

Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

Phase 1

Phase 2

Phase 3

Next Step

Summer Internship Project

The Cliff Front Panel Evaluation and Redesign

By
Aniket Sarangdhar (08633802)
Interaction Design

Guide
Mr. Akash Karani & Mr. Vinay Savla,
Vertical Infinity.

Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

Phase 1

Phase 2

Phase 3

Next Step

Adventure Fitness Equipments

- First Product: **the-Cliff**
- Simulates rock climbing at any indoor location.
- Various Intensities



Project Brief

User Study

Design Goals

Evaluation

Phase 1

Phase 2

Phase 3

Next Step

Phase 1: Redesign the current front panel's Graphics and human interface flow without any addition of hardware or change in position of hardware.

Phase 2: Redesign the front panel's Graphics and human interface flow with minimal hardware changes and add new features.

Phase 3: Conceptualize from scratch a new versatile feature-rich cost-effective human interface for the CLIFF.



Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

Phase 1

Phase 2

Phase 3

Next Step

User Study at Gym

Focus: What do the trainers explain about operating the machine when the member is using the machine for the first time?

Method: Contextual inquiry (formed a master-apprentice model)

Focus: What information do they look for from the interface? How do they judge their progress?

Method: Contextual inquiry

Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

Phase 1

Phase 2

Phase 3

Next Step

Findings from User Study at Gym

- Once shown how to operate, user must be able to operate the machine.
- The number of steps to be remembered must be very less.
- User observes only those information displays (Time / Distance / speed / Calories etc.) which suits his/her aim.
- The display information motivates users.
- Trainers motivate members to stretch their limits

Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

Phase 1

Phase 2

Phase 3

Next Step

Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

Phase 1

Phase 2

Phase 3

Next Step

- User must be able to easily remember the procedure to make desired settings and start the machine.

- User must be able to spend more time on exercise and spend less time with the interface to make desired operations.

- User must be able to do the desired exercise on the cliff.

- User must be motivated from time to time to push his/her limits.

Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

Phase 1

Phase 2

Phase 3

Next Step



Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

Phase 1

Phase 2

Phase 3

Next Step

Time elapsed,
Time left,
Time of each segment
(for prog. mode)

Height climbed,
Height left,
Countdown before start.



Calories burnt,
Calories left,
Weight

Heart Rate limit,
Current Heart
Rate.

Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

Phase 1

Phase 2

Phase 3

Next Step



Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

Phase 1

Phase 2

Phase 3

Next Step

- Not just Muscles but mind is also involved.
- It is very tough to operate the Panel with precision while climbing.



Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

Phase 1

Phase 2

Phase 3

Next Step



Vertical Infinity

Project Brief

User Study

Design Goals

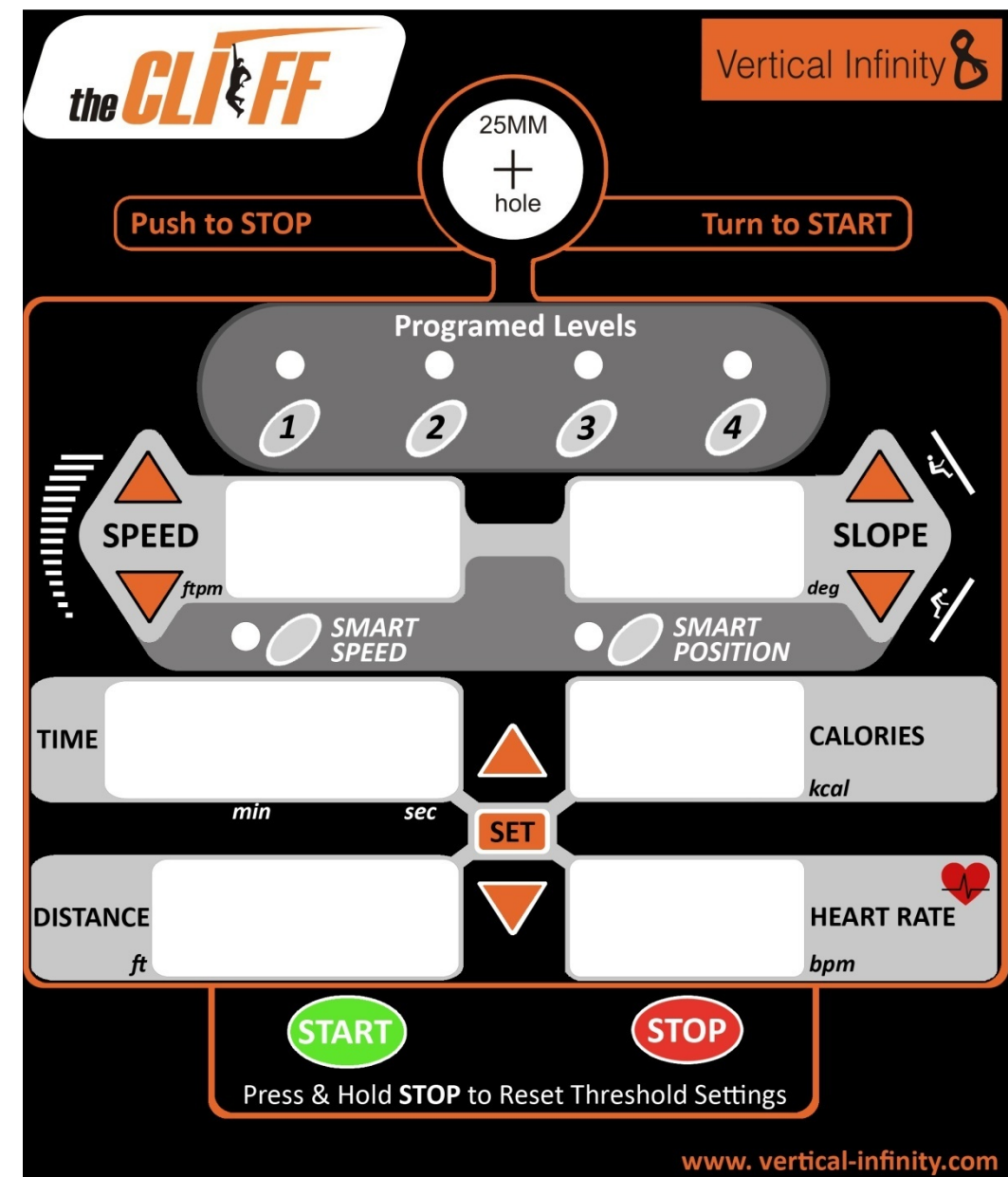
Evaluation

Phase 1

Phase 2

Phase 3

Next Step



Vertical Infinity

Project Brief

User Study

Design Goals

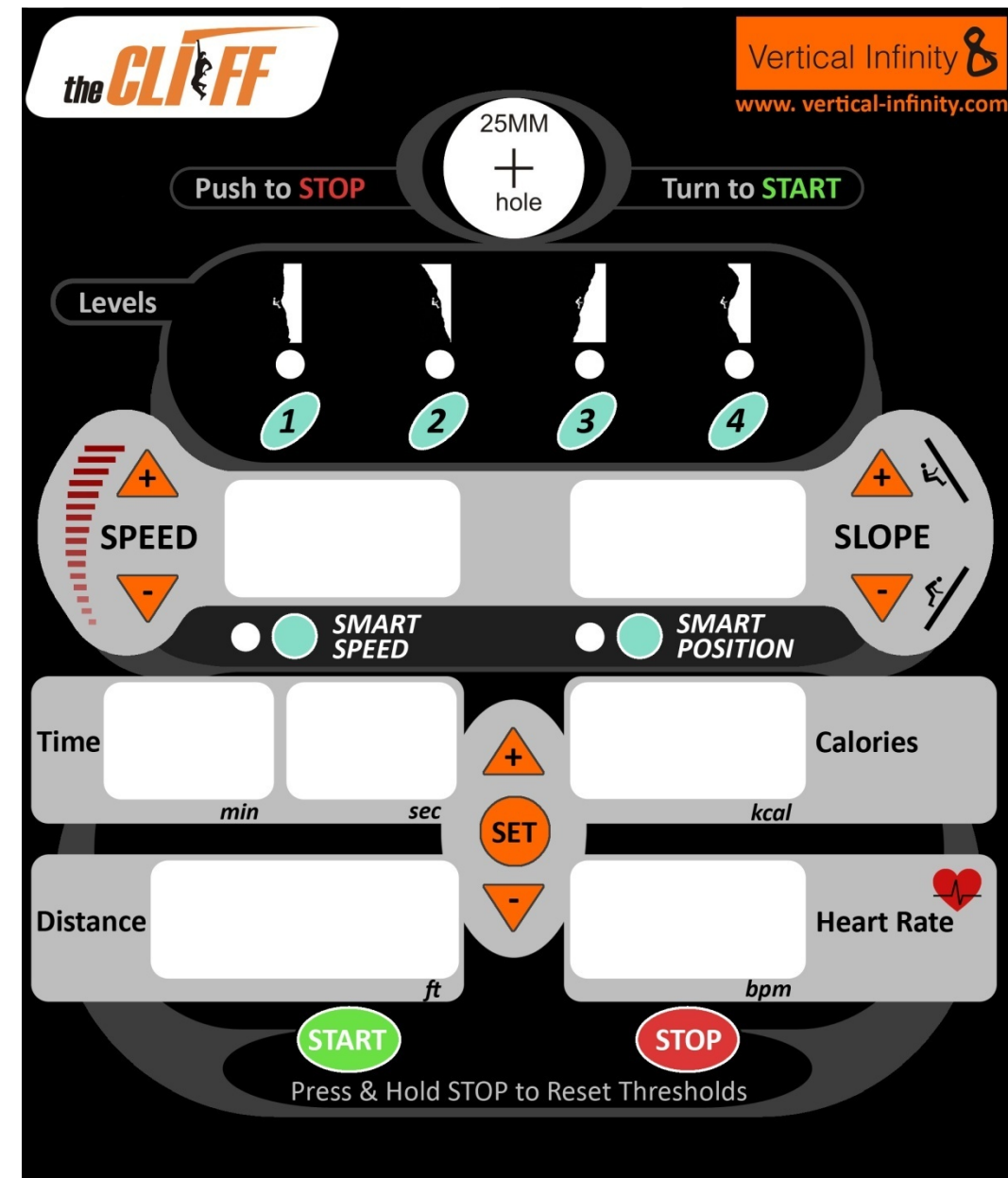
Evaluation

Phase 1

Phase 2

Phase 3

Next Step



Vertical Infinity

Project Brief

User Study

Design Goals

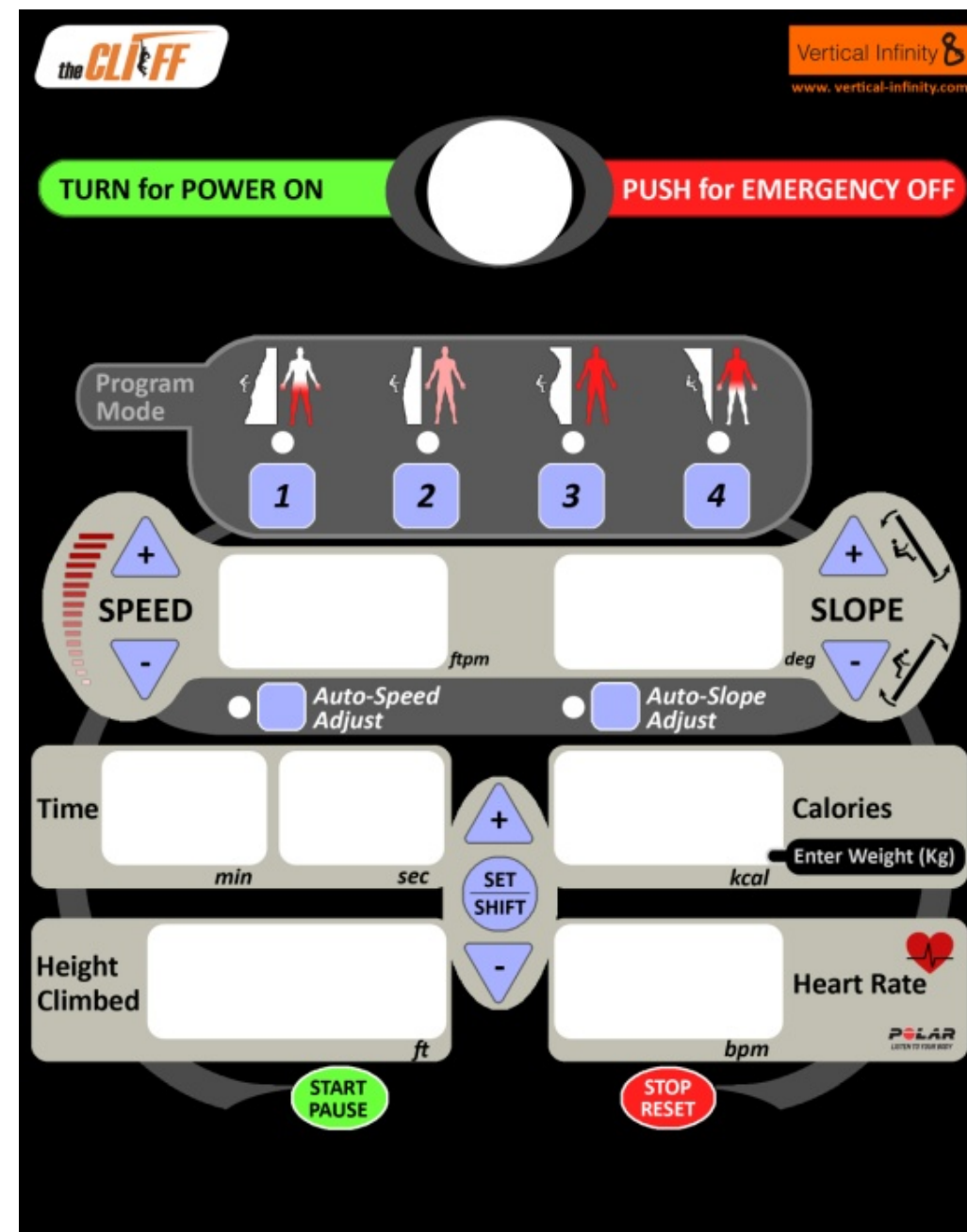
Evaluation

Phase 1

Phase 2

Phase 3

Next Step



Vertical Infinity

Project Brief

User Study

Design Goals

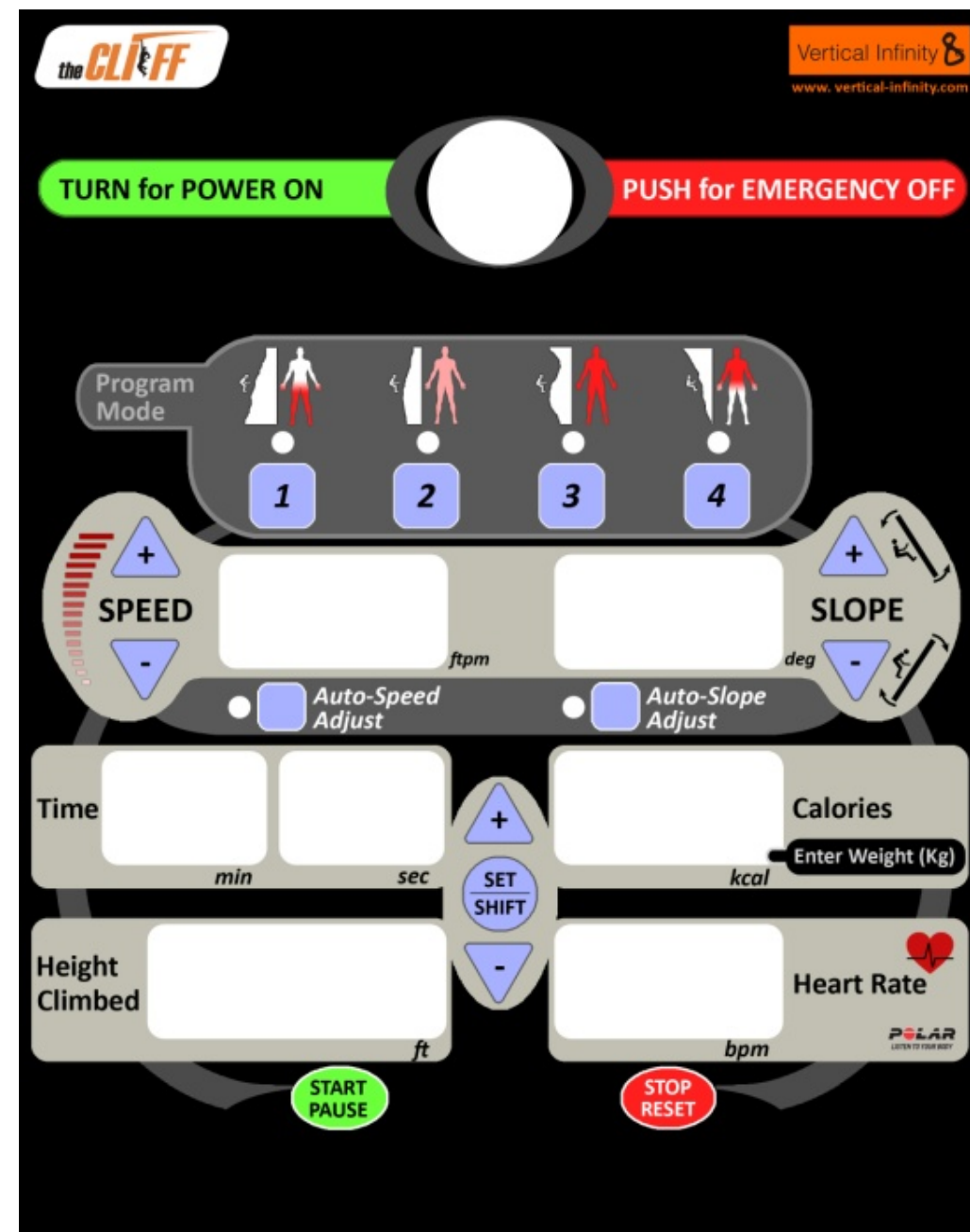
Evaluation

Phase 1

Phase 2

Phase 3

Next Step



Vertical Infinity

Project Brief

User Study

Design Goals

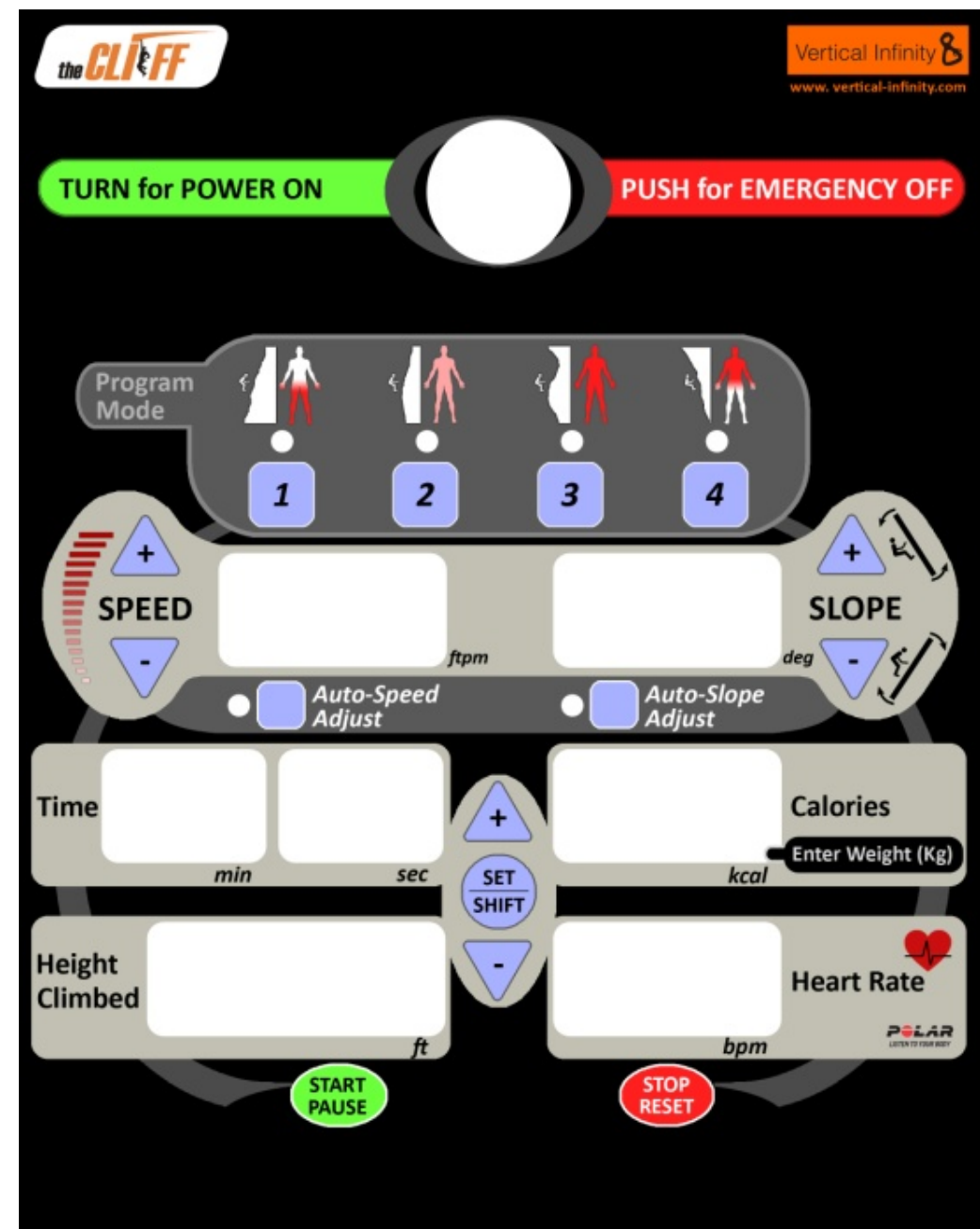
Evaluation

Phase 1

Phase 2

Phase 3

Next Step



Vertical Infinity

Project Brief

User Study

Design Goals

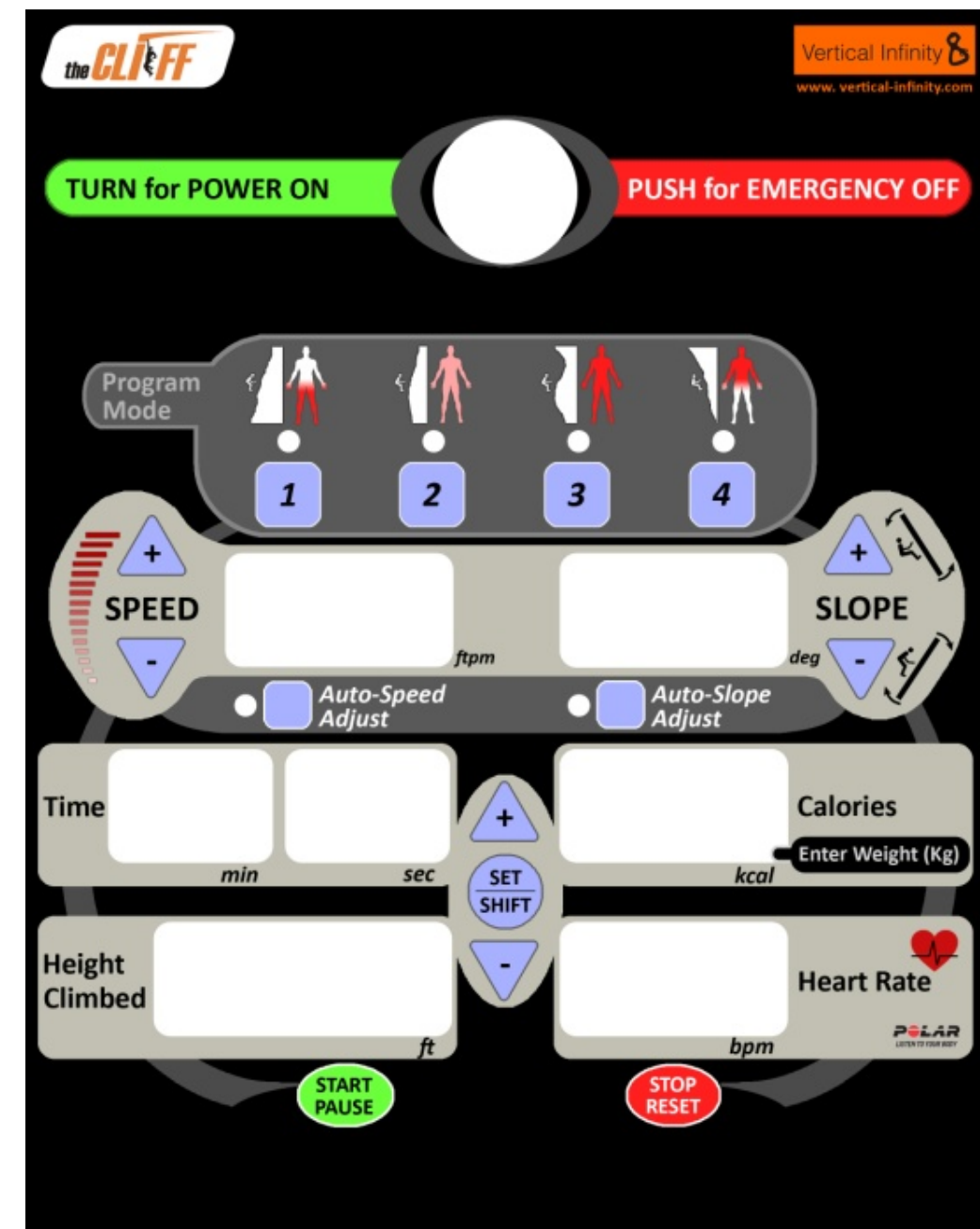
Evaluation

Phase 1

Phase 2

Phase 3

Next Step



Vertical Infinity

Project Brief

User Study

Design Goals

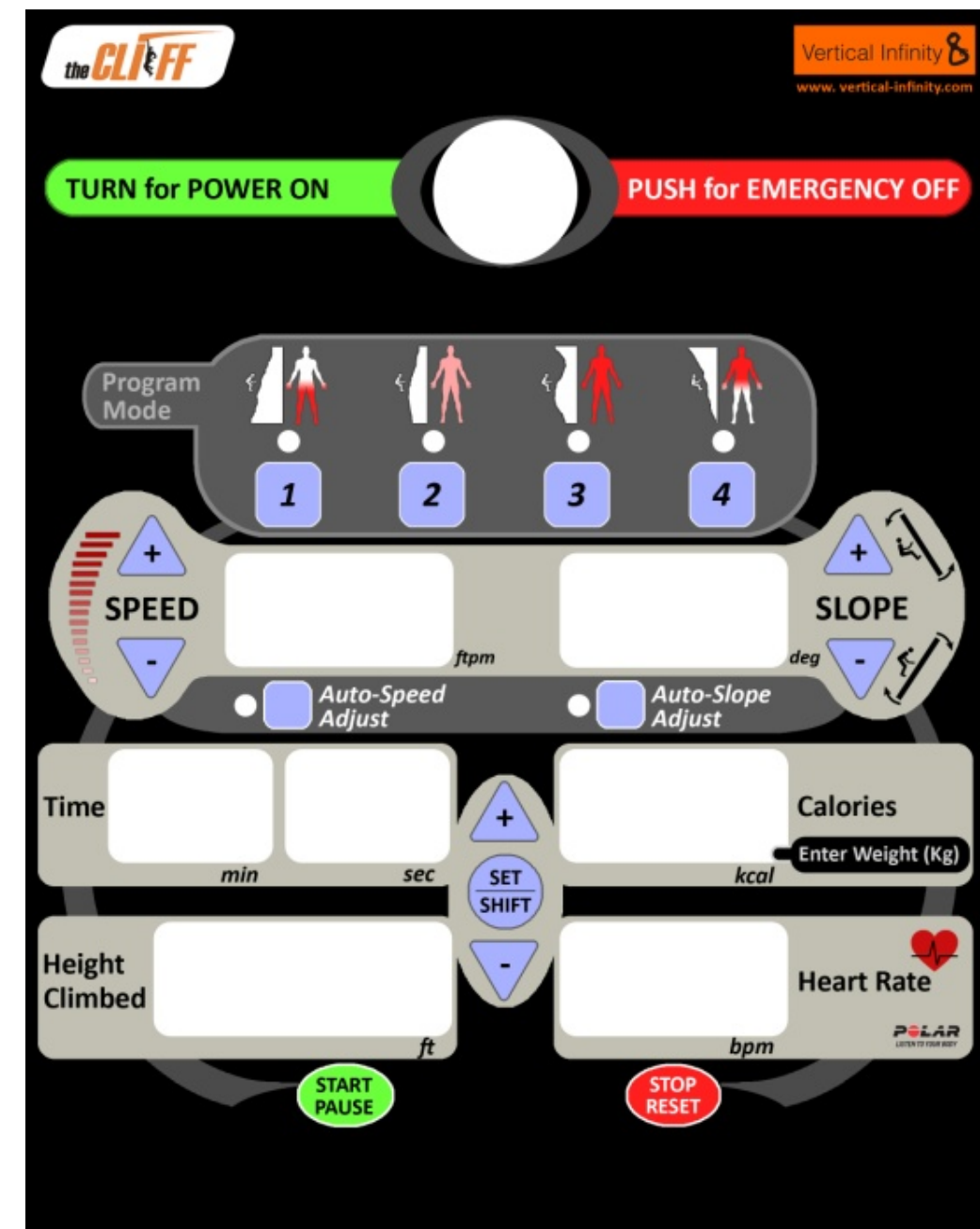
Evaluation

Phase 1

Phase 2

Phase 3

Next Step



Vertical Infinity

Project Brief

User Study

Design Goals

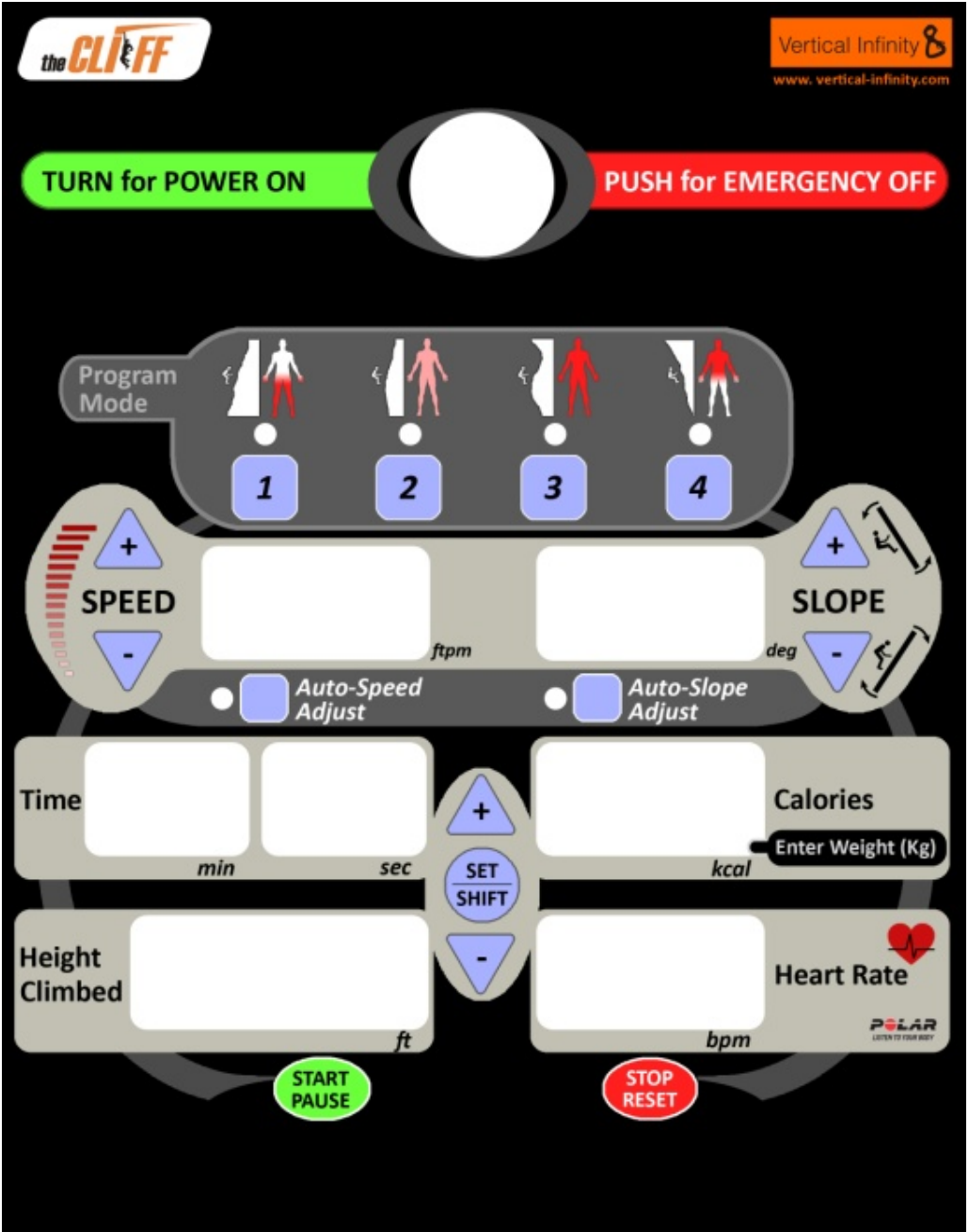
Evaluation

Phase 1

Phase 2

Phase 3

Next Step



Vertical Infinity

Project Brief

User Study

Design Goals

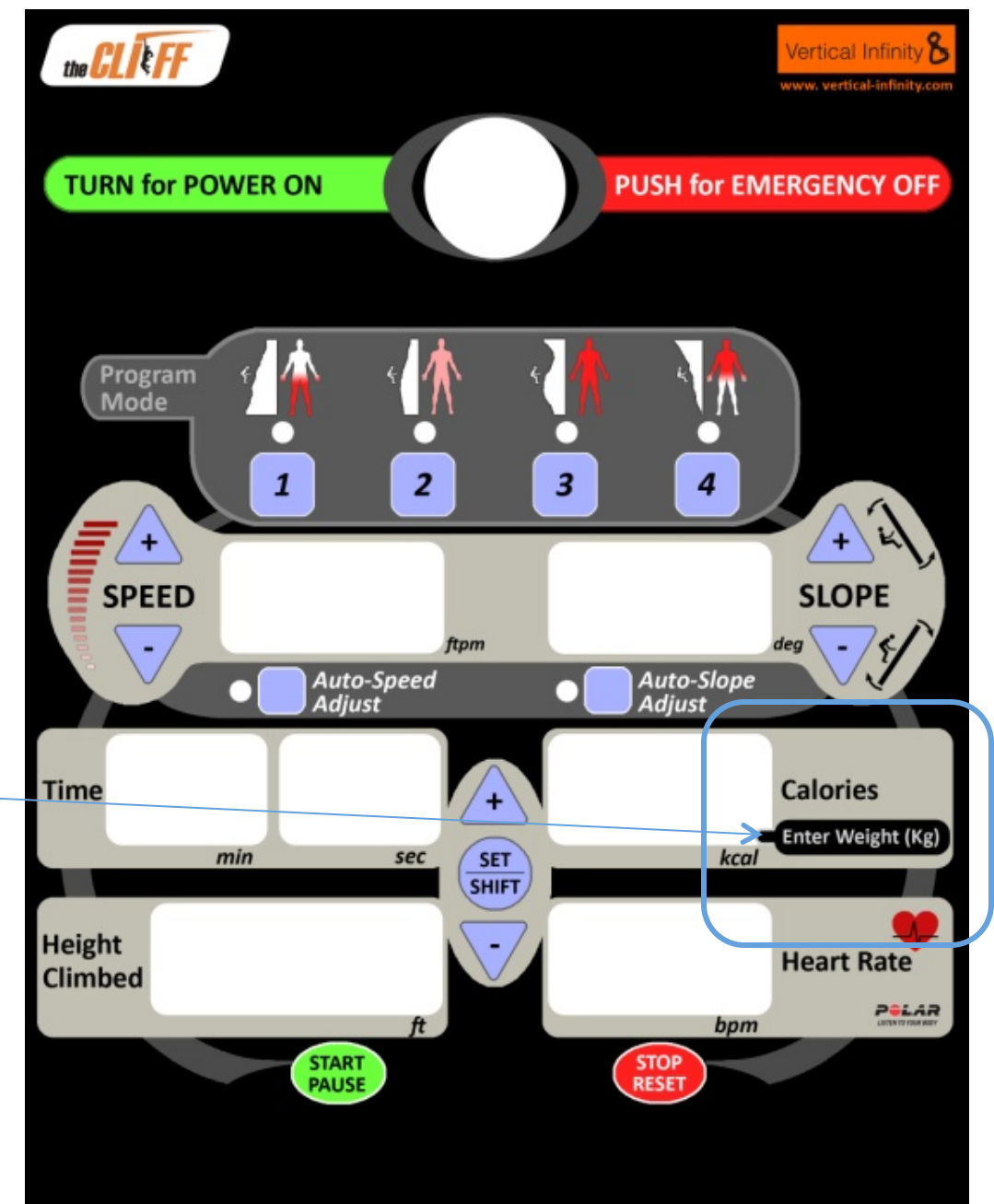
Evaluation

Phase 1

Phase 2

Phase 3

Next Step



Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

Phase 1

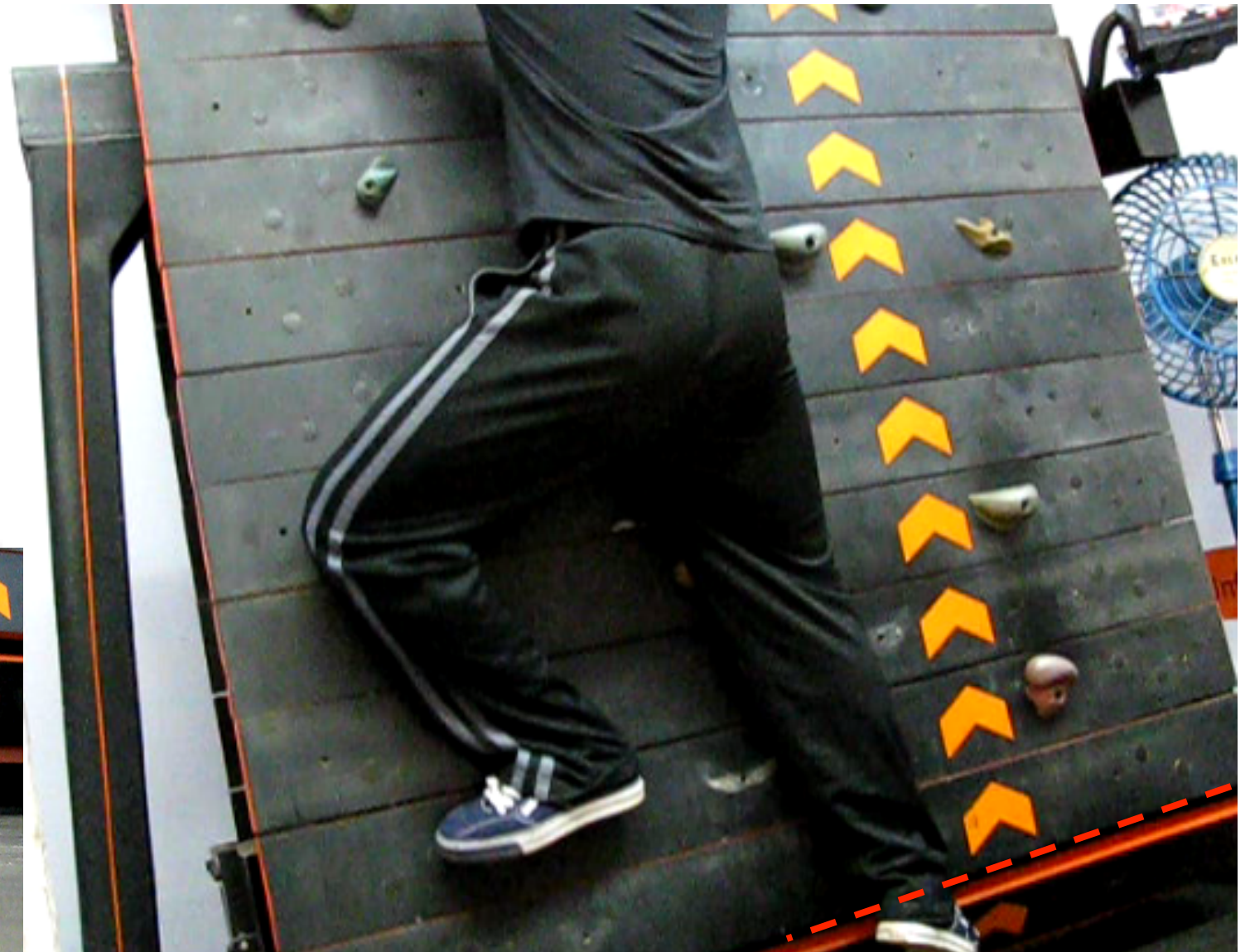
Phase 2

Phase 3

Next Step

Safety Sensor

If this sensor is cut, then the machine will go into pause mode



Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

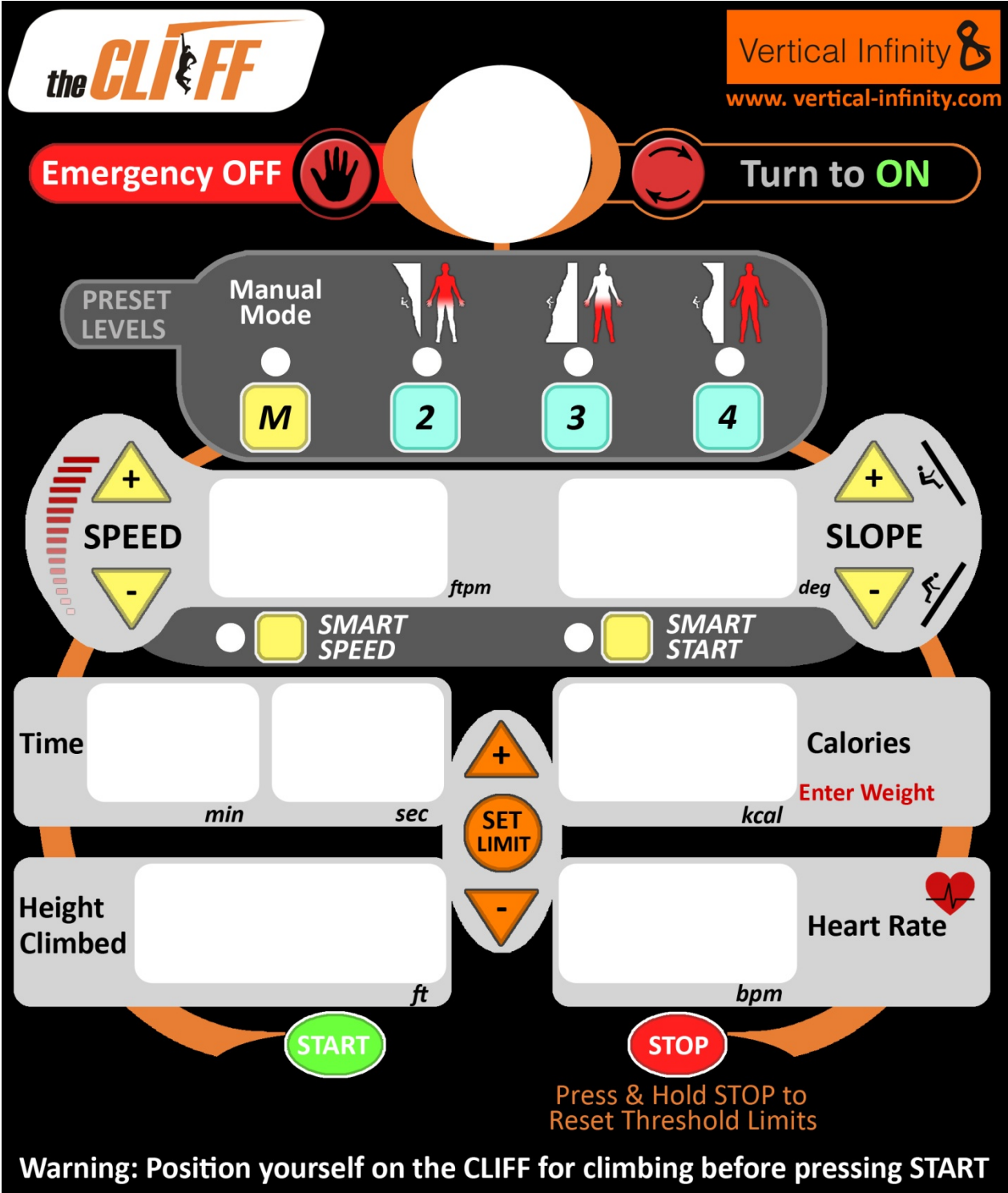
Phase 1

Phase 2

Phase 3

Next Step

Interface flow



Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

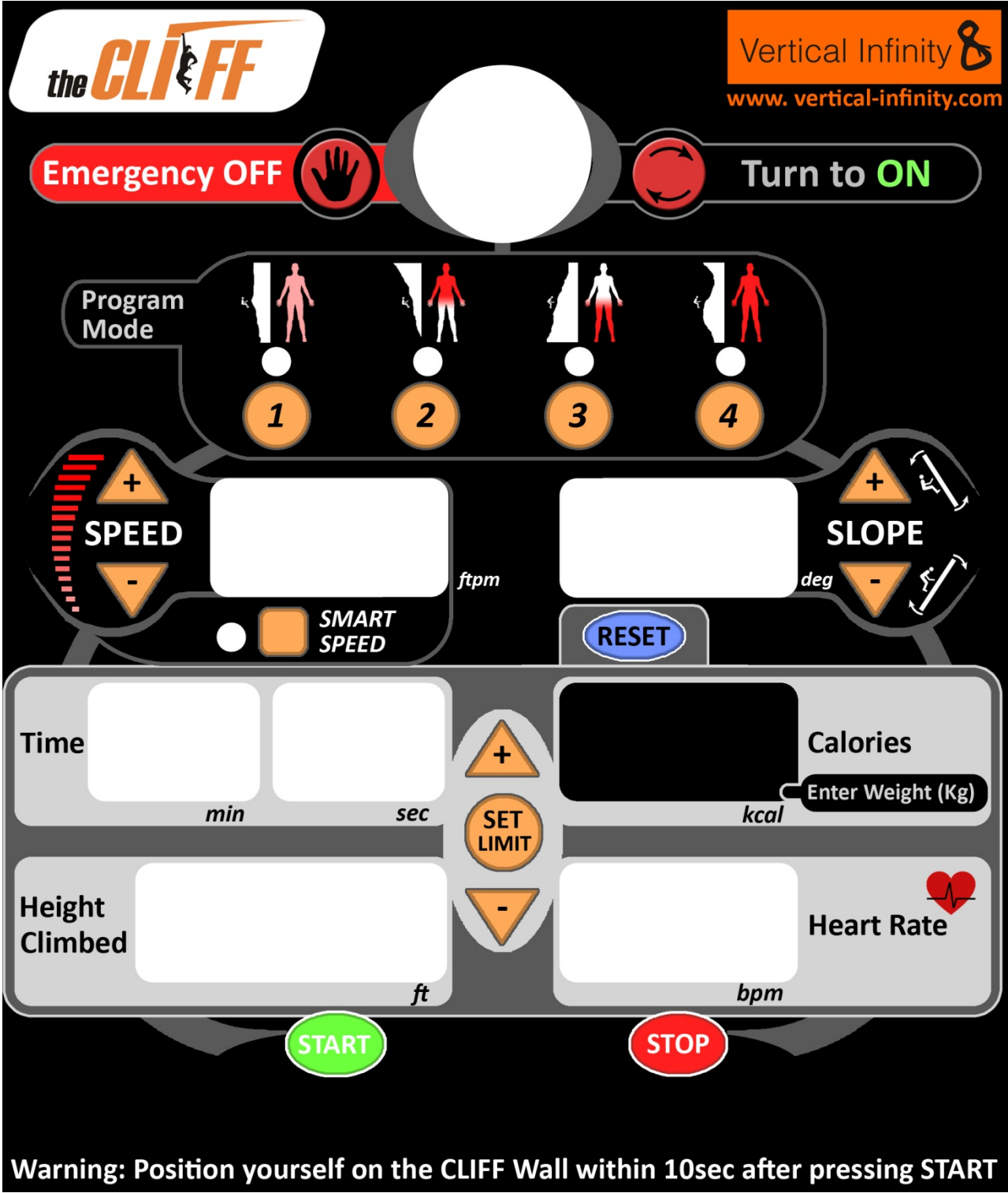
Phase 1

Phase 2

Phase 3

Next Step

Interface flow



Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

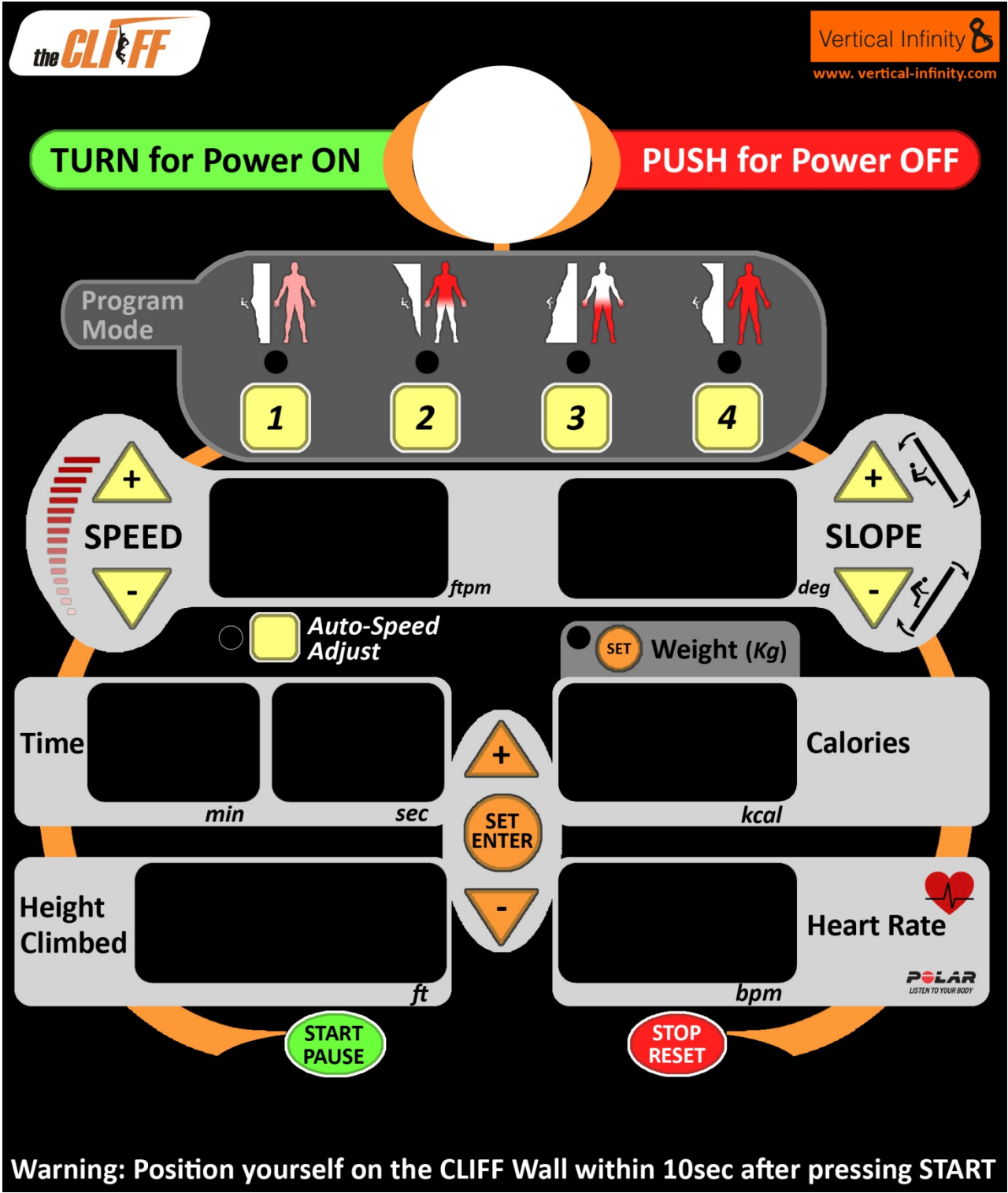
Phase 1

Phase 2

Phase 3

Next Step

Interface flow



Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

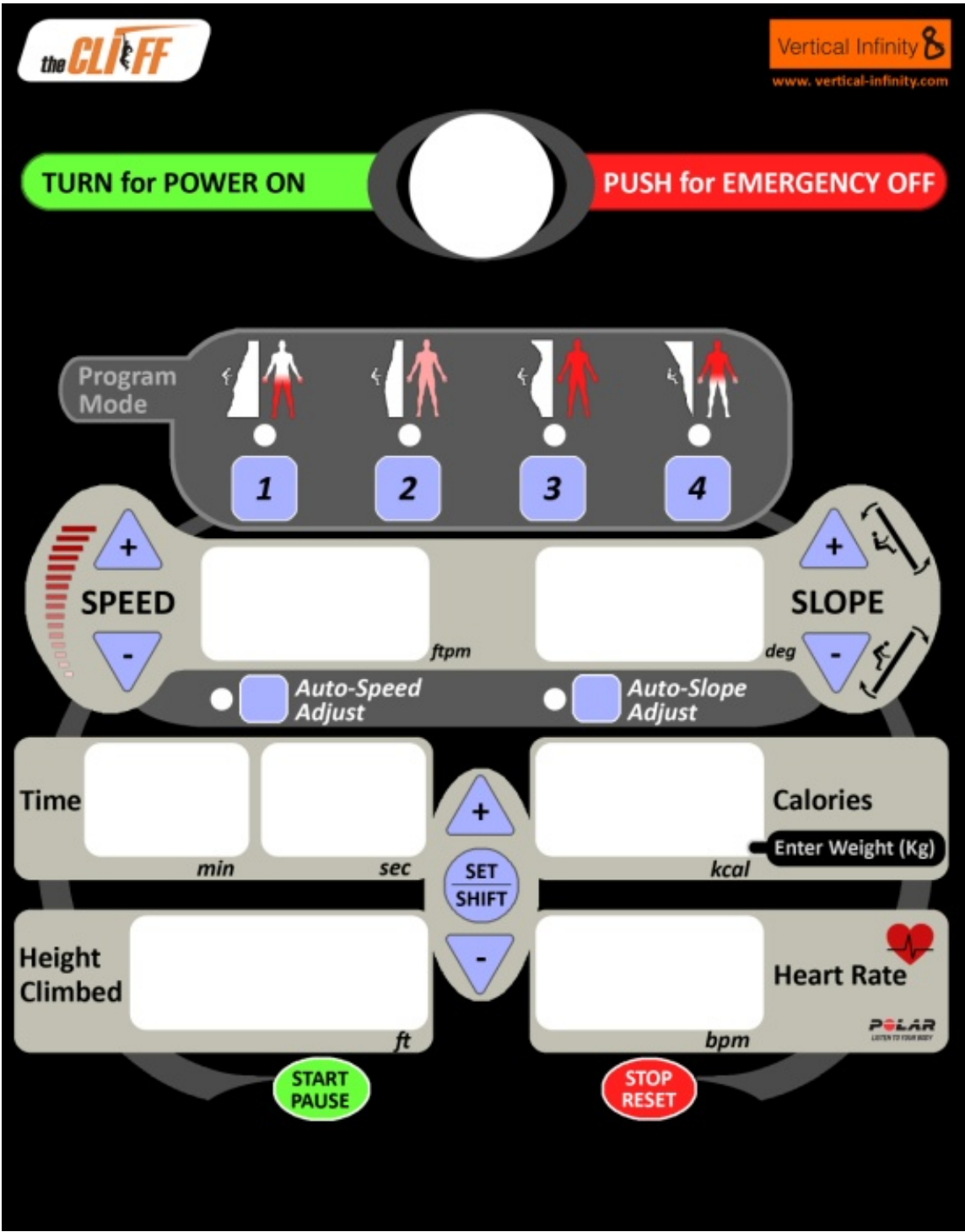
Phase 1

Phase 2

Phase 3

Next Step

Interface flow



Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

Phase 1

Phase 2

Phase 3

Next Step

The Interface was demonstrated to Mr. Perreira from Tristar to reprogram the current panel.

Mr. Perreira had manufactured the electronics and programmed the front panel.

Vertical Infinity

Project Brief

User Study

Design Goals

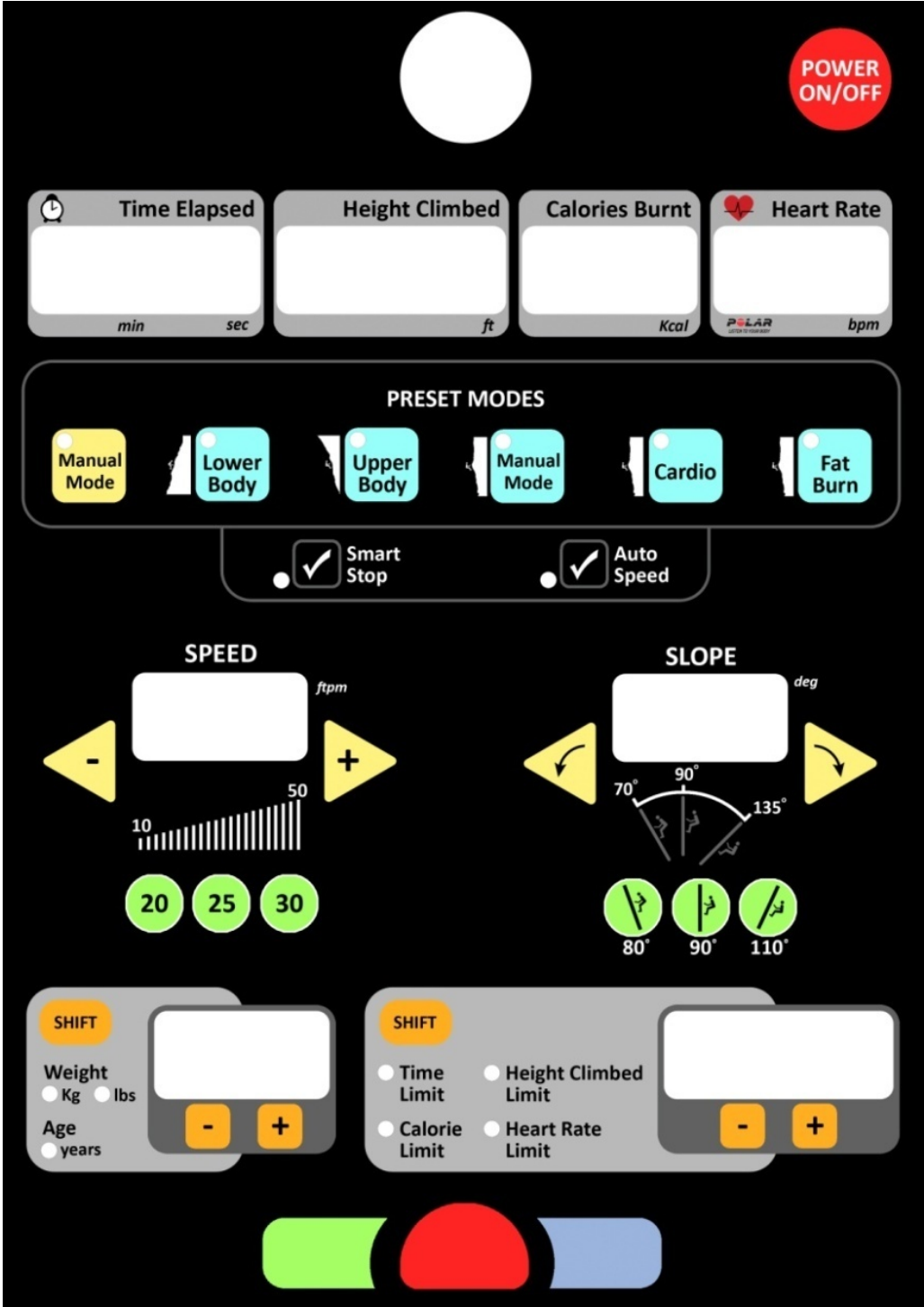
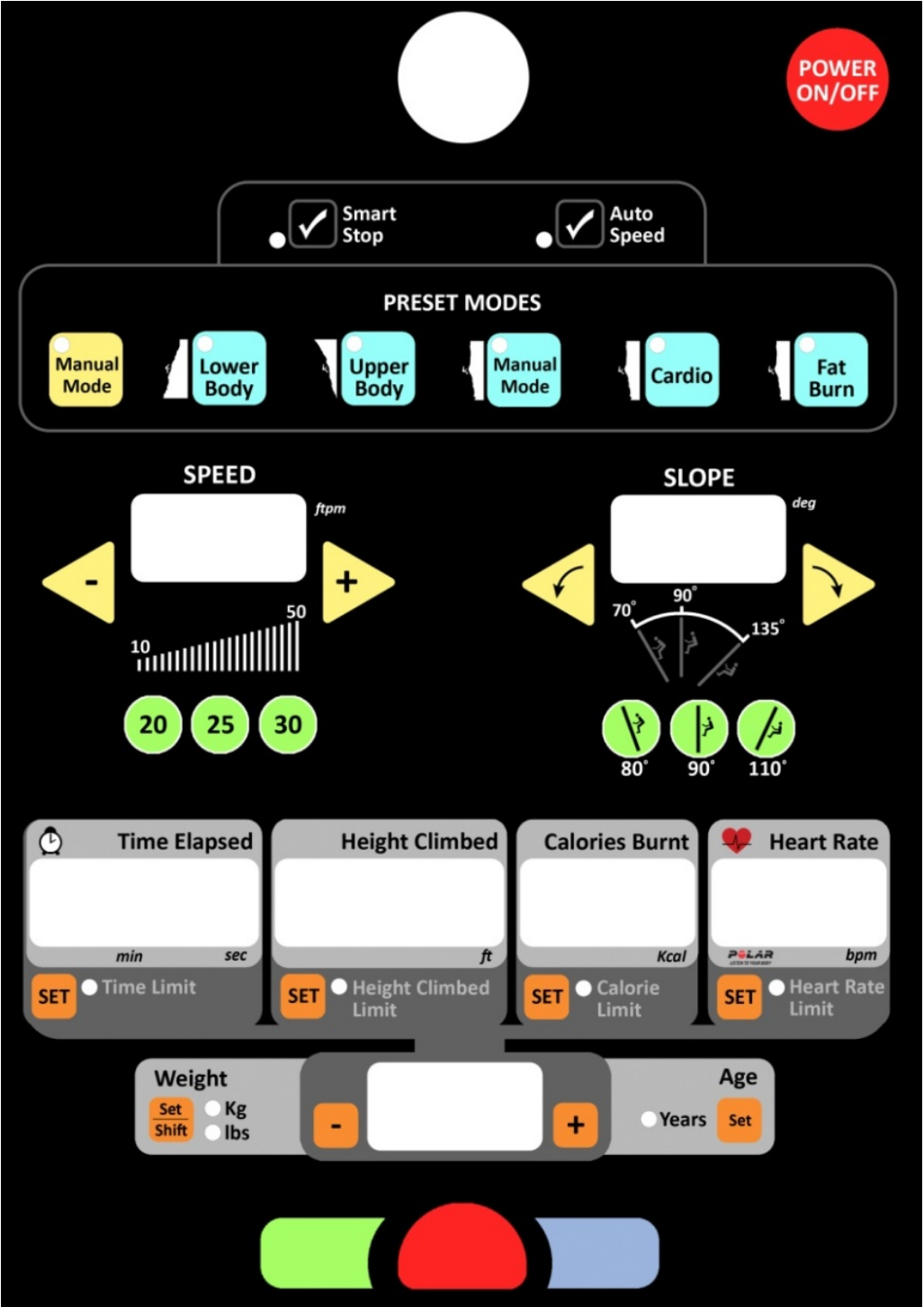
Evaluation

Phase 1

Phase 2

Phase 3

Next Step



Vertical Infinity

Project Brief

User Study

Design Goals

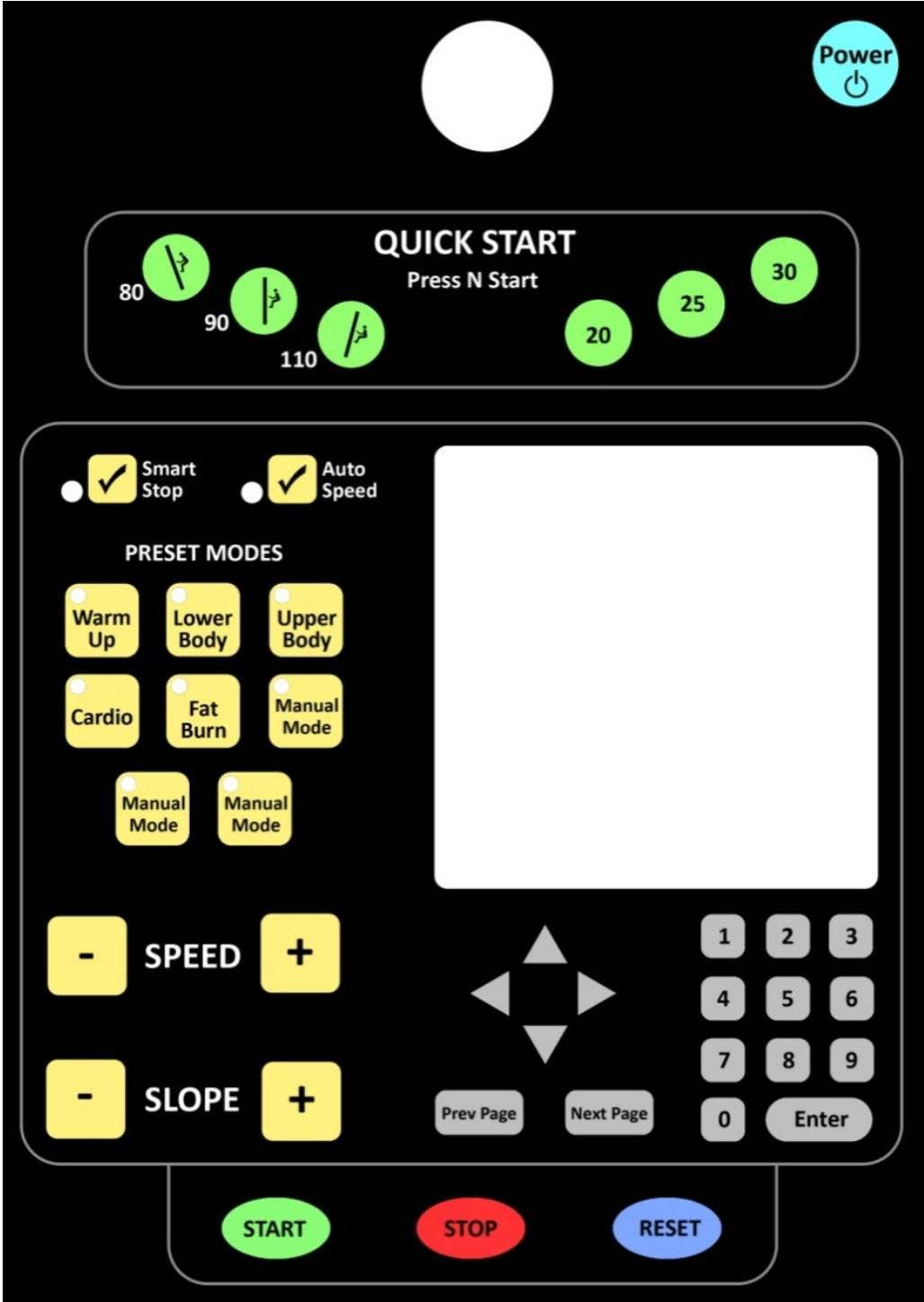
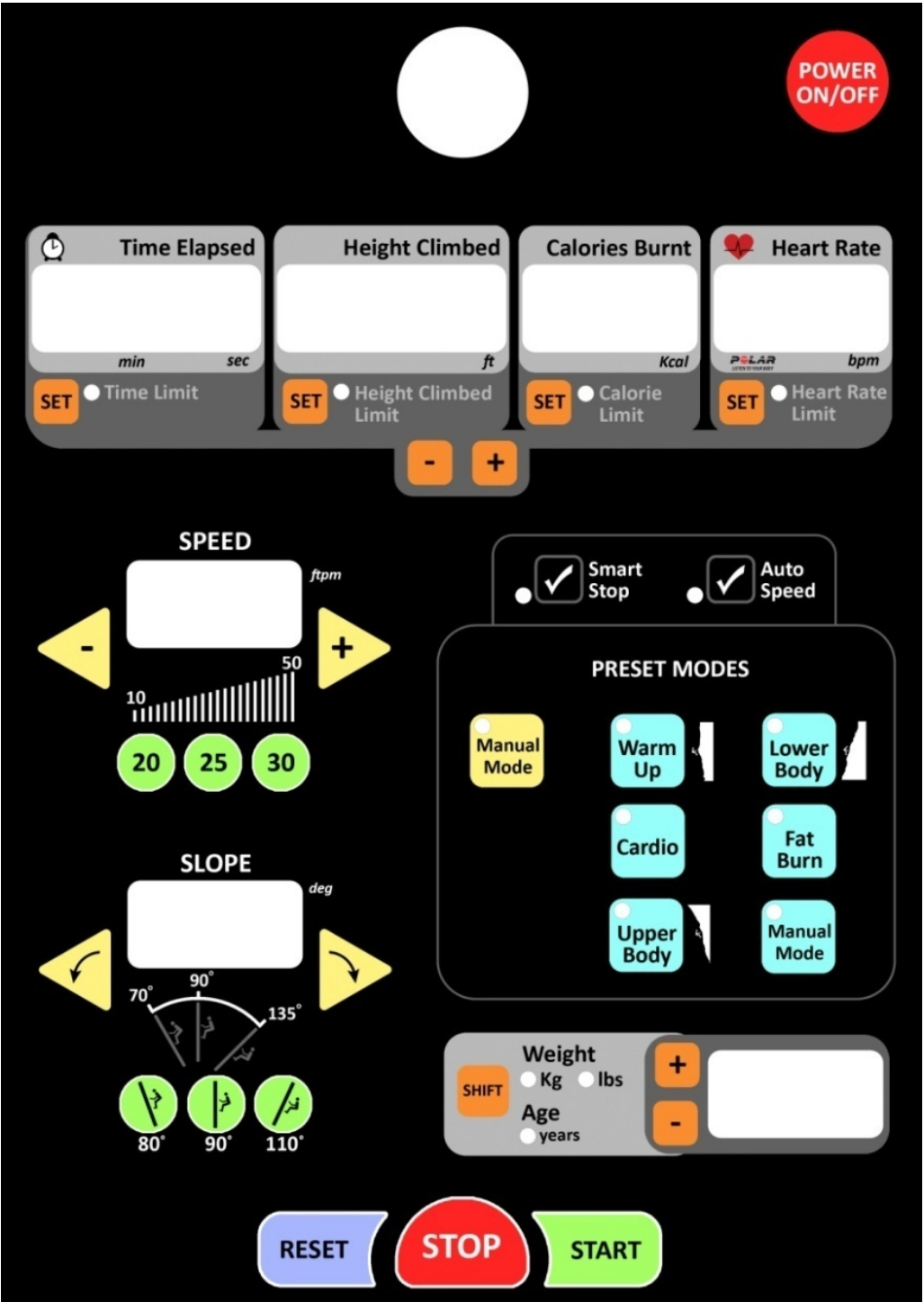
Evaluation

Phase 1

Phase 2

Phase 3

Next Step



Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

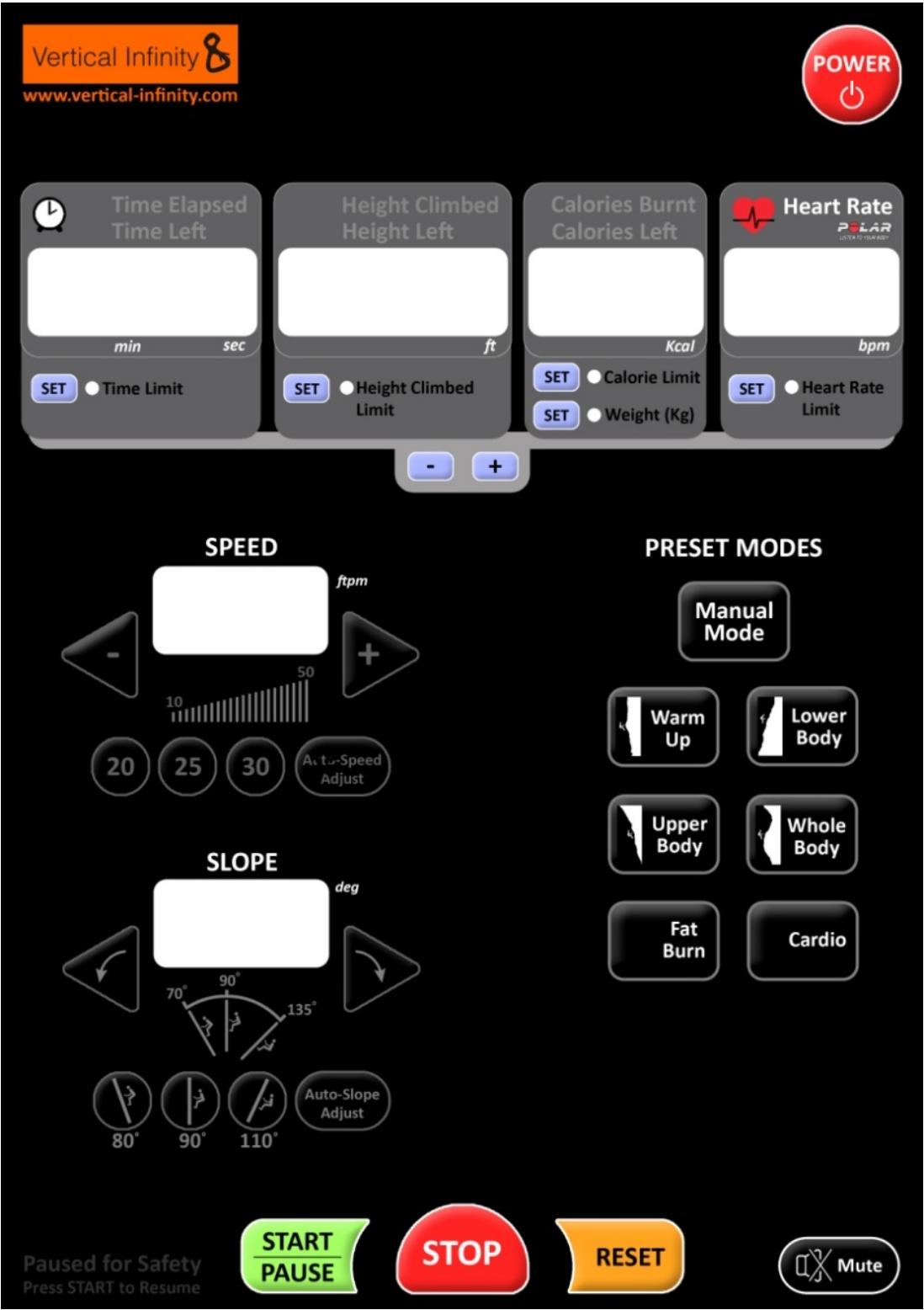
Phase 1

Phase 2

Phase 3

Next Step

This graphic was shown to Mr. Mayuresh, Sales Executive from Protolab, Mahape to approve the design for manufacturing of the front panel circuit board with embedded backlights and tactile switches.



Vertical Infinity

Project Brief

User Study

Design Goals

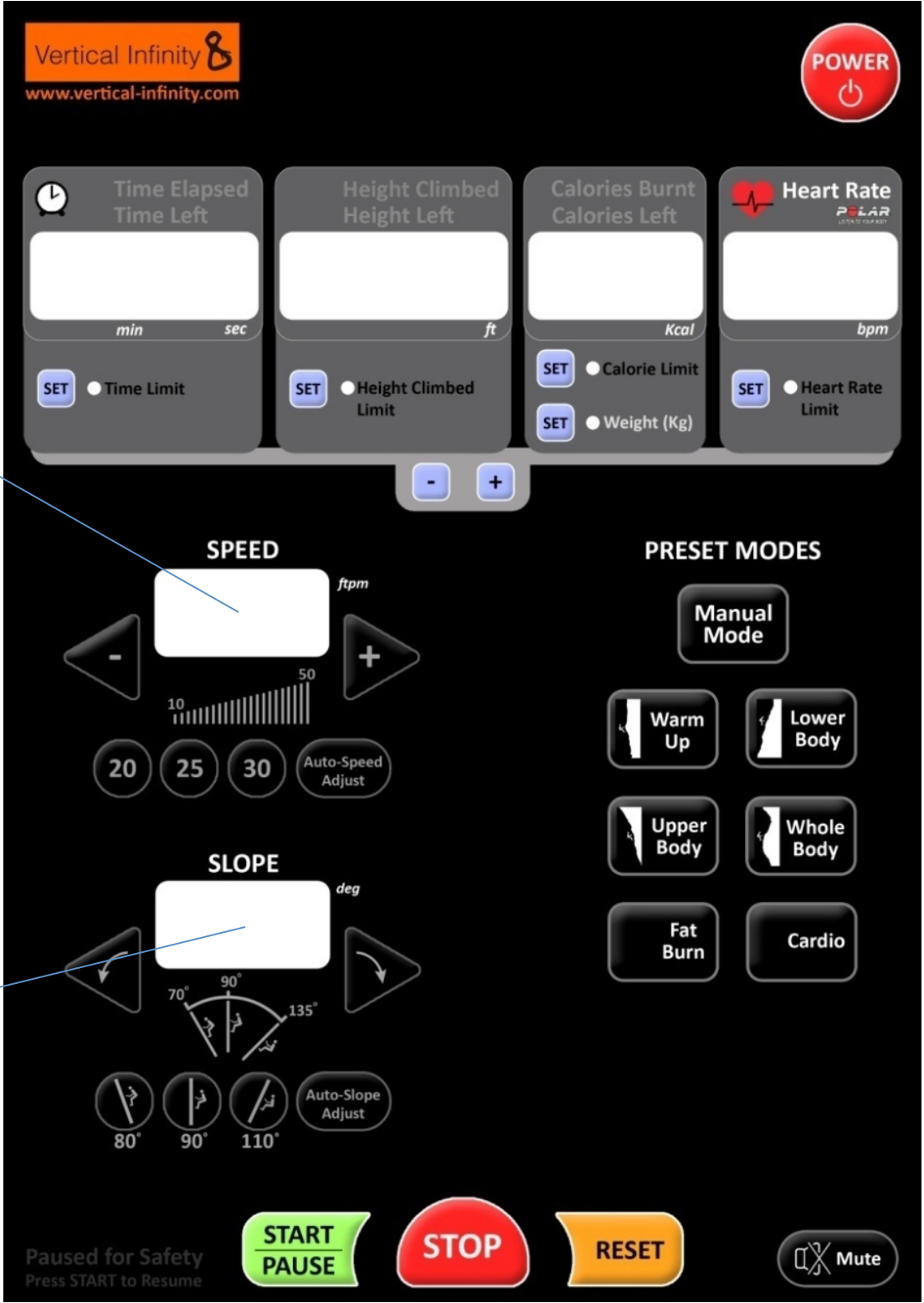
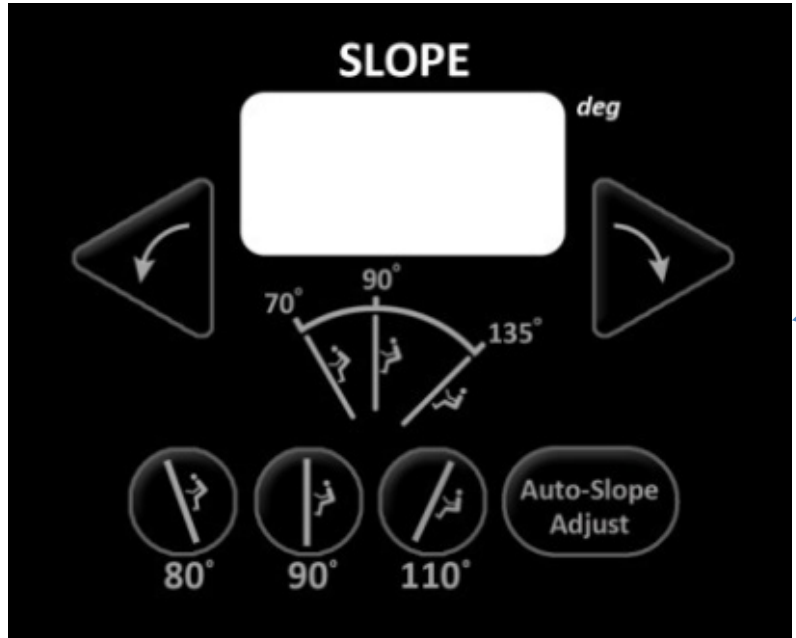
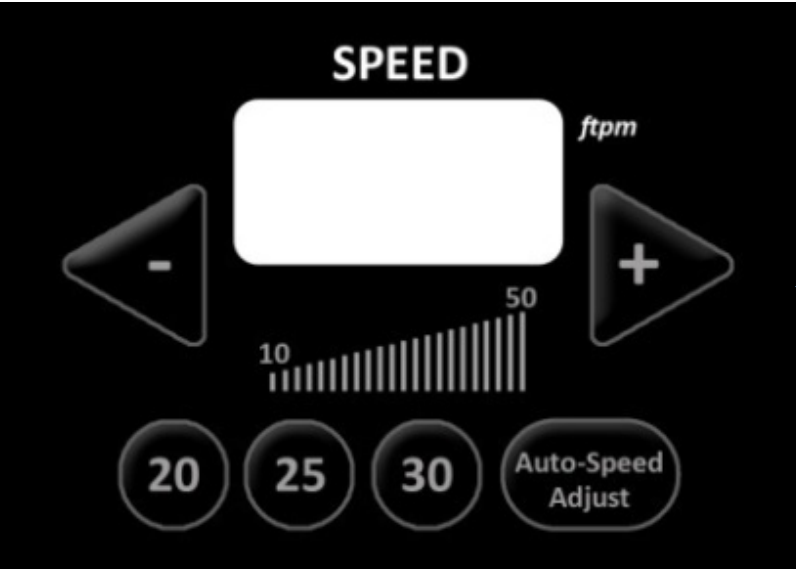
Evaluation

Phase 1

Phase 2

Phase 3

Next Step



Vertical Infinity

Project Brief

User Study

Design Goals

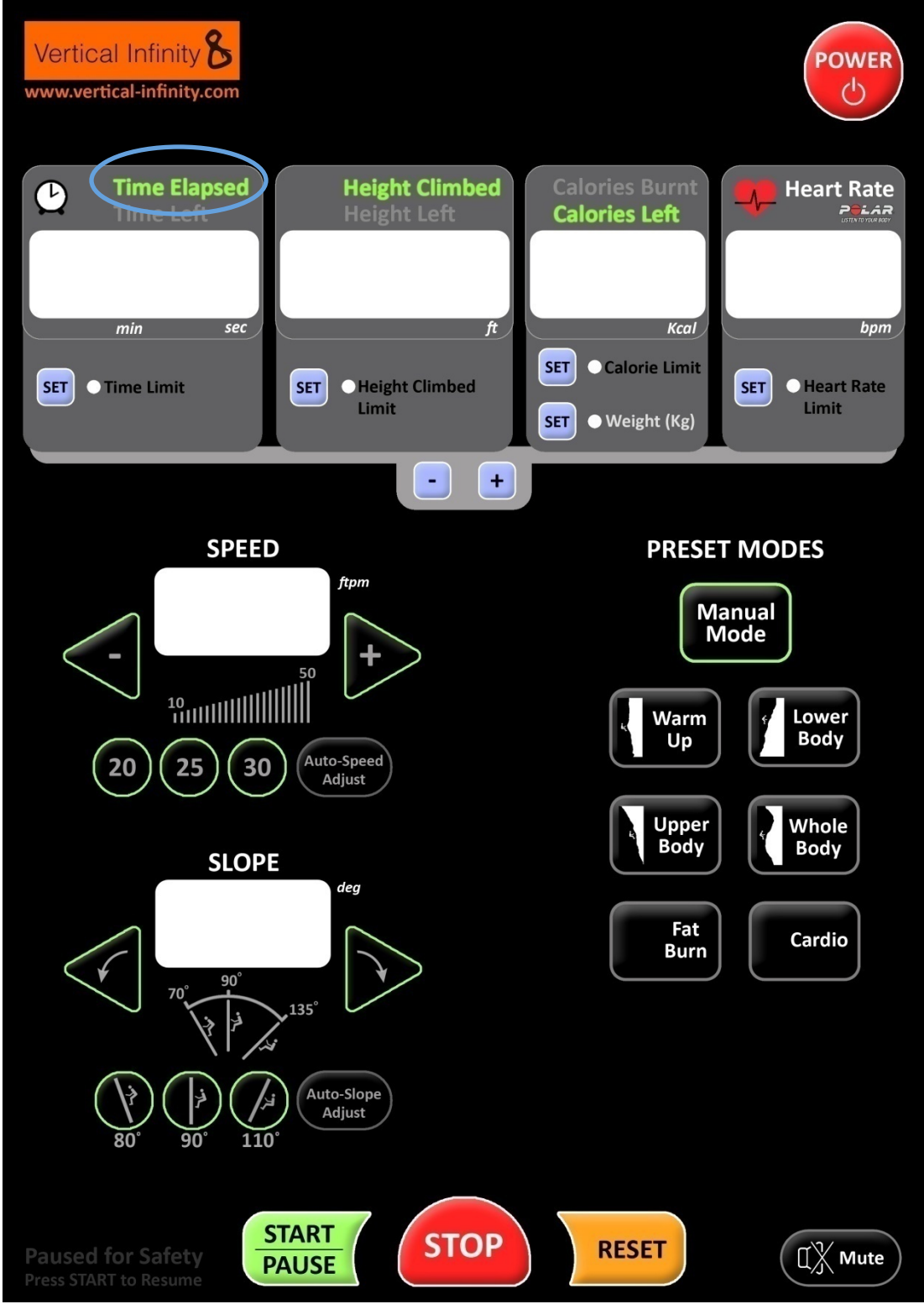
Evaluation

Phase 1

Phase 2

Phase 3

Next Step



Vertical Infinity

Project Brief

User Study

Design Goals

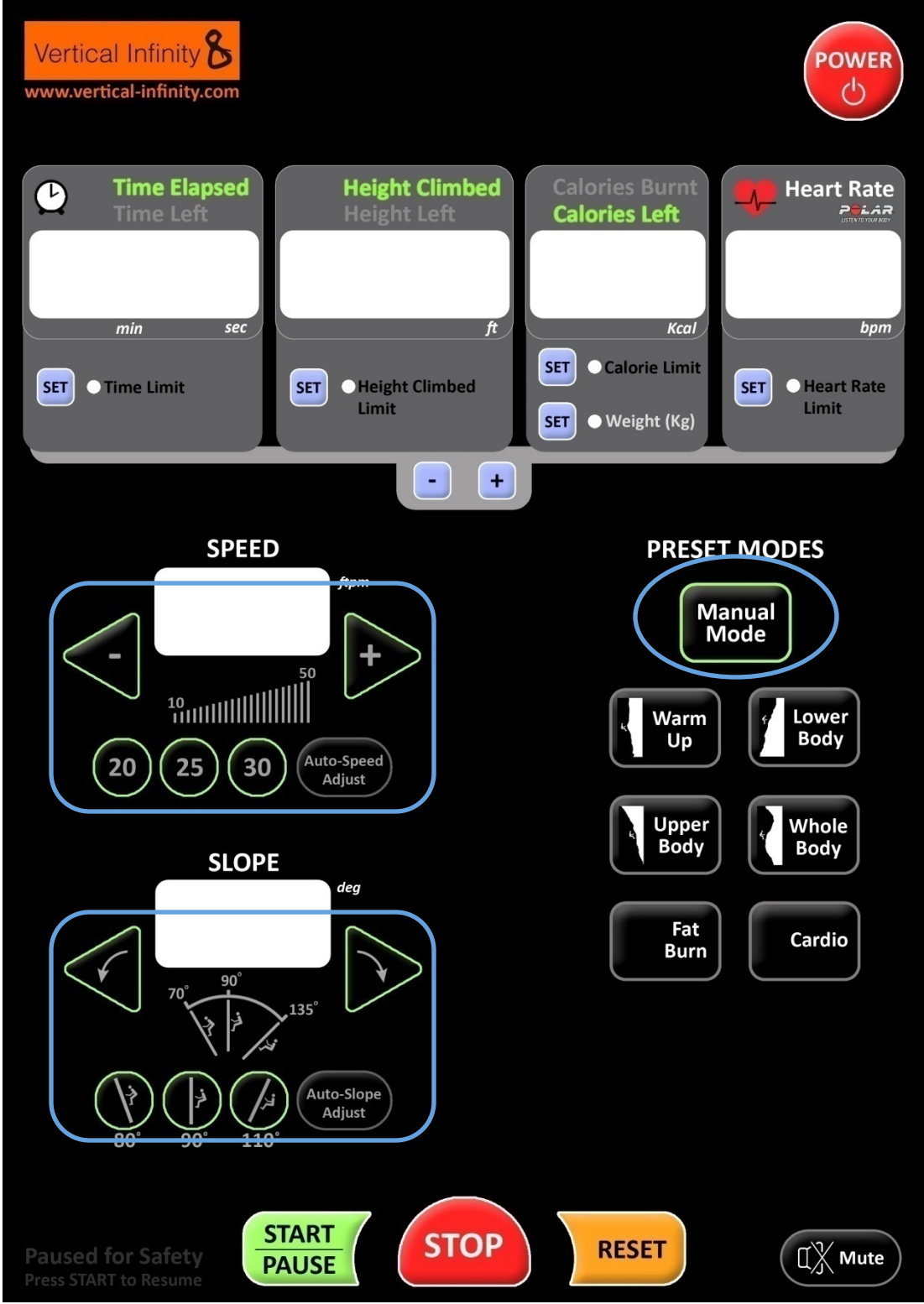
Evaluation

Phase 1

Phase 2

Phase 3

Next Step



Vertical Infinity

Project Brief

User Study

Design Goals

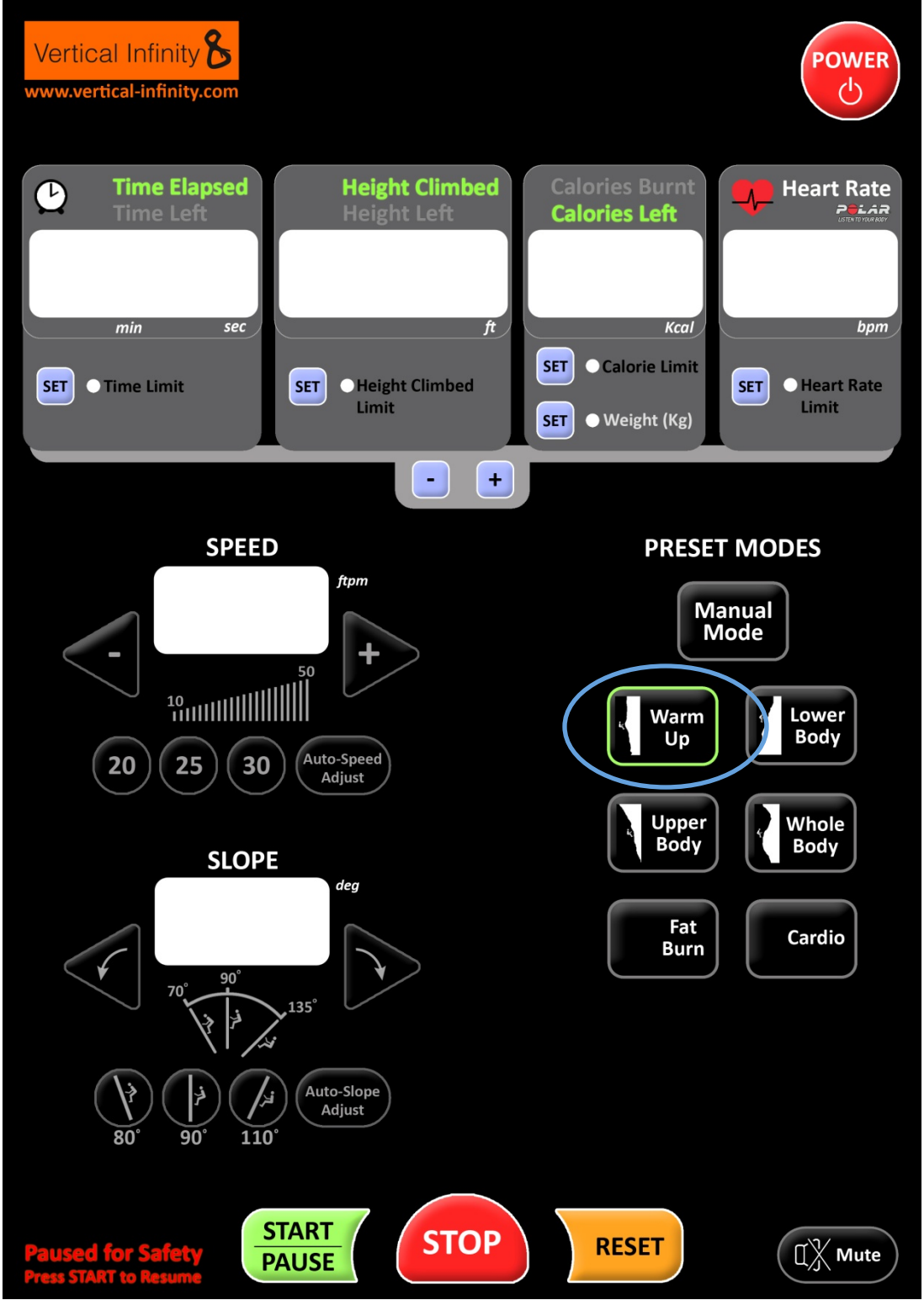
Evaluation

Phase 1

Phase 2

Phase 3

Next Step



Vertical Infinity

Project Brief

User Study

Design Goals

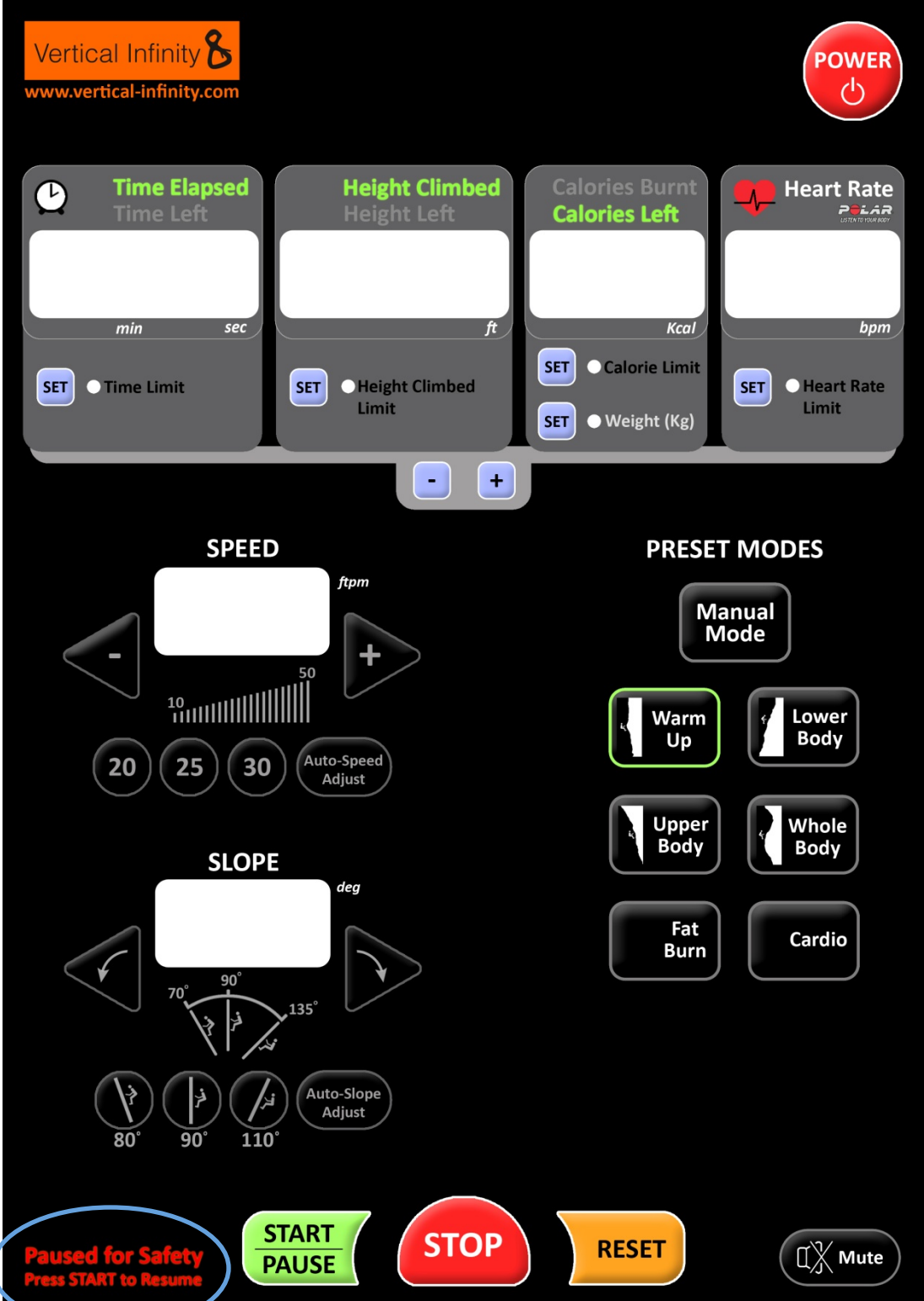
Evaluation

Phase 1

Phase 2

Phase 3

Next Step



Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

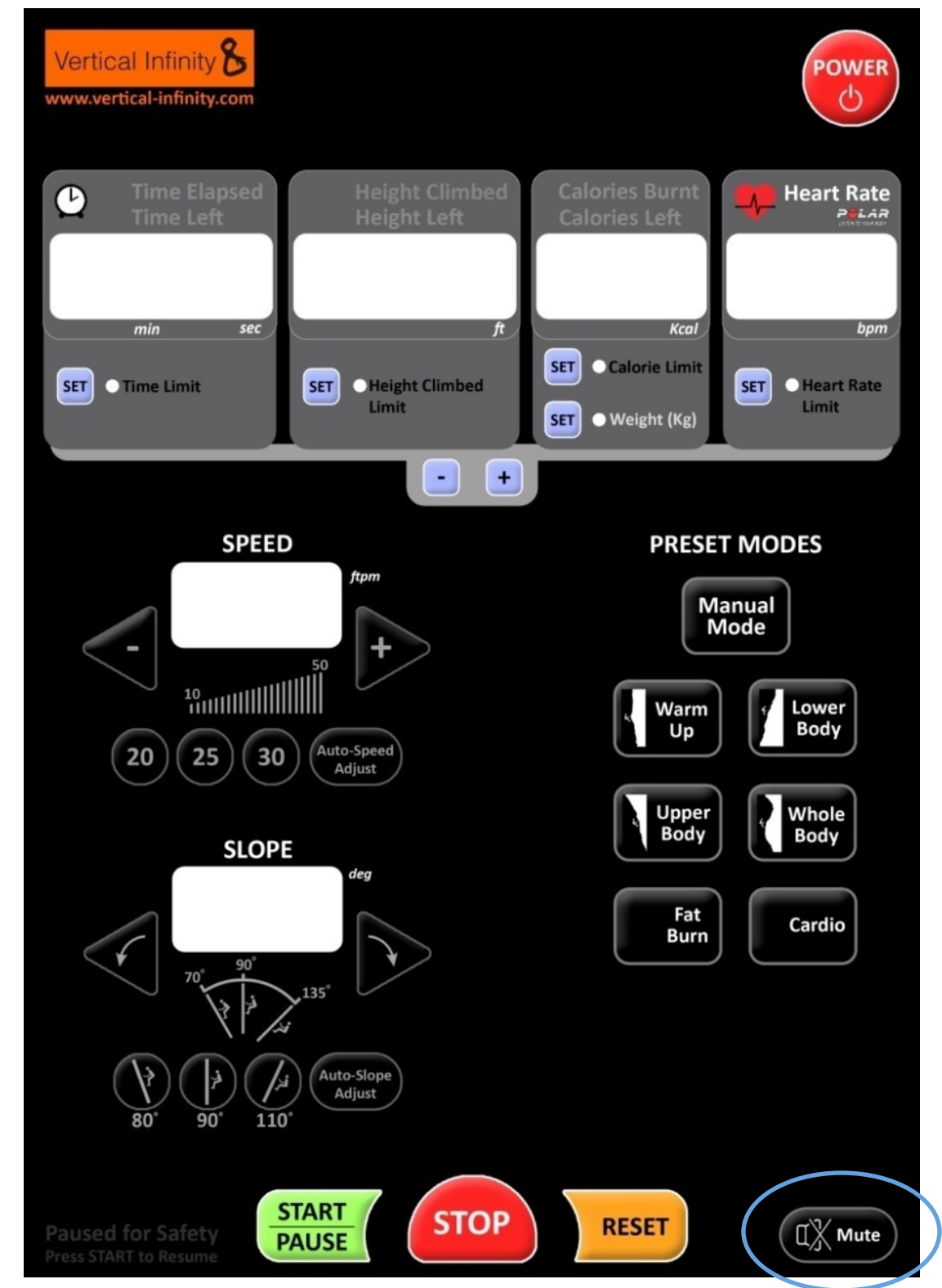
Phase 1

Phase 2

Phase 3

Next Step

- Audio feedback
 - Display Information
 - Motivation
 - Music for Entertainment



Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

Phase 1

Phase 2

Phase 3

Next Step

Ideation

- Voice Input/output System
- Voice feedback
 - Display Information
 - Motivation
 - Music for Entertainment
- Voice recognition
 - Stop
 - Pause
 - Increase slope
 - Decrease slope
 - Increase speed
 - Decrease speed



Image courtesy:
www.cellgear.com
www.beststuff.com
www.mysdigitallife.info

Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

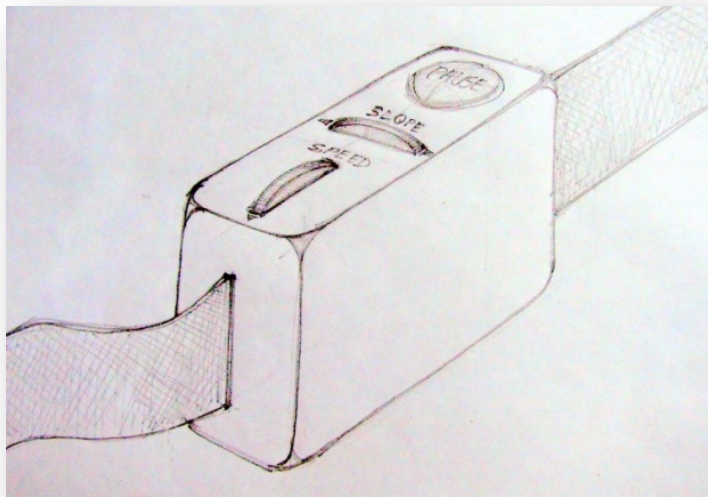
Phase 1

Phase 2

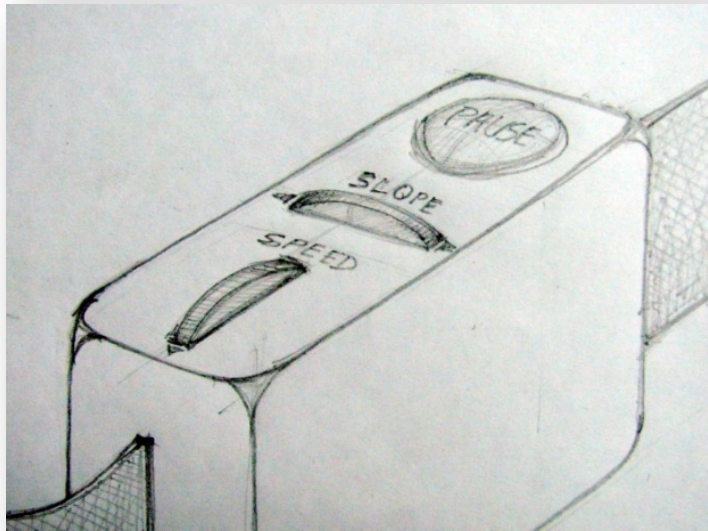
Phase 3

Next Step

•If Voice recognition couldn't be implemented then, a device could be belt around the waist of the climber



For Left handed as well as right handed person.



Controls for
-Pause
-Slope
-Speed



Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

Phase 1

Phase 2

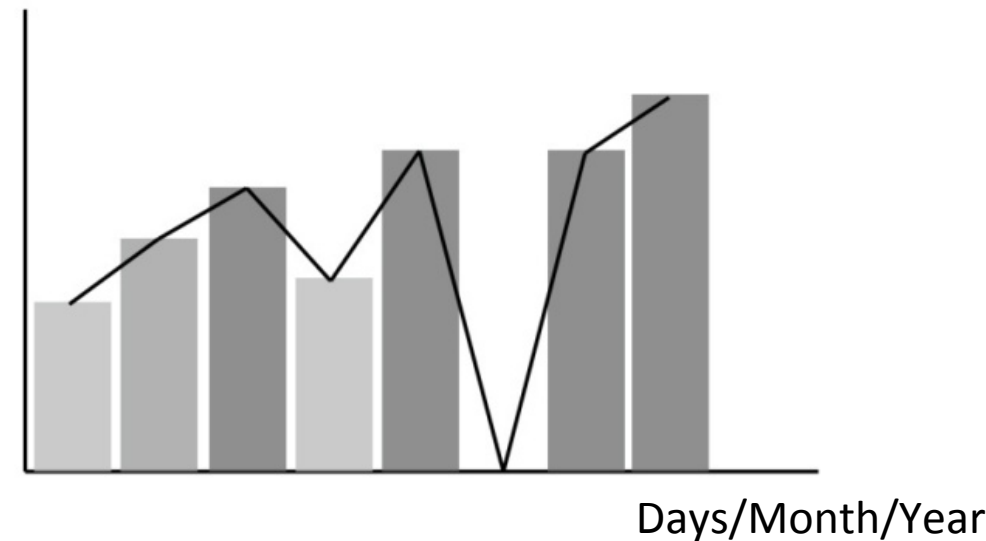
Phase 3

Next Step

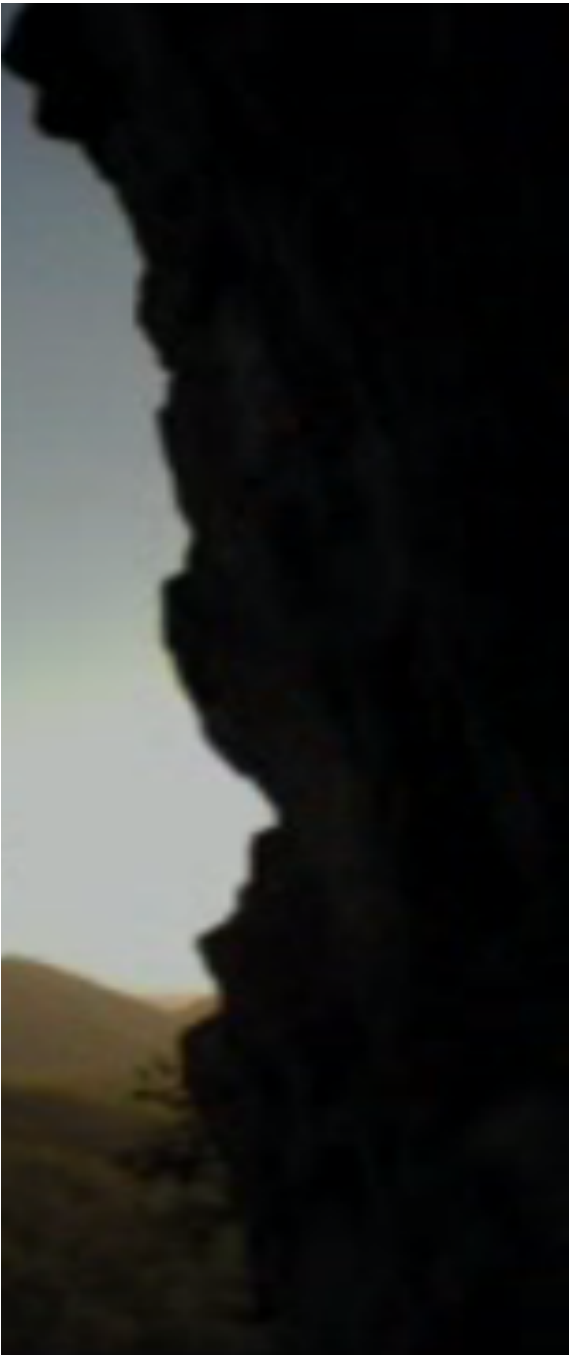
Touch Screen Based Control Panel

- User can create cliff of his/her choice
- User can view data regarding exercise/fitness

Time/Calories Burnt/Height climbed/Heart rate



- A list of high Scorers could be displayed



Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

Phase 1

Phase 2

Phase 3

Next Step

New Feature

-Hold Challenge



Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

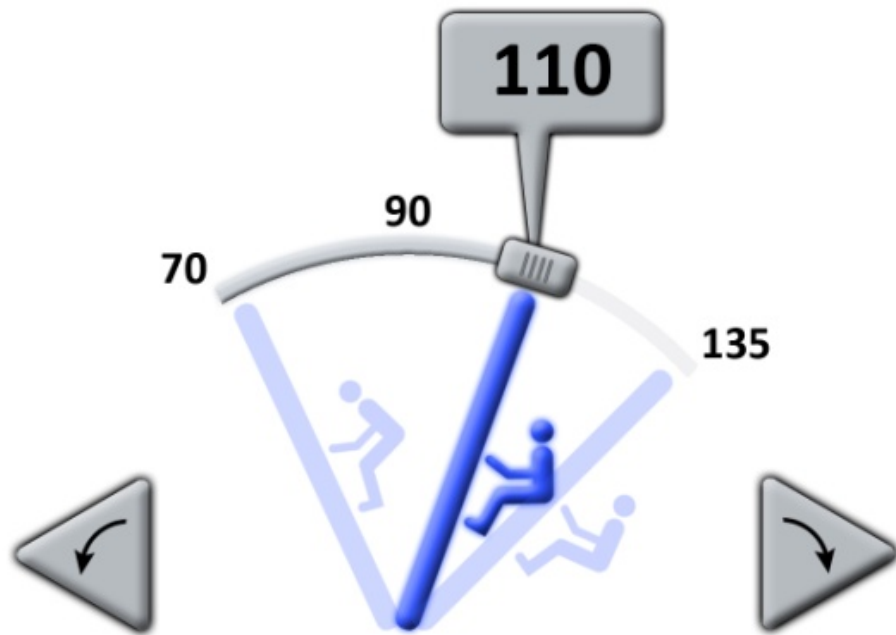
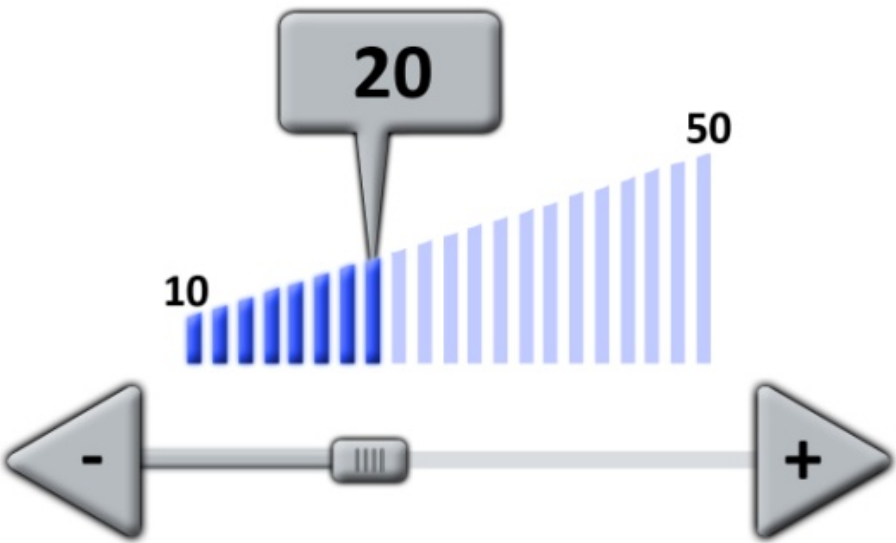
Phase 1

Phase 2

Phase 3

Next Step

- Interactive Graphics could be used.
- Tour/Tutorial regarding how to operate the cliff could be provide.
- Lessons of climbing could be given. Climber could mimic the expert in video.
- Instant help could be provided.
- New features/Interfaces could be downloaded from companies website.



Vertical Infinity

Project Brief

User Study

Design Goals

Evaluation

Phase 1

Phase 2

Phase 3

Next Step

Phase 1:

1. Reprogramming of current front panel and user testing.

Phase 2:

1. Developing a prototype for the front panel for phase 2
2. Programming it for user testing.

Phase 3:

1. Conceptualizing a user Interface for touch screen panel.
2. Developing a prototype of the control unit which is to be belt on waist.
3. Finding an appropriate on shelf technology for voice recognition.

Acknowledgements

I take this opportunity to thank **Mr. Akash Karani** and **Mr. Vinay Savla** for not only providing with their invaluable guidance but also for constant motivation and letting me be me all along.

I would also like to thank **Prof. Anirudha Joshi** for giving me initial guidance and confidence.

My special thanks to **Mr. Neel Karani, Mr. Sandeep Karani, Mr. Rajesh Karani, Mr. Deepak Karani** and all the **staff members** and employees working in vertical infinity for their support. I would like to thank **Mr. Pranav Gajjam** and **Mr. Ajay Mali** of 24FramesDigital, Byculla for giving me initial guidance in Flash Action Scripting. I would also like to thank **Mr. Perreira** of Tristar, Goregaon and **Mr. Mayuresh** of Protolab, Mahape for giving me their valuable time and information regarding electronics used in the existing front panels in the market.

And last but not the least I thank my family members, friends and fellow IDCians for their support, without whom it would have been very difficult to keep up.

Thank you