POLY

User eXperience DESIGN AWARD

2023红点概念奖入围（在投）
第十四届国际用户体验创新大赛全国二等奖

2030 DESIGN VALUES

01 健康安全

02 娱乐社交

03 智能可靠

积极老龄化·探索智能生活中健康&社交场景新方式

POLY–新老年登山产品系统

POLY — New Elders Climbing Product System

产品设计原理与方法 /智能交互产品 / 实物原型

DESIGN BRIEF

POLY登山系统专为新老年登山而设计，以健康安全、娱乐社交、智能可靠为三大设计重点，系统包含登山杖主体、娱乐模块、APP三部分，各部分高效互联。

The POLY mountaineering system is designed specifically for new elderly climbers, with three major design focuses: health and safety, entertainment and socializing, and intelligent reliability. The system comprises three components: the alpenstock, entertainment modules, and mobile application.

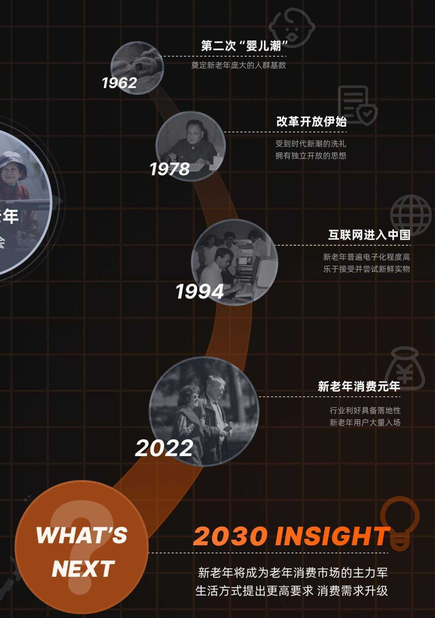
产品宣传概念视频

完整产品介绍视频

团队项目（田琳 李冰 王奕 陈晓）
2022.03-2022.05（8 周）
用户研究/产品设计/系统设计
沈张帆（江南大学设计学院）

LITERATURE RESEARCH

“新老年”推动银发经济浪潮



2030 INSIGHT

新老年将成为老年消费市场的主力军
生活方式提出更高要求 消费需求升级

BEHAVIORS ANALYSIS

登山运动极具用户适配性

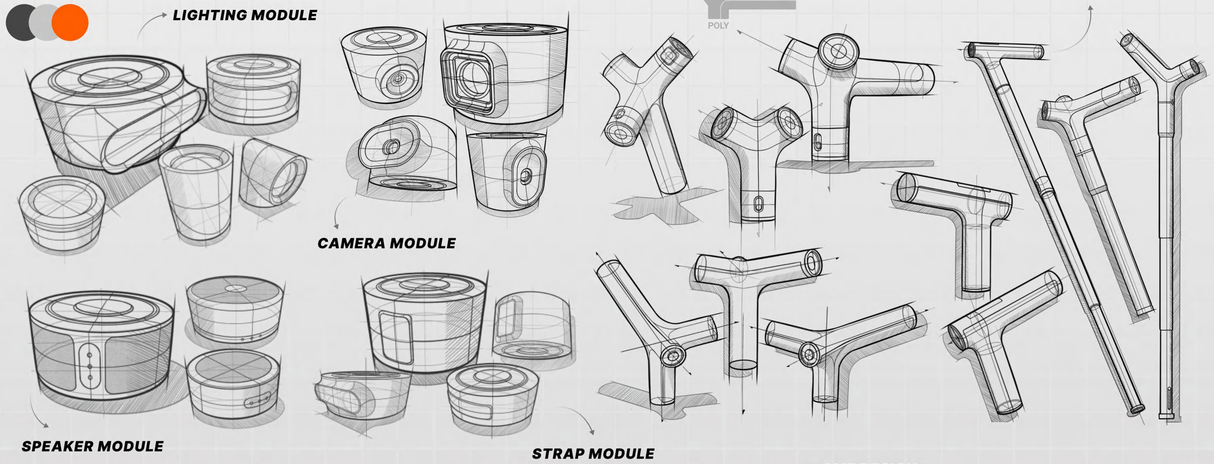
01 健康属性
新老年运动意识增强
健康是登山第一动因

02 社交属性
多数新老年喜欢结队同行
更加注重体验感和娱乐性

03 科技赋能
构建高效的联系和互动方式
帮助老人提升社会参与水平

04 登山产品现状
老龄化登山产品设计仍处于初步阶段
存在质量低、同质化、操作难等问题

SKETCHING



DESCRIPTION.

我们试图设计一支简约而不失科技感的登山杖，提供一种可靠、稳健、轻便、自由的形象，又能在用户的参与下形成自我的、个性的情感表达，带来愉悦的社交体验。颜色以深灰为主，亮橙色为配。

We tried to design a simple and technological alpenstock that provides an impression of reliability, lightness and freedom, which can form a self and individual expression of emotion with user participation and bring a pleasant social experience. The color is mainly dark grey with bright orange .

CMF DESIGN

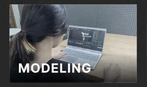
碳纤维主体
carbon fiber body

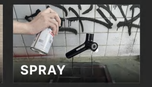
橡胶手持部位
rubber handheld

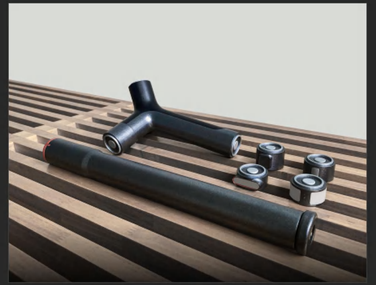
磁铁连接点
magnet connection point

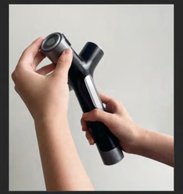
钨钢杖尖
tungsten stick tip

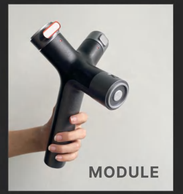
PROTOTYPE

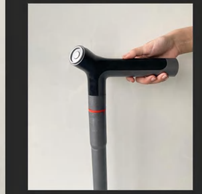


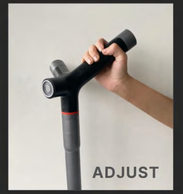


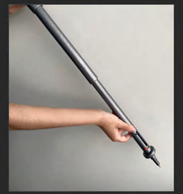












DELIVER

健康安全
登山杖主体

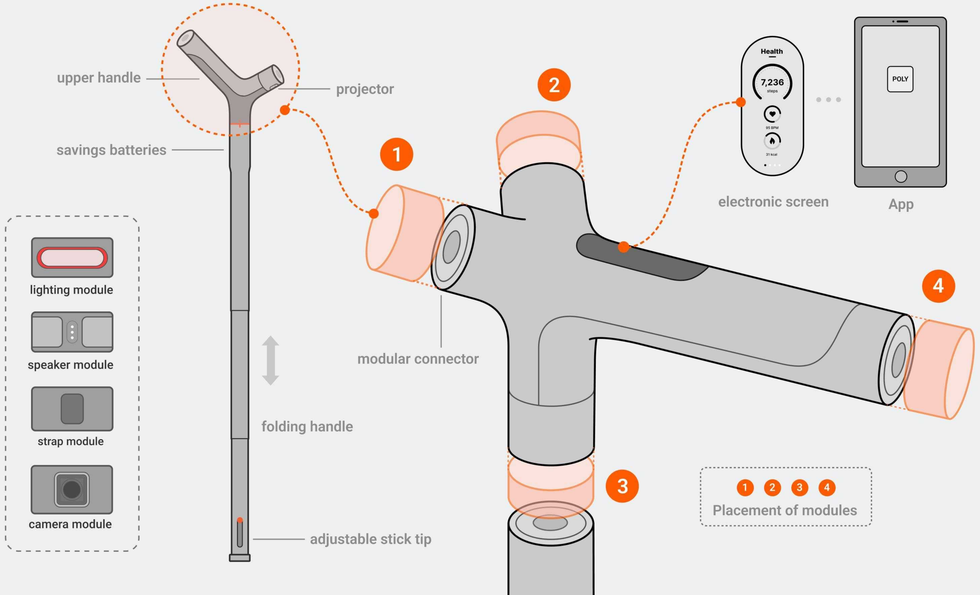
娱乐社交
拓展型模块件

智能可靠
手机端与杖体屏幕

POLY

为新老年而设计
探索智能生活中
健康&社交场景新方式

PRODUCT ARCHITECTURE



STRUCTURE

伸缩折叠
依靠内部T型卡扣结构，登山杖下柄实现三段式折叠。
当缩到最短时小巧便捷，可手提或存放入背包内。

磁吸+卡扣
旋转卡扣结构确保主体与配件间的稳定性。
强磁吸的设计提供双重保障，防止脱落。

STEP 1

STEP 2

底部切换
利用笔式卡扣结构，实现登山杖底部在普通拐杖头和杖尖头之间的切换，适用于不同登山场景中。

01 Choose which handle to use

02 Align the lower handle

03 rotate handle and stuck structure

04 Align the alignment marks

USING SENARIO

Scene1 go uphill with sloping handle

exert force and reduce fatigue

Scene2 go downhill with horizontal handle

protect the knee and cushion the pressure

ADJUSTABILITY

Mode1 直柄式

Sloping Handle

Mode2 横柄式

Horizontal Handle

上柄模式切换

分离式上柄由三个短柄和一个长柄混接组合而成，自成一定的角度。由于山势未知，用户可根据实际情况及时调整握姿，以减小对身体各部位的隐形冲击。

The upper handle is a combination of three short handles and one long handle mixed together to form its own angle. As the conditions on the mountain are unknown, the user can adjust the grip to the actual situation in time to reduce the invisible impact on health.

MODULES

Lighting Module

The lighting module provides illumination. The colour temperature and the brightness of the light can be adjusted via the electronic screen.

娱乐模块拓展

POLY系统的娱乐社交功能以模块的形式出现，与APP和杖体屏幕互联，为新老年山顶休闲、交流延伸提供新思路。

The entertainment and social features of the POLY system are presented in a modular form. It provides a new approach to extend leisure and communication opportunities for new elders.

Strap Module

The strap module allows the hidden straps to be popped up at the press of the button, manually stretched to adjust the length and automatically retracted after use.

Speaker Module

The speaker module plays music, provides voice navigation and can also be recorded and controlled via the electronic screen.

Camera Module

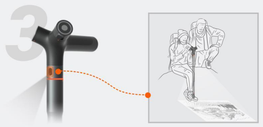
The camera module adjusts the shooting angle by rotating the magnetic structure and controls the photographic parameters via the electronic screen.

Scene1 Use with the upper handle

e.g. Use the top handle as a selfie stick and take photos with your partner using the camera module

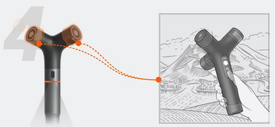
Scene2 Use with the electronic screen

e.g. Upload your favourite music from your phone to speaker module and use the electronic screen to control the music playback



Scene3 Use with the projector

e.g. Share photos of the natural beauty captured by the camera module with your partner via the projector



Scene4 Combined use of modules

e.g. Use the camera module to capture the mountain scenery while recording with the speaker module

NEW JOURNEY MAP

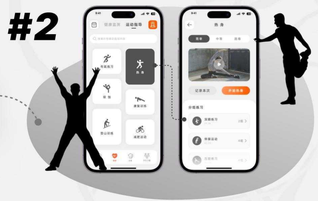
登山全程系统化服务

#1

01 目的地选择

用户可以在APP社区功能内查看登山攻略和参加登山活动，在景点功能中查看景点介绍并加入登山规划。

#2



02 热身运动

在登山前热身运动和登山后放松运动时，用户可以在运动指导界面选择不同的训练板块和难度等级。

#3

03 路线投影

在登山过程中，用户可以选择将路线导航信息通过蔡体投影仪投至地面，按投屏幕切换投影内容和角度。

#4

04 登顶休闲

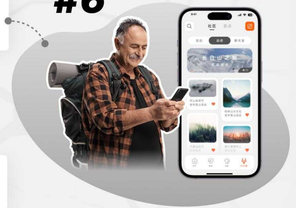
用户用户可以在APP社区功能内查看登山攻略和参加登山活动，在景点功能中查看景点介绍并加入登山规划。

#5

05 健康监测

抓握区内置传感器，可以监测到身体数据并在手杖屏幕上显示；将运动全程数据将上传至APP，生成报告。

#6



06 交流分享

将线下登山交流活动延续至线上，发布登山动态，关注相应登山聊天室，与志同道合的伙伴深入沟通。

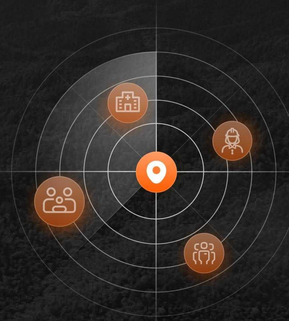
SAFETY & RESCUE

高效联动救援系统

POLY系统三大核心组成部分协同工作，智能化程度高，系统与外界的信息传递高效迅速。例如，在SOS紧急情况下，系统内部各自传递多种类型的急救信号，被外界人员高效获取。

In the case of an emergency while climbing, POLY will open the **systematic rescue mode**, all functions work together to send rescue signals to rescuers until the user is found, greatly enhancing the efficiency of rescue.

INSIDE SYSTEM



OUTSIDE SYSTEM