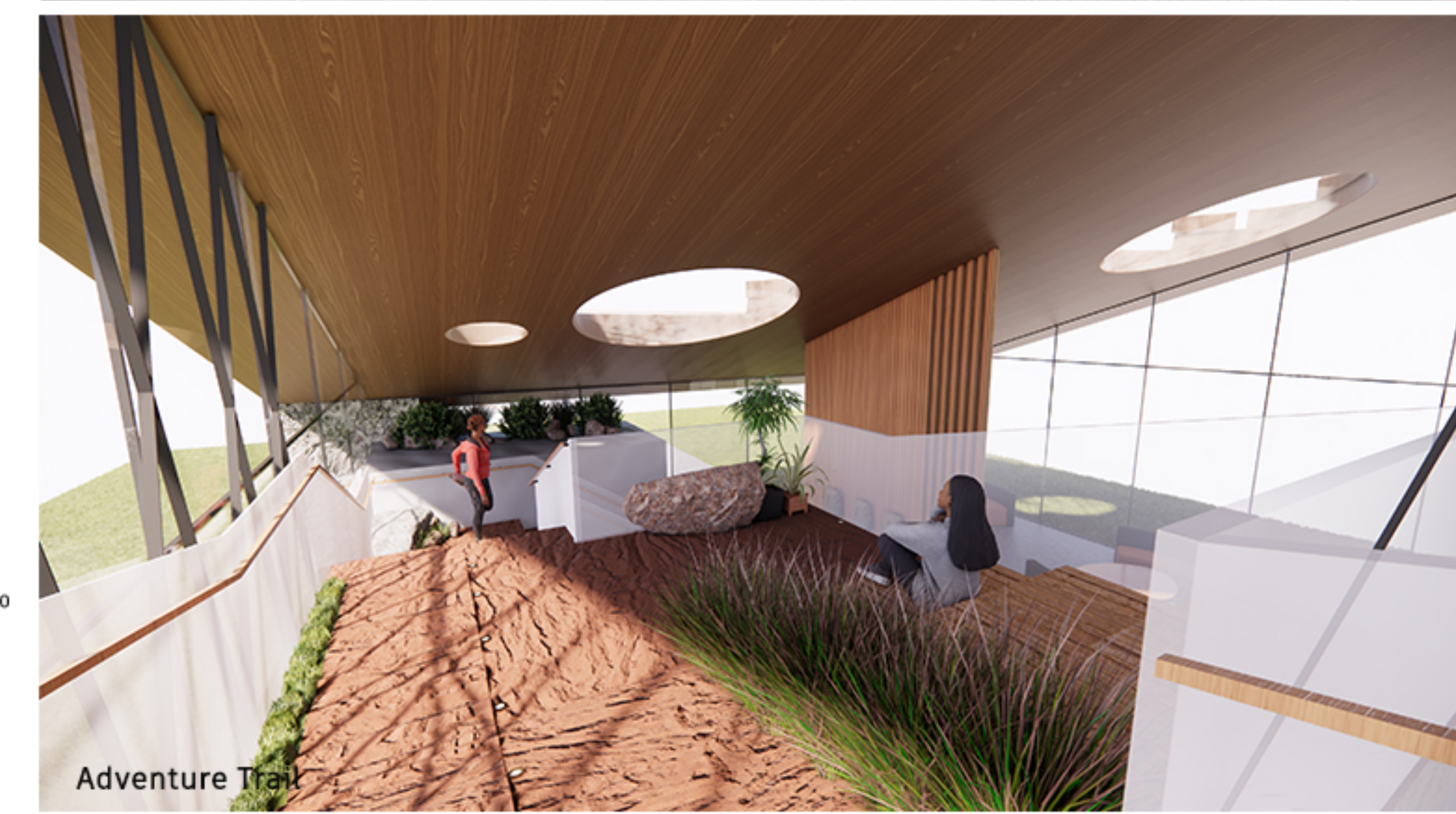
SUPERMIND CONCEPT

- A. Embodied Learning**
Movement, balance, and repetition through practice
- B. Self-Assessment & Awareness**
Awareness of physical readiness, limits, and progress
- C. Shared Skill Practice**
Learning alongside others with similar goals
- D. Community Knowledge Exchange**⁸
Sharing experience, tips, and lived knowledge
- E. Technology-Supported Learning**⁹
Mobile apps and VR tools visualize hikes, track progress, and support planning

Together, these layers form a living learning ecosystem where movement, feedback, community, and technology work as a collective mind, reinforcing well-being, and lifelong learning.

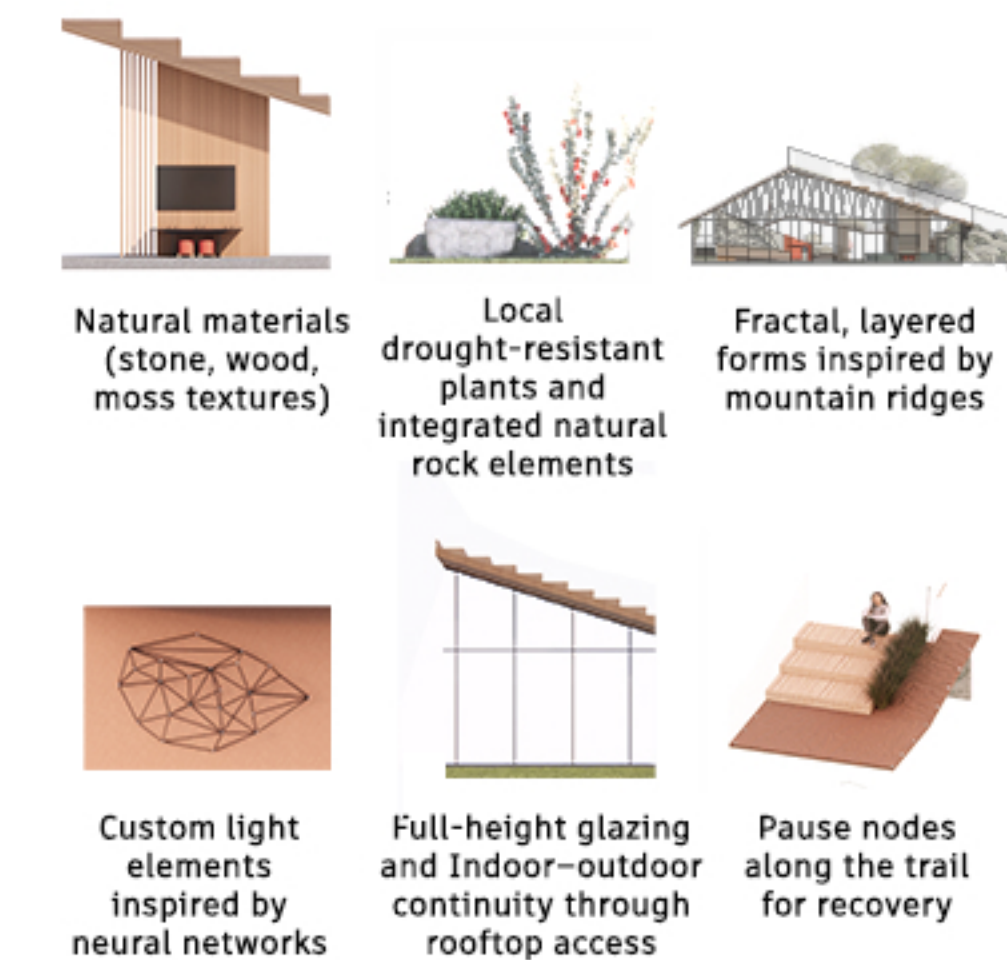
QR codes, Info Boards, and Touchscreen Displays (i on the Floor Plan) explain how to use the space in a way that feels comfortable and accessible for each user.

AI-generated image using a detailed prompt written by the poster's creators



RESTORATIVE & BIOPHILIC STRATEGIES

The environment supports nervous system¹⁰ regulation through:



Prospect-refuge relationships create a sense of safety that enables learning.