2022 —— 2023

環境關懷設計競賽

Caring for the Environment Design Competition

作品集 Portfolio

行政院環境保護署
Environmental Protection Administration
Executive Yuan, R.O.C (Taiwan)

行政院環境保護署

Environmental Protection Administration

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目錄 Content

活動緣起 Background

行政院環境保護署（以下簡稱環保署）為鼓勵全民對於「永續發展」「跨界創新」與「創意實踐」的認同與落實，舉辦「環境關懷設計競賽」，提供「永續設計」「綠色設計」「環境教育」等不同領域的專業人士，一個跨界交流與創意表現的舞臺。本競賽自2014年起舉辦第一屆環境關懷設計競賽，每2年辦理1次 ， 至今已辦理第五屆，以徵求解決人類所面臨的「在地困難、全球挑戰」的創意方案為目標，參賽者可針對身體、家庭、工作、玩樂與學習及社區等5個範疇進行思考，作品類型不拘，期吸引並激勵青年學子與產業的投入，散播環境關懷實踐家的種子，豐富臺灣環境教育的內容，讓環境關懷理念能更為全民化、行動化地融入生活。

To promote widespread recognition and implementation of sustainable development, crossover innovation and creativity, the Environmental Protection Administration (EPA) of the Executive Yuan has organized the "2022-2023 Caring for the Environment Design Competition." This competition serves as a platform for experts in various fields, including sustainable design, green design, and environmental education,to engage in cross-disciplinary exchange and apply their creativity.The competition, which has been held biennially since 2014, is now in its fifth edition and aims to discover innovative solutions to both local and global challenges faced by humanity. Participants are invited to explore five distinct categories: Body, Home, Work, Play & Learning, and Community. There are no limitations on the types of work that can be submitted. By targeting and inspiring young students and industries, the competition aims to cultivate a new generation of environmental care practitioners. Furthermore, it seeks to enhance the content of environmental education in Taiwan and integrate the concept of environmental care into people's lives in a more inclusive and actionable manner.

Field of competition 競賽主題

本競賽以環境關懷的實踐為核心理念，參賽者可針對身體、家庭、工作、玩樂與學習及社區等五大範疇進行思考，以創意、創新解決人類所面臨的「在地困難、全球挑戰」為目標。五大範疇之設計思考面向，包括：

1/身體

包括旨在保持我們身心健康的所有設計。這可以包括可穿戴設備、設備、應用程序和所有與護理相關的產品和服務。

2/家庭

想想那些讓居家生活更美好的產品。解決方案可能包括電器、小工具和家具，以及新型住房或共居形式。

3/工作

讓人們的工作更安全、更公平、更容易獲得和可持續。此類別的解決方案包括工具、機器、系統、服務等。

4/玩樂與學習

沒有玩樂感，學習幾乎沒有那麼有效和有趣。想想遊戲、玩具、文化活動和教育材料或服務等解決方案。

5/社區

社區代表了我們共享的大規模解決方案。這包括了建築、基礎設施、公共空間、交通、能源與污染的解決方案等。

Interdisciplinary Environmentally Friendly Design Competition

The goal of this competition is to promote interdisciplinary designs that are environmentally friendly. Any design related to environmental protection that can help solve current local and global problems is eligible to participate in the competition. The design concepts are divided into five categories: Body, Home, Work, Play & Learning, and Community. Details of the five categories are as follows:

Body:This category comprises all designs that aim to keep us physically and mentally healthy. This can include wearables, devices, apps and all care-related products and services.

Home:Think of the products that make life at home better. Solutions might include designs for appliances, gadgets and furniture, as well as new kinds of housing or cohabitation.

Work:Work is all about making our jobs safer, fairer, more accessible and sustainable. Solutions in this category include tools, machines,systems, services and more.

Play & Learning:Learning isn't nearly as effective and enjoyable without play. Think of solutions like games, toys, cultural activities and educational materials or services.

Community:Community represents large-scale solutions that we all share. This can include architecture, infrastructure, public spaces, transport, energy solutions and more.

活動紀實 The Selection Process

本屆競賽於111年5月13日開始徵件，徵件期間辦理全國宣傳說明會（共24場次，總計有1062人參與），且辦理了北、中、南共4場的環境關懷設計工作坊(共146人次參與）邀請設計領域及環境科學領域之學者專家組成跨領域導師團，提供參與學員專業的引導與協助、進行永續問題的解決及設計思考等，讓更多跨領域師生及團體能了解競賽的核心理念與設計思考素養的培力。徵件至11月13日截止，最後共有1149件來自各領域設計圖稿參賽。環保署邀請跨領域的專家與學者組成評審團，經過嚴格審視、討論後，初審選出52件作品進入複審，在進行複審前並特別舉辦了國際環境設計大師班邀請丹麥The Index Project專家團隊，The Index Project 傳播總監 Lesley Price、教育總監 Charlotte Høeg Andersen及台灣設計領域與環境科學專家組成跨領域大師團，協助參賽者於複審階段再次對作品的發展予以精進，The Index Project 的專家更分享國際設計競賽之經驗及得獎秘訣，以刺激參賽者對問題的思維及提升作品競爭性，全力來角逐2023年 The Index Award的殊榮。

The competition began accepting submissions on May 13, 2022 and was promoted nationwide via information sessions (24 sessions with 1,062 participants) and four interdisciplinary workshops (146 participants). Experts from the field of design and environmental science formed a cross-disciplinary mentoring team, to guide participants and foster problem-solving and design skills for sustainability. This enabled interdisciplinary students, teachers, and groups to better understand the competition's core concepts and enhance their design making capabilities.

At the submission deadline of November 13, 2022, a total of 1,149 entries were received from various fields. An interdisciplinary judging panel, including experts from The Index Project in Denmark, was invited by the EPA. After rigorous evaluation and discussion, 52 works advanced to the second round. Before this round, an international environmental design master class was conducted, where the inter-disciplinary master team, consisting of Index Project representatives Lesley Price (Director of Communi-cations), Charlotte Høeg Andersen (Director of Education), and Taiwanese experts in the field, assisted participants in refining their works. The Index Project experts shared their experiences and tips from international design competitions, stimulating participants' problem-solving abilities and enhancing the competitiveness of their projects, all in pursuit of participating in the prestigious 2023 Index Award.

校園宣傳說明會Campus exposition

環境關懷設計工作坊Situation of workshop

國際環境設計大師班辦理情形
Situation of The Index Project workshop

初審評選情形Situation of preliminary

複審評選情形Situation of review

初審評審合影Judges of preliminary

決審評選情形Situation of final review

複決審評審合影Judges of review and final review

本次競賽最終評選出20件入圍決審作品，作品涵蓋廢棄物再利用、永續城市、減碳及循環經濟等相關設計應用，展現臺灣豐沛的永續設計力量。同時，另辦理入圍作品「最佳人氣獎」票選活動，除與大眾分享入圍作品的設計理念與新世代的創意外，也期待啟發社會大眾對環境關懷與淨零循環新趨勢的關注及實踐。

Ultimately, 20 works were selected as finalists, showcasing Taiwan's abundant sustainable design capabilities in areas such as waste recycling, sustainable cities, carbon reduction, and circular economy. Additionally, a "Most Popular Award" voting activity was conducted for the shortlisted works. It aimed to share design concepts and innovative ideas from the competition with the public and inspire broader attention to and engagement in environmental care and the emerging trend of zero-waste circularity.

環保署推動臺丹環境教育合作 開創國際新視野

EPA advances Taiwan-Denmark cooperation in environmental education to open up new international perspectives

環保署積極推動臺丹環境教育合作，借鏡丹麥環境教育結合設計、創新和產業化的方式朝向以設計來因應全球氣候變遷等環境永續議題，此次於112年1月31日在西本願寺樹心會館舉辦《臺丹環境教育合作與環境設計大賽展覽開幕記者會》邀請丹麥外交部駐臺機構丹麥商務辦事處柏孟德處長、全球設計界諾貝爾獎美譽 The Index Project教育總監 Charlotte Høeg Andersen 和傳播總監 Lesley Price，共同與會，臺丹共同推動環境教育與設計跨領域的合作深化，期許未來一起為淨零永續而努力。

The EPA actively promotes Taiwan-Denmark cooperation in environmental education, inspired by Denmark's integration of design, innovation, and industrialization into environmental education. This approach aims to address global sustainability issues, including climate change, through design. On January 31, 2023, the opening press conference and exhibition for the "Taiwan-Denmark Environmental Education Partnership and Index Award Exhibition" took place at Taipei Xi Ben Yuan Temple's Shuxin Hall. The event featured the Director of the Trade Council of Denmark, Taipei, Mr. Bo Mønsted, and representatives from The Index Project, a prestigious design award often likened to the Nobel Prize of Design. Attendees included Ms. Lesley Price, Director of Communications, and Ms. Charlotte Høeg Andersen, Director of Education. The event aimed to deepen the collaboration between Taiwan and Denmark in the cross-disciplinary fields of environmental education and design, united by a shared commitment to zero-waste sustainability.

丹麥 The Index Award 大賽是世界獎金最高的設計競賽，其作品評選標準以改善環境、生命為出發，每年至少有80國、5千件作品參賽。透過這次的開幕記者會與展覽，讓大家瞭解 The Index Award 的評選程序與評選重點，並透過近期得獎作品的展示與說明介紹，讓更多有興趣的設計者瞭解 The Index Award 並獲得啟發，進而鼓勵國人踴躍參與，為國爭光。

The Danish Index Award is the world's most esteemed design competition, offering significant prize money. It evaluates works based on their potential to enhance the environment and human life. Annually, at least 5,000 entries from over 80 countries are submitted to the competition. This year's introductory press conference and exhibition provided attendees with insights into The Index Award' s evaluation process and criteria. By showcasing and explaining award-winning works, the event inspired designers and encouraged them to find more about The Index Award, motivating Taiwanese designers to actively participate and attain international recognition.

In addition, the EPA recommended 20 shortlisted works from our local competitions to participate in The Index Award's international competition. This will showcase Taiwan's abundant creative energy in the realms of environmental education and protection, enabling the global community to see our innovation and creativity firsthand.

頒獎典禮與作品成果展
Award Ceremony and Exhibition

行政院環境保護署張子敬署長親臨112年4月21日在松山文創園區辦理的競賽頒獎典禮盛會，並頒發本次競賽前三名作品：三菜一湯復古防水鞋、再生蕉葉套袋、OCF（Oyster Culture Float; 改良式蚵棚器具），與佳作5名：海廢收集垃圾袋、友善孕婦的升降傾斜桌、廢油製皂機、急救充氣擔架、磯岩釣專用充氣式救生衣。競賽得獎與入圍的20件作品更分別在臺北松山文化創意園區、高雄國立科學工藝博物館與臺中國立公共資訊圖書館進行競賽成果巡迴展覽，散播環境關懷實踐家的種子，讓全民感受臺灣在地永續環保的創新與創意。

EPA Minister Chang Tzi-Chin attended the award ceremony at Songshan Cultural and Creative Park on April 21, 2023 and presented prizes for the top 3 designs: "BackToMarket®Sneakers", "Banana-pro-bag", "OCF Oyster Culture Float", along with 5 honorable mention awards: "Sea Waste Collection Garbage Bags", "AHT - Adjustable Height Tilt Desk", "WOMSOAP", "Inflatable Stretcher" and "OCEANUS".
The winners and the selected pieces were exhibited at Taipei Songshan Cultural and Creative Park, Taichung National Library of Public Information and Kaohsiung National Science and Technology Museum, to promote environmental advocacy and enable the entire population to embrace Taiwan's local innovation and creativity in sustainable environmental protection.

競賽得獎者及與會貴賓合影Group photo of award winners and guests

環保署署長張子敬表示，「淨零排放」「永續發展」等都是全球性的環境議題，臺灣身為地球村的一份子，不應置身事外，這些問題僅倚靠政府是不夠的，必須要產業及全民一同攜手合作，並透過教育持續且堅定地倡議，才能來落實。

環境關懷設計競賽就是將環境教育結合設計、創新和產業化的理念，朝向以設計來因應全球環境議題，自103年起，參賽作品從第1屆513件，到目前第5屆已增加至1149件，可看出民眾對永續問題解決的重視，本競賽已躍升為我國重要之設計大賽，讓民眾發揮創意，設計出對人類永續發展有助益之制度或作品，並且用創新的作法推廣環境教育，希望我們大家一起來努力共同為我們全球氣候變遷貢獻一份心力。

EPA Minister Chang Tzi-Chin stated that the "Pathway to Net-Zero Emissions in 2050" has been amended to the "Climate Change Response Act" by the Legislative Yuan this year (2023), incorporating into law the goal of net-zero greenhouse gas emissions by 2050, elevating net-zero emissions to a legal standard and demonstrating our country's determination to achieve sustainable development goals. Achieving net-zero emissions requires the collective transformation of industries, lifestyles, and society, and it also requires continuous and steadfast advocacy through education to implement it.

Since the Caring for the Environment Design Competition debuted in 2014, the number of entries has increased from 513 in the first edition to 1,149 in the current fifth edition. This growth reflects the public's concern with solving sustainability issues. The competition has now emerged as an important design competition in Taiwan, with the hope that we can all contribute our efforts to solving global climate change.

第一名/1st place

三菜一湯復古防水鞋
Back To Market

作者creator:馳綠國際股份有限公司/CCILU INTERNATIONAL INC.

三菜一湯復古防水鞋，是結合4種臺灣在地農漁業回收廢棄物，加上4支寶特瓶，改製成的創新鞋款。馳率團隊向臺灣小農小漁收購廢棄物，使用南投松柏嶺茶梗、嘉義阿里山鄉廢棄竹，台南七股牡蠣作為鞋材原料，環保製鞋技術從鞋面、內裡、鞋墊到大底，各主要部件，均大幅使用農漁業廢棄物材料。選擇生質材料能夠減少製鞋60%得石化原料使用，挑戰低碳足跡製程。三菜一湯谷防水鞋的售出數量每達50雙，等於回收15公斤農漁業廢棄物，團隊將捐贈$2300認養農作物捐贈給公益團體，形成ESG善的循環。

BackToMarket Earthy Sneakers are made with four different upcycles materials from agriculture ,aquaculture wastes and upcycled plastics.The outsole is madefrom tea stalks and bamboo,the upper fromcorn glucose and oyster shell.

The BackToMarket Earthy Sneakers mark a new milestone in sustainable footwear.The sneakers are also water-repellent,breathable,moisture-wicking,fast-drying,odor/mildew reducing,responsive,resilient,supportive,and provides great grip.

1.世界第一雙農漁業廢料環保鞋

World’ s first upcycled agri/aquaculture sneakers

4種台灣在地農漁業回收之生質材料，加上4 支寶特瓶打造一雙創新環保機能鞋！

4 different kinds of agriculture and aquaculture material and wastes, plus 4 plastic bottles, a pair of innovative and sustainable sneakers.

2.全鞋使用環保材質

Sustainable bio-based materials

生產過程減少60%石化原料消耗

Reduces the carbon emission by 60%.

3.建立ESG良善循環

Vision for product circularity

第二名/2nd place

再生蕉葉套袋
Banana-pro-bag

作者creator:張妍、孫郁絜、周悅儒、簡語逮、李鍇朮
CHANG,YEN/ SUN,YU-CHIEH/ CHOU,YUEH-JU/
CHIEN,YU-CHIEH/LI,KAI-CHU

再生蕉葉套袋以搖籃到搖籃的概念將大量的廢棄蕉葉及蕉樹，再生成保護果實必要的的香蕉紙套袋及香蕉纖維繩索，套袋上的試紙為果實成熟度圖示，可偵測香蕉成熟時所分泌的乙烯進行變色，方便蕉農採收、除蟲等，蕉農只須站在原地將繩索往下拉即可束緊套袋，大幅減輕體力消耗及降低作業危險性，還解決龐大農業廢棄物的問題。

Banana-pro-bag uses a cradle-to-cradle design to transform discarded banana leaves and trees into banana paper bags and fiber ropes that can be utilized to protect fruits. This design not only solves the problem of agricultural waste but also protects the fruit with the waterproof, firm, and rigid characteristics of banana paper, creating an environmentally friendly cycle through recycling.The ethylene released when bananas ripen causes a change in the color of the indicator strips attached to the bag, indicating the fruit's ripeness. This information can be used by farmers to determine the optimal time for harvest, pest control, and other tasks. When bagging, banana farmers only need to pull the ropes down to tighten the bags, reducing physical exertion and minimizing operational risks.

1.使用流程
Using process

STEP1

將再生蕉葉套袋圍繞果實

Put Banana-pro-bag around the fruit.

STEP2

將繩索往下拉緊使開口束緊

Tighten the rope down to tighten the opening place.

STEP3

根據試紙變色所到達的位置檢視作業流程

Complete the operation process according to the location reached by the discoloration of the test strip.

STEP4

等待2-3個月後打開套袋下方觀察果實成熟度

Wait for 2-3 months and then open the bottom of the bag to observe the fruit's maturity.

STEP5

拆下的套袋在採收香蕉時墊在底下防止它接觸土壤

The removed bag is padded under the banana when harvesting to prevent it from touching the soil.

STEP6

將使用完袋子敲碎作為土壤肥料

Crush the used bag as soil fertilizer.

2.產品價值
Product value

1.使用廢棄蕉葉再生套袋及蕉繩
Use waste banana leaf recycling banana bag

2.遠距即可完成套裝
The process of setting can be completed remotely

3.果實成熟指標圖示
Fruit maturity index diagram

第三名/3rd place

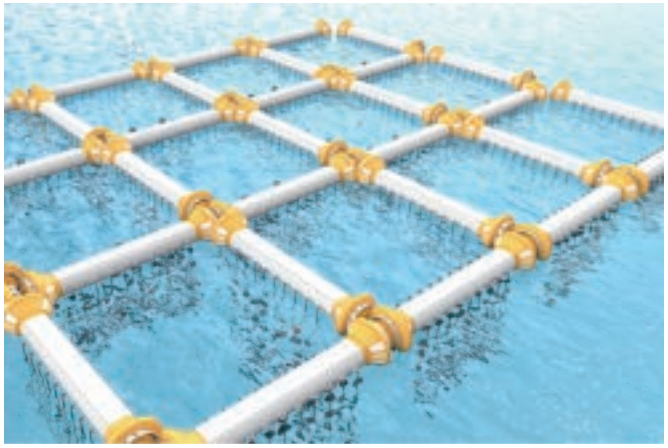
OCF

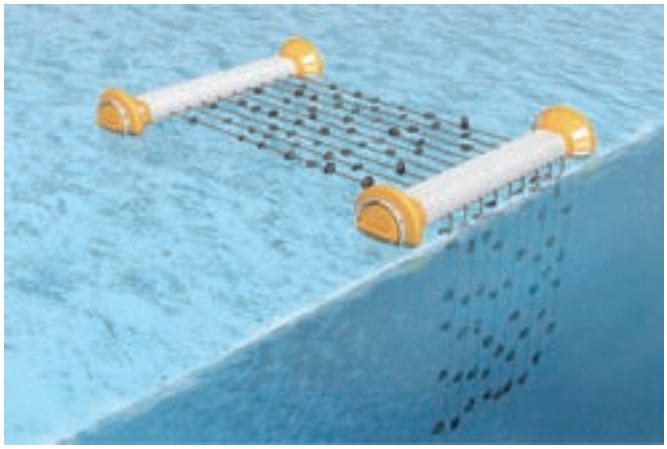
作者creator:薛凱潔、常勛宇、林仲威、陳昱廷
HSUEH,KAI-CHIEH/CHANG,HSUN-YU/LIN,CHUNG-WE/CHEN,YU-TINGI

OCF是個可透過繩索切換垂直式、平掛式及蚵棚式養殖的模組化養蚵浮台，提供蚵農於潮間帶與深海轉換使用，改善養蚵複雜流程、降低職業傷害及避免海洋汙染。OCF側邊的刻紋設計，可讓蚵農判斷吃水的情況，以了解牡蠣的生長重量與採收，而OCF的平臺也增加了蚵農在OCF行走的安全性，有效提升牡蠣產業發展，並改善傳統養蚵設施造成海洋污染的問題。

OCF is a modular oyster float that switches among vertical, horizontal, and shed types through ropes. It allows oyster farmers to switch between intertidal and deep-sea modes, simplifying the complex process of oyster culture, reducing occupational injuries, and avoiding ocean pollution.

The horizontal texture design on the side of the OCF allows farmers to judge the water intake, understand the growth weight, and monitor the harvest of oysters. Additionally, the OCF platform offers enhanced safety conditions for farmers, allowing to confidently walk inside the OCF without fear of accidents.

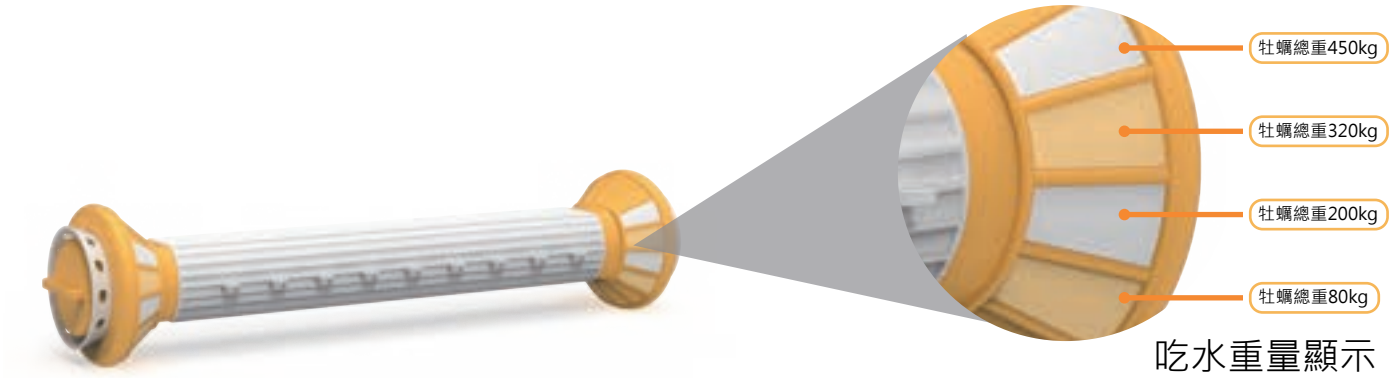




1.模組化設計
Modular design

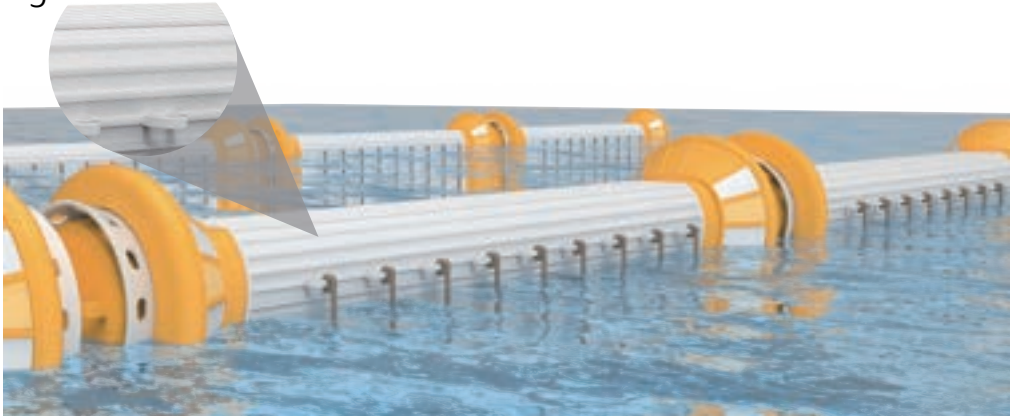
可考量了海底地形、季節、場域、移動，做為不同的使用模式
It can take into account the seabed topography, season, field, and movement as different usage modes.

2.得知牡蠣吃水的重量，以此作為是否採收的判斷
Determine whether to harvest the oyster by judging the weight of the oyster according to the draft of OCF.



吃水重量顯示
Draft weight display.

3.刻紋及平臺的設計可增加蚵農們在行走的安全性
The Horizontal texture on the OCF and the platform increase the safety of oyster farmers walking on the OCF.



佳作/ Honorable Mention
人氣獎第二名/Public Voting Prize The 2nd Place

海廢收集垃圾袋
Sea Waste Collection Garbage Bags

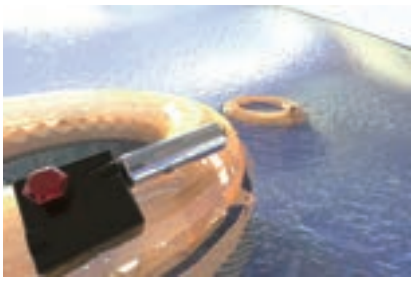
作者creator:夏芷若、許梓聰、葉洵安
HSIA,CHIH-JO/HSU,TZU-TSUNG/YEH,HSUN-AN

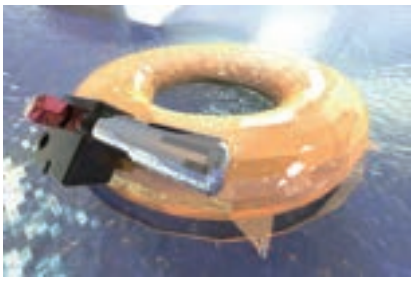
Manta解決了「海底撈」成員在下潛海中清理廢棄魚網與廢棄物時的問題，幫浮力袋充氣跟把垃圾袋掛上去浮力袋時過程太過漫長複雜，而複雜且步驟繁瑣讓整體工作有效率不佳的問題，海廢收集垃圾袋整合了目前所有使用的工具，以浮力袋結合裝垃圾的網袋，並結合了快速充氣的裝置，能使他們在清理作業時，能更有效率的完成工作，並且縮短作業時間。

Manta aims to solve the problem faced by members of the "Hai Di Lao" sea waste collection crew when cleaning up discarded fish nets and waste. The process of inflating the buoyancy bags and attaching the garbage bags was complicated and time-consuming, resulting in it being cumbersome and inefficient. The sea waste collection garbage bag integrates all the technologies currently in use by combining buoyancy bags with garbage collection net bags and rapid inflation devices. This allows the crew to complete their work more efficiently and faster.

1.充氣設備 | 快速充氣系統

Inflation equipment | Rapid inflation system.





內建壓縮空氣快速充氣系統，能省去傳統連接後背式充氣瓶的繁瑣過程，節省時間。

The built-in compressed air rapid inflation system eliminates the cumbersome process of connecting a traditional backpack-style air bottle, saving a lot of time.

2.器具整合 | 省去繁瑣不便的過程

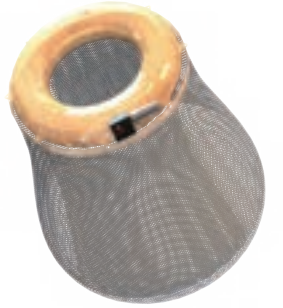
Equipment integration | Eliminate cumbersome and inconvenient processes.

傳統浮力袋

Traditional buoyancy bags.

傳統裝海廢的垃圾袋(洋蔥袋)

Traditional garbage bags (onion bags) used for collecting marine debris.



整合了浮力袋裝海廢的網袋

An integrated buoyancy bag and mesh bag for collecting marine debris.

3.摺疊收納 | 可通過摺疊收納來縮小的體積

Foldable storage | Volume can be reduced by folding for easy storage.

網袋展開後可放進海廢

After being unfolded, the net bag can accommodate marine debris.

可以把MANTA壓扁後再對折，達到輕便的效果

MANTA can be flattened and then folded in half to achieve a lightweight effect.

佳作/ Honorable Mention

友善孕婦的升降傾斜桌
AHT-Adjustable Height Tilt Desk

作者creator:張妍、孫郁絜、周悅儒、李鍇朮
CHANG,YEN/ SUN,YU-CHIEH/ CHOU,YUEH-JU/ LI,KAI-CHU

AHT Desk是一款為孕婦所設計，以Z軸和Y軸調節高度及傾度的辦公桌，減緩孕婦因肚子龐大而影響坐姿的限制。AHT Desk 達到即時性切換站立及坐式模式，除了讓孕婦間歇性站立以減緩久坐的不舒適感，還提供臨時且舒適的趴睡或仰睡姿勢避免壓迫肚子，也提供一般工作者站立式辦公的益處，提升生產力及專注度，並有效降低長時間久坐的疾病。

The Adjustable Height Tilt (AHT) desk is designed specifically for pregnant women, with an adjustable height and inclination mechanism that can alleviate the discomfort of sitting faced by pregnant women due to their large bellies. Unlike existing vertical lifting tables, the desk can be adjusted through both its Z and Y-axes, making it customizable for women with different belly sizes and heights, and allowing for instant switching between standing and sitting.In addition to intermittently allowing users to stand to alleviate discomfort caused by prolonged sitting, the desk provides comfort when lying down or in a supine posture by adjusting the inclination to avoid pressing against the belly. It can also be used as a standing work table for general users, which helps improve productivity and concentration and reduces the health risks associated with sedentary behavior.

設計要點
Design points

Mode A
升降傾斜睡式
Sitting posture of lying down

Mode B
升降站式
Standing desktop

Mode C
升降傾斜坐式
Lift tilt sitting

Mode D
基本辦公桌模式
Basic mode

佳作/Honorable Mention

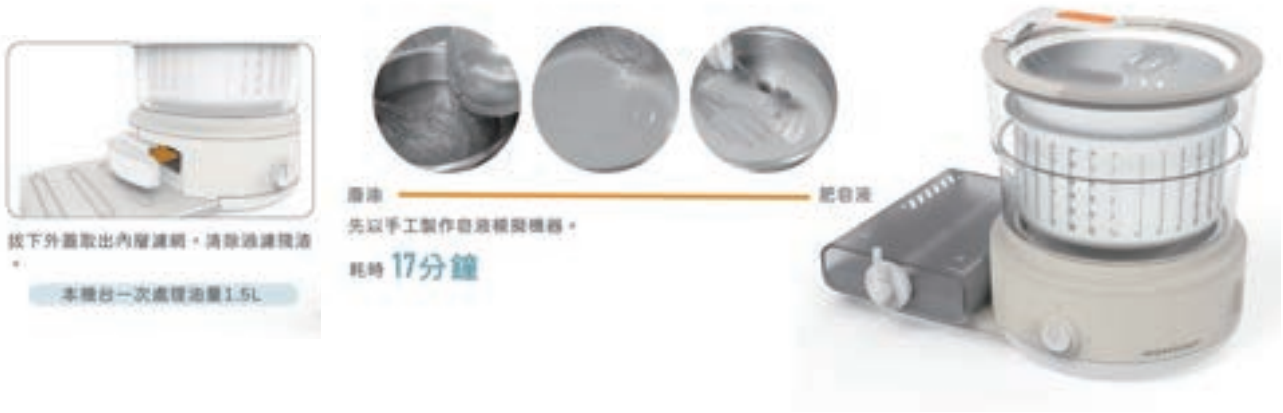
廢油製皂機
WOMSOAP

作者creator:蔣瑋庭/陳又睿/李鍇朮
CHIANG,WEI-TING/CHEN,YU-JUI/LI,KAI-CHU

廢油製皂機是款將炸物產生的廢棄油品濾出製做成肥皂的電器產品，解決餐飲業者廢油回收問題，提供成分較於天然的清潔液。本機台透過離心力將炸物的油脂分離，加上鍋爐內的廢油，進行過濾至裝有氫氧化鈉的洗潔液瓶中，以電磁力技術將其內容物充分均勻攪拌，取出後等待一夜加入水混和，即可使用在刷洗地板油漬、餐廚臺等地方。有效將廢棄物再利用，降低對環境的損害。

WOMSOAP is an electrical appliance designed to filter and produce soap from the waste oil generated during frying. It solves the problem of waste oil recycling in the catering industry and provides a cleaning solution with more natural and environmentally friendly ingredients. The machine uses centrifugal force to separate the oil from the frying material and filters it along with the waste oil in the boiler into a detergent bottle containing sodium hydroxide. Using electromagnetic force technology, the contents are thoroughly mixed. After leaving it overnight and adding water, it can be used to clean oil stains, kitchen counters, and other areas. This effectively recycles waste and reduces environmental damage.

製皂體驗
Soap Experiment



製造成香皂
Wasted oil turn into soap

環保5R
Green 5R

佳作/Honorable Mention

急救充氣擔架
Inflatable Stretcher

作者creator:吳郁心/WU,YU-HSIN

急救充氣擔架是整合緊急救護流程所需之各項醫療器材的急救擔架包，提供充足的器材給施救者處理傷患傷害部位，讓施救過程更直覺、系統性操作，防止驚慌誤判造成二次傷害。此外，充氣式擔架小巧輕便且可應用在各種場所的緊急救護、水域救援等各種災害傷員搶救，以及居家、體育場地、救護車運送傷員。

The 'Inflatable Stretcher' is an emergency stretcher bag that integrates the various medical equipment required for the emergency rescue process. It provides sufficient equipment for the rescuer to deal with the injured party, making the rescue process more well-used and systematic, and preventing accidents caused by panicked injury. Additionally, the inflatable stretcher is compact and lightweight, making it useful for rescuing the wounded in various disasters such as emergency and water rescue in any location. Whether it's a water rescue, natural disaster, or simply transporting the injured, this versatile stretcher is an essential item for any emergency responder or medical professional.

1.適合的場域
Suitable field/venue

相較於醫療專業級的擔架，它更適合使用在居家的空間，或是在公共場所與 AED 共用更完善急救流程，同時針對充氣擔架的特點也適用於海上救援。

Compared to the professional-grade medical stretcher, it is more suitable for use in home environments or public places where it can be used together with AED for a more comprehensive first aid process.

2.整合3種醫療器材

急救充氣擔架是以基本的急救流程作為設計背景，將急救包、護木，還有擔架，整合進產品中，並以方便攜帶、操作直覺作為設計重點。

The emergency inflatable stretcher is designed based on the basicfirst aid procedures, integrating the first aid kit, splint, and stretcher into the product, with the design focus on portability and intuitive operation.

3.操作直覺
Intuitive operation

附上直覺又簡單的教學指示，幫助我們在面臨緊急的情境下，降低傷害的風險。

These devices are equipped with intuitive and simple instructional guides to help us operate them in emergency situations and reduce the risk of injury.

佳作/Honorable Mention

磯岩釣專用充氣式救生衣
OCEANUS

作者creator:林柏融/LIN,PO-JUNG

磯岩釣的風險極高，經常發生落海意外，釣客落海後頭部遭到撞擊且死亡的機率極高。OCEANUS重新規劃氣囊配置，增設了頭頸部區域的保護用氣囊保護釣客在落海後頭部不受撞擊，同時在落海後口鼻部保持於海面上以維持呼吸暢通提升釣客生還率。重新設計其版型，改善傳統充氣式救生衣收納空間不足的缺點。

Compared to other forms of fishing, rock fishing is extremely risky due to its long waves, often leading to accidents and a high risk of anglers being hit in the head and dying after falling into the sea. To address this issue, OCEANUS has developed a new airbag layout that includes additional airbags in the head and neck area, protecting anglers from head injuries after falling into the sea. This design also allows anglers to keep their mouths and noses above the surface for free breathing, enhancing their survival rate. OCEANUS has also redesigned the layout to improve upon the traditional inflatable life jacket's storage space and enhance flexibility during activities.

1.重新規劃氣囊配置

OCEANUS have a new airbag layout.

增設了頭頸部區域的保護用氣囊保護釣客在落海後頭部不受撞擊

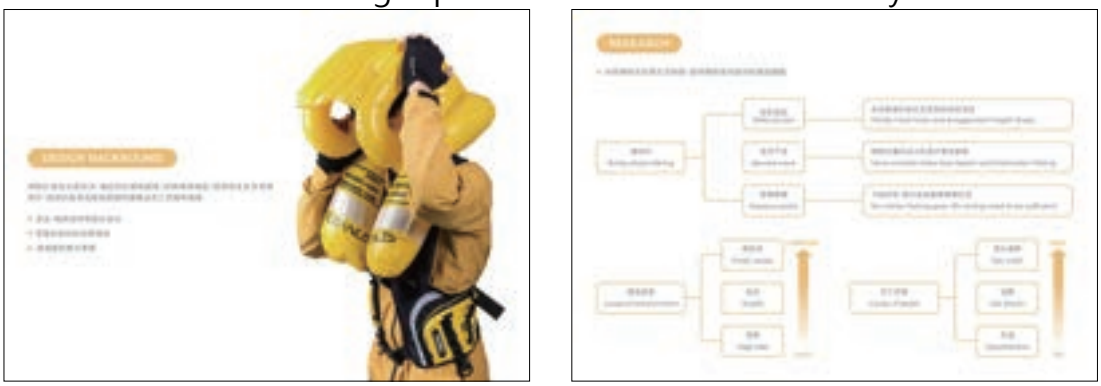
Additional airbags in the head and neck area to protect the angler's head from being hit after falling into the sea.

2.重新設計其版型

Redesigned its layout.

改善傳統充氣式救生衣收納空間不足的缺點

Improve the shortcomings of the traditional inflatable life jacket storage space and enhance the flexibility of activities.



提供磯釣客完善的防護及體驗

Provide perfect protection and experience for rocky anglers.

入圍/ Shortlisted
人氣獎第一名/Public Voting Prize The 1st Place

廢魚網旋轉收集機
Spinnet

作者creator:莊玉禪/CHUANG,YU-CHAN

海灘上的廢棄漁網通常因為重量而無人處理，一個廢棄漁網至少需要7-10個成年人才有辦法搬動，導致就算有淨灘也還是會被留在沙灘上。廢魚網旋轉收集機以省力且安全的方式，先將機器運至漁網廢棄的地點，透過以旋轉的力量將廢漁網抽離沙灘，並可連接於沙灘車後方運離沙灘，將漁網取下後前往回收處理廠進行後續的加工處理。

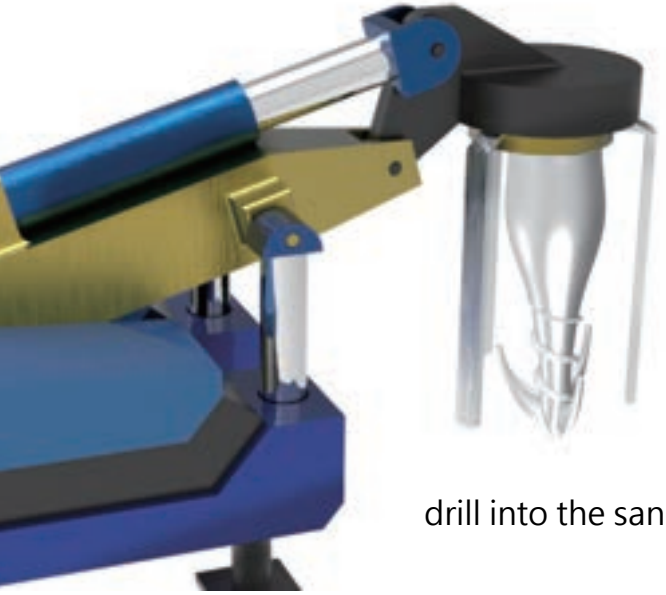
Abandoned fishing nets on the beach are usually left unattended due to their heavy weight. It takes at least 7-10 adults to move a single net, making it difficult to remove even with beach cleaning efforts. Spinnet, the Rotary Collector for abandoned fishing nets, provides a safe and efficient way to remove these nets. The collector can be transported to the location of the abandoned nets and, through the force of rotation, pull the nets away from the beach. The nets can then be connected to the back of a vehicle for transport and taken to a recycling facility for further processing.

1.有助於漁網收集回收並減少人力

Helpful for collecting and recycling the fishing nets, and reduce human power

原需至少7-10人才能移動廢漁網，現只需至少1-2人

People needed for collecting abandoned fishing nets reduces from 10 people to only two people.



2.排沙鑽頭

with sand removal function

鑽頭具排沙功能，可以更好地鑽入沙灘，並安全地旋轉並收集漁網

The drill with sand removal function can not only drill into the sand easily, but also spin and collect the fishing net safely.

3.沙灘車運送

Transport by an ATV(all terrain vehicle)

能夠勾在沙灘車後方以便移動機器

The vehicle can be attached to the back of an ATV for transportation.

入圍/ Shortlisted
人氣獎第三名/Public Voting Prize The 3rd Place

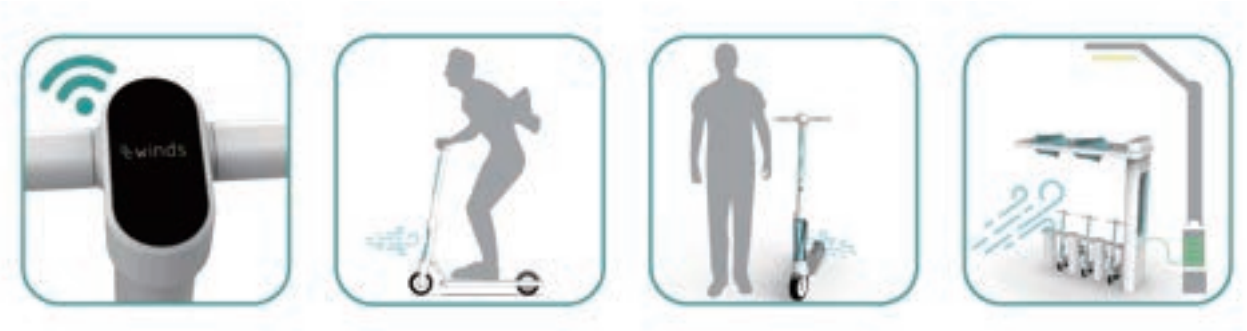
WINDS 風力發電電動滑板車
WINDS Wind-powered electric scooter

作者creator:楊承翰/YANG,CHENG-HAN

隨著近年來全球能源開始走向危險的趨勢，為了能減少碳排放，並提升交通效率，不少城市開始盛行租用電動滑板車。我們將這樣的微型交通服務模式帶入到臺灣的海濱風景區並結合風力發電的機械結構，將騎乘電動滑板時所遇到的風阻皆轉換為可持續使用的再生能源，達到循環在利用的效果。

With the recent global energy shortage, many cities have adopted electric scooter rentals to reduce carbon emissions and improve transportation efficiency. We have brought this service model to Taiwan's coastal areas and combined it with a wind-powered mechanical structure. The wind resistance encountered while riding the scooter is converted into sustainable renewable energy, achieving circular utilization.

1.設計特點
Design Features



隨時租借
Rentals at anytime

騎乘發電
Ride power generation

海風儲電
Sea wind power storage

公共儲電
Public storage

2.風扇設計
Fan Design

這種葉片風扇垂直於風的流動方向，周圍的風可以帶動葉片風扇旋轉。我們選擇海邊作為該產品的使用區域，通過海風、陸風等循環風對電動滑板車進行持續充電。

This type of blade fan is perpendicular to the flow direction of the wind, and the wind from the surrounding can drive the blade fan to rotate. We choose the seaside as the use area of this product, and charge the electric scooter continuously through the circulating wind such as sea and land wind.

3.充電站
Charging Station

電動滑板車儲能點位於風力較強的地區與風力發電裝置相結合，增加了儲能能力，彌補了電動滑板車騎行到風力較弱地區時的發電問題。

The electric scooter storage point is located in the area with high wind power combined with the wind power generation device, which increases the power storage capacity and compensates for the power generation problem when the electric scooter rides to the area with low wind power.

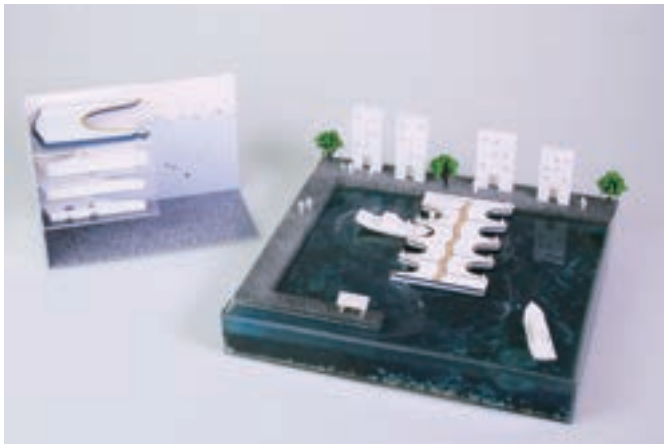
入圍/Shortlisted

Trash Taker
Trash Taker

作者creator:林祐葳、阮石涵、陳紀禮 /
LIN,YU-WEI/JUAN,SHIH-HAN/CHEN,CHI-LI

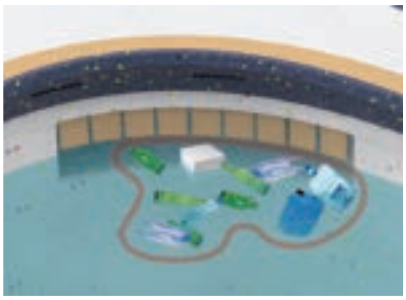
Trash Taker在不干擾漁民生活的前提下，通過漁港水流的特點收集垃圾，並且為漁港內的水下生物提供棲息地，維護港口的生物多樣性和環境。收集到的垃圾最終也會轉化為我們產品的原材料，形成循環經濟。

Trash Taker collects sea waste by taking advantage of the characteristics of the water currents in the fishing port without disturbing the lives of fishermen. It also provides an environmentally friendly habitat for marine animals, maintaining biodiversity. The collected waste will eventually be transformed into raw materials for our products, forming a circular economy.



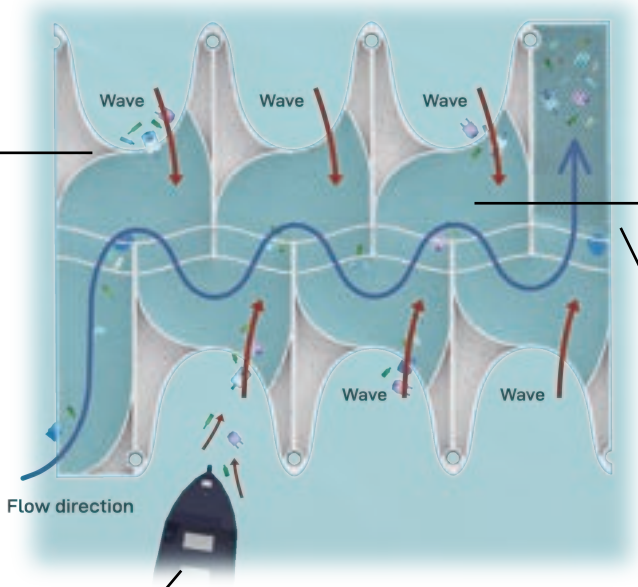
海流收集垃圾

Ocean currents collect garbage

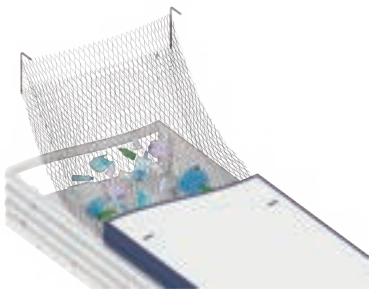


經常聚集在角落的垃圾
被產品的U型停船口攔截
Garbage that often gathers in corners is intercepted by the U-shaped docking port of the product

水流會將垃圾順著水道推向收集網
The water flow will push the waste down the waterway to the collection net



漁船靠岸引起的海浪
將垃圾推入產品中
Waves caused by fishing boats docking push garbage into the product



定期打開產品收集垃圾
Regularly open the product to collect garbage

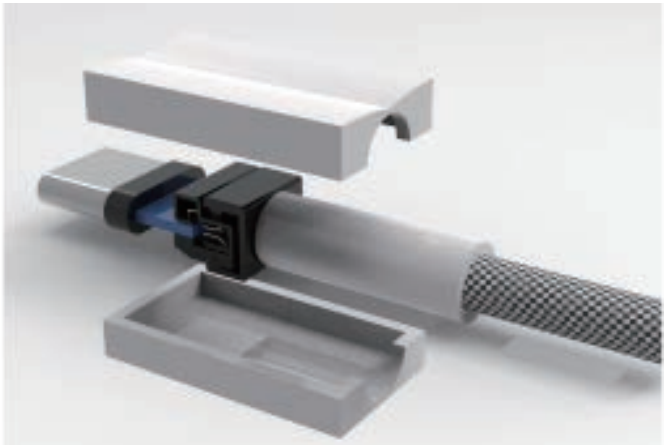
入圍/Shortlisted

一拉即拆線材
ZipWire

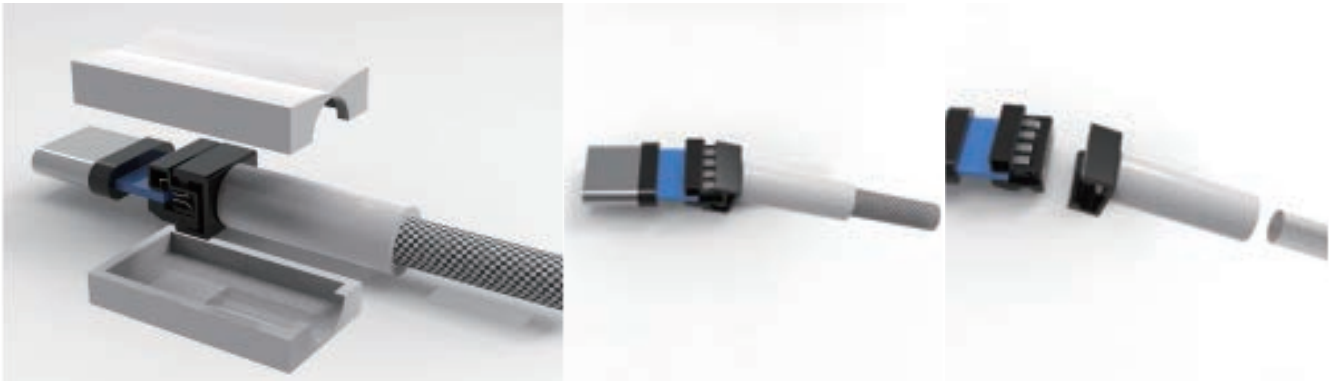
作者creator:連三今/LIEN,SAN-CHIN

廢電器是最具有經濟價值的回收品項，根據統計臺灣109年回收量有12萬公噸，其中回收再利用的材料超過10萬公噸，產值新臺幣13億元。而電線中的金屬屬於高回收價值材料，但表面通常包覆著PVC或橡膠，大部人無法自行拆解。Zipwire是透過能結構與工具，讓大眾能夠快速拆解和分類回收，減少物流與提升回收率，創造循環經濟。

Electronic waste is one of the most valuable items for recycling. In 2020, 120,000 metric tons of e-waste were recycled, with over 100,000 metric tons of materials suitable for reuse, creating a value chain worth NT$ 1.3 billion. Metals used in electric wires are high-value materials, but they are usually covered with PVC or rubber, making them difficult to disassemble. Zipwire provides a tool that enables everyone to quickly disassemble and categorize materials, reducing logistics costs and increasing recycling rates, thus achieving a circular economy.

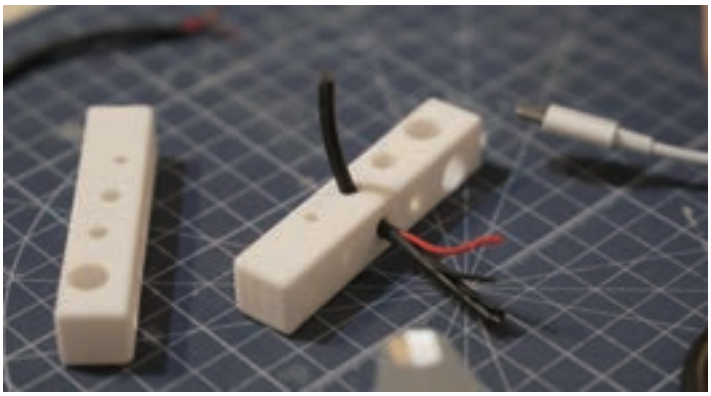


1.結構/模組化的公頭設計
A design that is modular and easy to assemble.



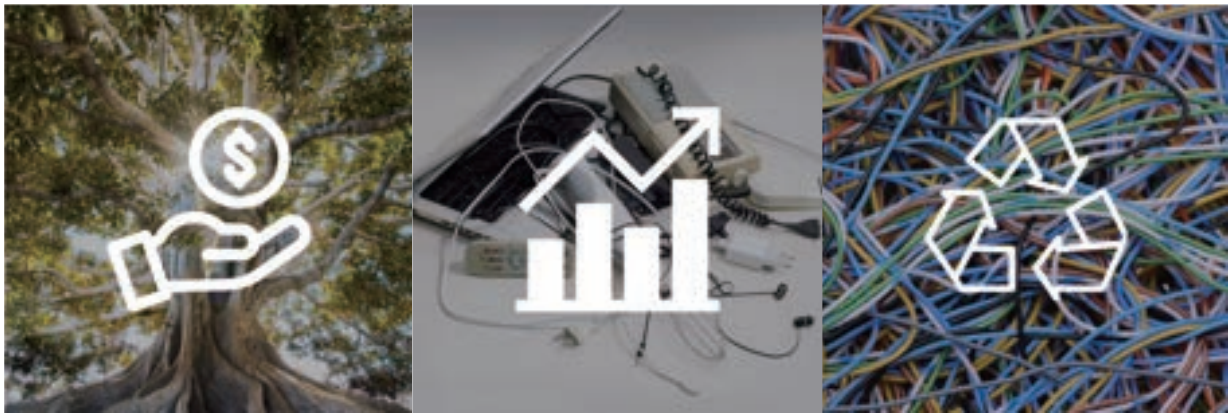
老舊線材更新後繼續使用
Replace old wire with a new one according to the instructions.

2.工具/一拉及拆分類線材
Tools for pulling and separating wires.



使用工具讓大眾能夠自行拆解回收
Use tools to enable the public to disassemble and recycle on their own.

3.永續設計/簡化回收系統,延長產品生命
Circular design that simplifies recycling and extends product life.



入圍/Shortlisted

重生
RE Breath

作者creator:周悅儒、簡語逮 、孫郁絜、李鍇朮
CHOU,YUEH-JU/CHIEN,YU-CHIEH/SUN,YU-CHIEH/LI,KAI-CHU

為解決顧慮衛生問題迴避急救、後續法律糾紛的責任歸屬、擔心操作不當與遺忘流程而不敢實行CPR的問題。RE　Breath藉由面罩與簡易供氧設備，不需口對口也能提高氧氣供給。同時配合叫叫CAB的步驟，提供語音指導操作、暢通呼吸道以及胸腔按壓對位工具，讓流程施救更為順暢提高復甦機率。並於實施CPR時全程錄影存證，提供救護者保障。

Avoiding first aid to address concerns about health issues, attribution of responsibility for subsequent legal disputes, and fear of improper operation and forgetting the process without dare to implement CPR. RE Breath can improve oxygen supply without mouth to mouth using a mask and simple oxygen supply equipment. At the same time, in conjunction with the step of calling CAB, voice guided operations, unblocked respiratory tract, and chest compression alignment tools are provided to make the process of rescue smoother and improve the probability of resuscitation. During the implementation of CPR, the entire process of video recording and evidence storage is provided to provide protection for the rescuers.

1.安裝場域
Use Field and Context

公園/運動場
Park/Playground
大型活動期間
Major events
救護站人員
Ambulance station
隨身攜帶
Taken with

救生員
Lifeguard

公寓/大廈
Apartment/Building
企業/大廈
Apartment / Enterprise
管理室
Management room
靠牆放置
Against wall placement

交通工具
Transportation
公共交通運輸
Public transportation
車站/車廂
Station / Compartment
安裝於AED旁
Installed beside AED

2.操作步驟
Operational Steps

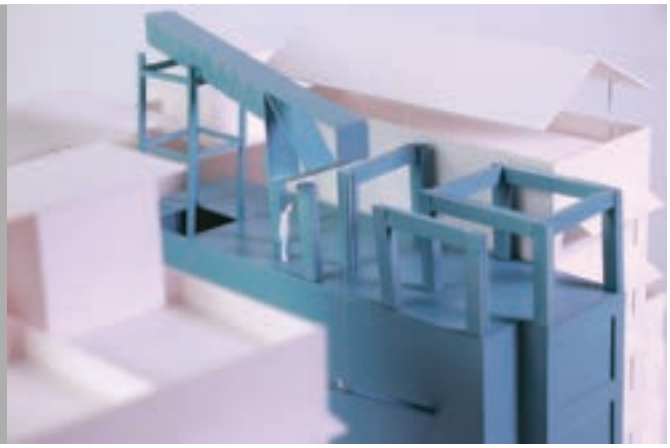
入圍/Shortlisted

台灣厝
1 House for All

作者creator:國立陽明交通大學跨領域設計科學研究中心
Transdisciplinary Design Innovation Shop(TDIS)

台灣厝是一個永續城市發展的催化劑，在整合型都更尚未完成產生的閒置空間中，置入一個國產工程木構為結構的可重複組裝的社會住宅。在漫長的都更等待期中創造一個具有高度社會適應性和彈性的可負擔住宅，不僅創造一個宜居的空間、社區基礎建設，更驅動營建產業的轉型。以社會面、生活面、技術面、經濟面驅動永續城市的發展。

"1 House for All" serves as a catalyst for sustainable urban development by constructing circular-designed social housing with domestically-engineered timber construction in the vacant space of integrated urban renewal. This initiative creates affordable housing with high social adaptability and flexibility during the prolonged waiting period of urban renewal, providing a livable space and community infrastructure while also accelerating the transformation of the construction industry. Furthermore, it promotes the development of sustainable cities in society, lifestyle, technology, and economics.

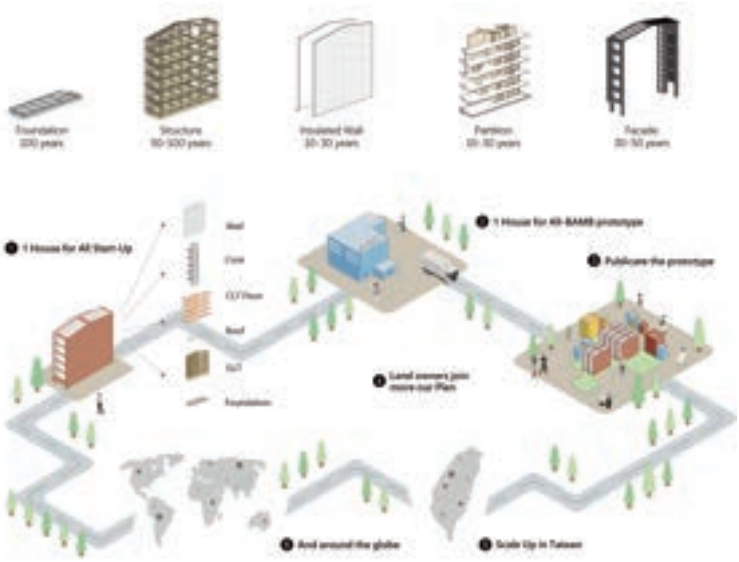


1.驅動淨零碳排的營建產業

Drive the Net Zero Emission of Construction Industry

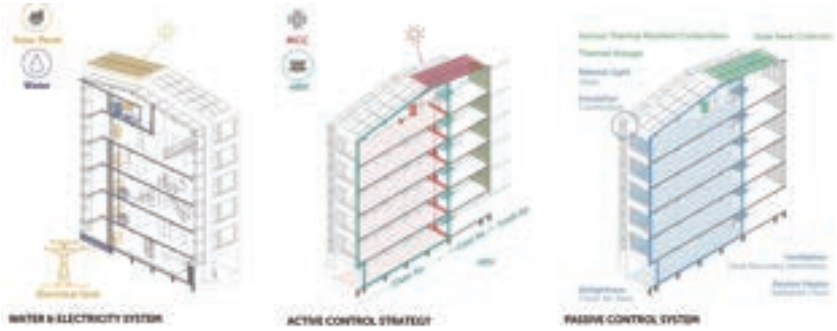
為了保持材料的價值，概念是設計一個可翻轉的系統，以便於組裝和拆卸。 並且該施工方法可以減少對材料的影響，使材料可以進入當地建築業的內部和外部生產線並延續其生命週期。

In order to maintain the value of materials, the concept is to design a reversible system for easy assembly and disassembly. And the construction method can reduce the impacts on materials so that the materials can enter the internal and external production lines of the local building industry and continue its life cycle.



2.平衡人體舒適與資源消耗

Balance the Comfort and Resource Consumption

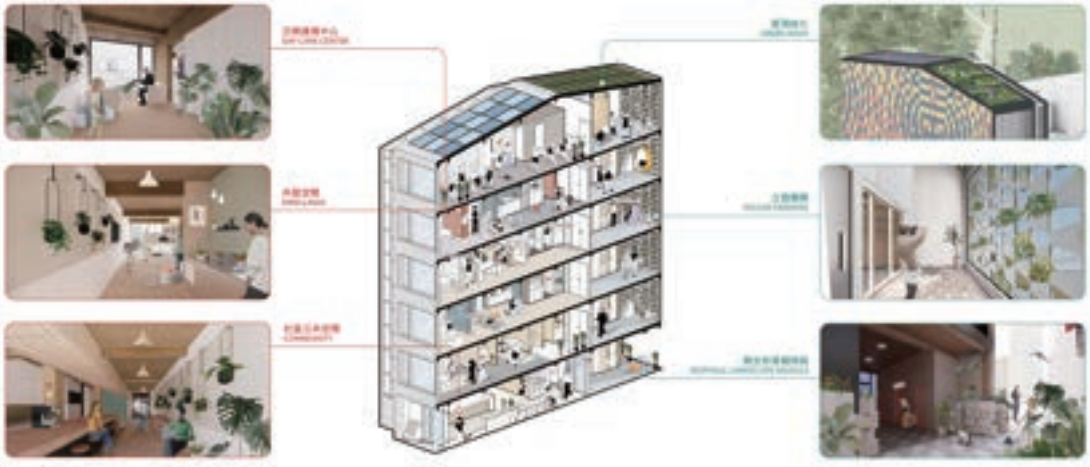


台灣厝將可再生能源與被動房設計方法相結合。

1 house for all combines renewable energy with the passive house design method.

3.一個親生命的未來鄰里

A Biophilic Future in Neighborhood



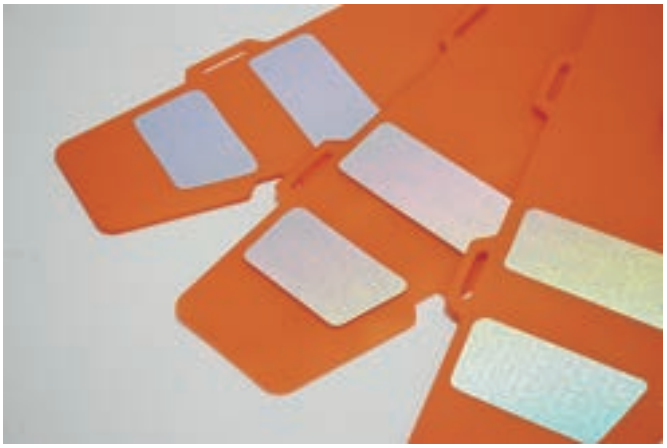
入圍/Shortlisted

組合式道路安全錐
Apiece

作者creator:張鈺群/CHANG,YU-CHUN

組合式道路安全錐採用片狀造型，再加上直覺性的扣環機制，可以獨立存在亦可無限拼接。即使被撞倒它也會散開平躺在路面上以減少事故。在運輸過程中不占用儲存空間，可以提高儲存能力。板狀形狀最大限度地減少了模具和耗材的成本，實現了綠色循環，以使物品妥善保存並方便使用者物品收納。

Apiece adopts a sheet shape, coupled with an easy-to-use buckle mechanism that allows it to be connected without limitation. Even if knocked down, it will simply spread out and lie flat on the road to avoid accidents. With a high storage capacity and a plate-like shape that minimizes the cost of molds and waste, Apiece achieves the goal of a green cycle while remaining cost-effective and user-friendly.



1.現有問題
Existing problems

交通錐是城市的一個特色，也是道路安全的重要組成部分，而全世界估計有 1.4 億個交通錐正在被使用。由於現有的交通錐未經過特別設計，因此它們不僅浪費成本，還存在許多安全問題。因此 Apiece 被設計出來改善目前的種種問題。

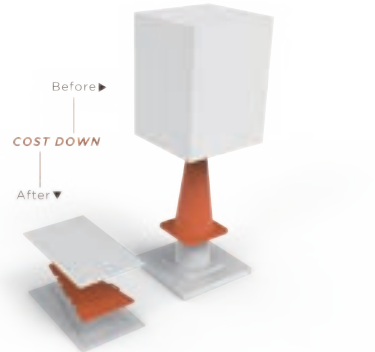
Traffic cone is one of the features of a city and an important part of road safety. Because the existing traffic cones have not been specially designed, they not only waste the cost, but also have many safety concerns. Therefore, apice is designed to improve the current situation.

2.扁平化設計
Flat design

扁平的設計減少意外的發生
Flat design reduces accidents.

3.材料使用:回收塑料
Use recycled plastic

空間利用率優化
The optimization of space utilization.



使用回收塑料、縮小模具
Use recycled plastic and shrink molds.

入圍/Shortlisted

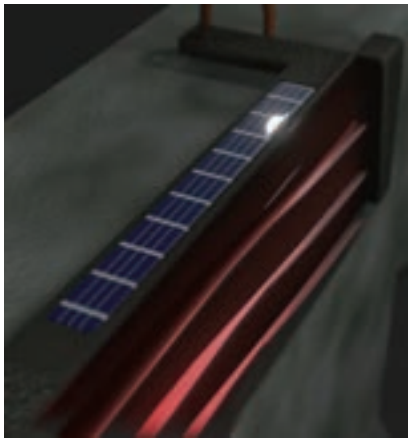
玻璃環保導標
Environmental protection glass guide sign

作者creator:陳睿翔、林奕濬、陳亭諺
CHEN,JUI-HSIANG/LIN,YI-CHUN/CHEN,TING-YEN

台灣道路反光交通指標長期缺乏維護，導致反光塗料剝落、壓克力反光板氧化降低反光效果，嚴重影響道路交通安全。因此，我們運用玻璃不易氧化之特性取代壓克力反光導標，展現玻璃不可取代性。同時取代不環保反光塗料及壓克力等材料定延長使用壽命。
使用100%回收矽製成的PERC太陽能板供給電力來源，利用再生材的特性取代原有材料因使用壽命短而影響道路交通安全，在確保路人的安全同時也能達到環境整潔與永續的目標。

The lack of maintenance of reflective traffic indicators on Taiwanese roads has led to peeling of reflective paint and oxidation of acrylic reflectors, resulting in a serious impact on road traffic safety. Therefore, we are replacing the acrylic reflective indicators with glass as it is less prone to oxidation and is more durable. Simultaneously, we are replacing non-environmentally friendly reflective paint, acrylic, and other materials to extend the service life of the indicators.
To provide a sustainable power source, we are using 100% recycled silicon to make PERC solar panels, which replace the original materials that have a short service life and affect road traffic safety. This initiative ensures the safety of pedestrians while achieving the goals of environmental cleanliness and sustainability.

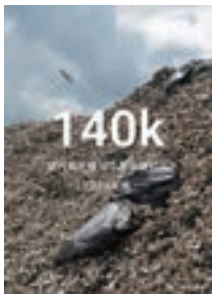


1.廢棄玻璃再利用
Reuse of waste glass

玻璃具循環再生的特性，使用玻璃可以驅使我們珍惜有用資源，
轉化貪方便和浪費的思維
Glass has the characteristics of recycling. The use of glass can drive us to cherish useful resources and change our thinking of greed for convenience and waste.

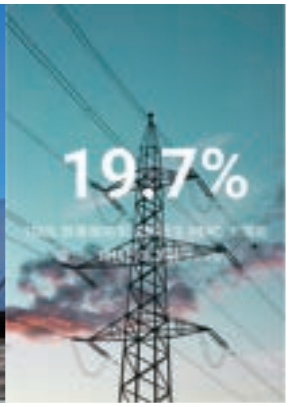
2.賦予蚵殼新生命
Giving new life to oyster shells



被嘉義縣視為百年難題的廢棄牡蠣殼，近年在官方、民間通力合作下，可望成為循環經濟的熱門原料，年產值上看百億

Discarded oyster shells, which have been regarded as a century-old problem by Chiayi County, are expected to become a popular raw material for the circular economy with the joint efforts of the government and theprivate sector in recent years, with an annual output value of tens of billions.

3.更環保的綠電
More environmentally friendly green electricity



發展潔淨能源的美意，恐被棘手的廢棄物問題而掩蓋，廢太陽能板的回收已是全球當務之急

The good intention of developing clean energy may be overshadowed by the thorny waste problem. The recycling of waste solar panels has become a global priority.

入圍/Shortlisted

茶枝培育杯
Tea seedling Pots

作者creator:陳昱廷、薛凱潔、林仲威
CHEN,YU-TING/HSUEH,KAI-CHIEH/LIN,CHUNG-WEI

茶枝培育杯是以永續循環的概念為核心，採用定期修剪的茶枝來做為容器材料，使用雙層的結構，內含肥料，讓茶苗在移植前可完整保護根部，提高存活率，減少茶苗商使用塑膠袋育苗的行為。亦符合栽種機具大小，讓茶農可以機械化的移植，做大量的栽種。

Tea-seedling Pots embody the concept of perpetual circulation, making them perfectly suited to the scale of planting equipment. This allows tea farmers to transplant mechanically and perform a lot of planting. The tea branches are used as container materials, and a double-layer structure is employed, which contains fertilizers. This structure fully protects the roots before transplanting, improves the survival rate, and reduces the use of plastic bags by tea seedling traders to raise seedlings.

1.議題發現-塑膠育苗袋
Issue-Plastic Seedling Bag

1.為便於運送茶苗多以裝土塑膠育苗袋進行扦插繁殖
Plastic seedling bags can’ t be recycled
, which is easy to cause the problem of field pollution of.

2.塑膠育苗袋培育的茶苗較不適合利用機械化移植
The tea seedlings cultivated with plastic seedling bags
are not suitable for mechanized transplantation

2.循環材料
Material

產品採用生物可分解材質，埋入土壤後6~8個月可分解，不會造成環境污染。設計上考量根系容積量，讓茶苗獲得足夠養分與生長空間，並採用四個面向加上蓋方式
It’ s made of biodegradable material, which can be decomposed within 6~8 months after being buried in the soil, without causing environmental pollution. Considering the structure and the volume of the root system in the design, the tea seedlings can obtain sufficient nutrients and growth space. It can also be used as root control pots for other plants.

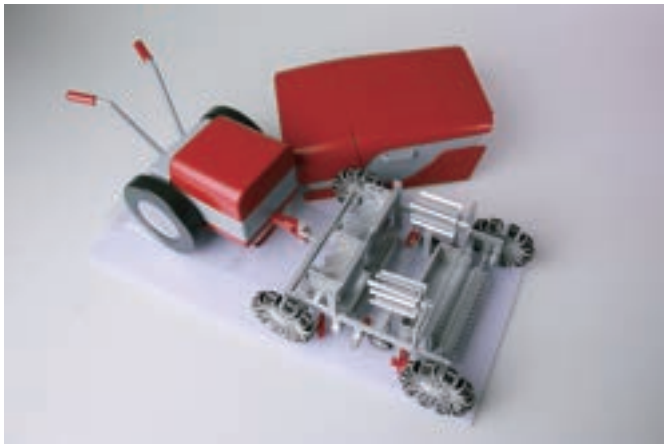
入圍/Shortlisted

地膜播種回收機
PFSRM

作者creator:李鍇朮、劉音棋、曾振彥、陳又睿、吳宥頡、曾玟心、林子筠、蔣瑋庭
LI,KAI-CHU/LIU,YIN-CH/ TSENG,CHEN-YEN/CHEN,YU-JUI/
WU,YU-CHIEH/TSENG,WEN-HSIN/LIN,TZU-YUN/
CHIANG,WEI-TING

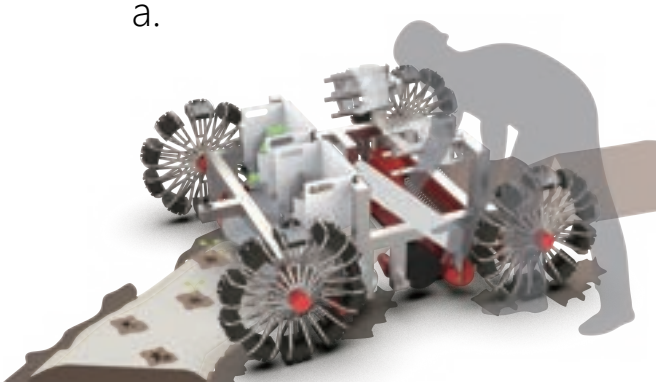
地膜播種回收機是一臺幫助農民同時進行翻土、舖膜、播種和回收地膜的農具。使用時，前方滾軸會進行翻土，中間進行舖膜和覆土，後方則會進行播種，而當收成結束後，透過上方的滾軸在前進時回收捲起地膜，再透過下方的滾軸回收殘留破損於土壤中的地膜塑膠，使用農具可幫助農民減少人力和時間的損耗，以及減少環境污染和增加產量。

PFSRM is a farm implement that helps farmers with tilling, laying plastic mulch, planting, and retrieving the plastic mulch in one go. During operation, the front roller tills the soil, the middle part lays and covers the plastic mulch, and the rear part plants the seeds. After harvest, the plastic mulch is rolled up and retrieved using the top roller while moving forward, and the damaged plastic mulch left in the soil is collected using the bottom roller.
By using this innovative farm implement, farmers can significantly reduce labor and time consumption, as well as minimize environmental pollution and increase long-term productivity.



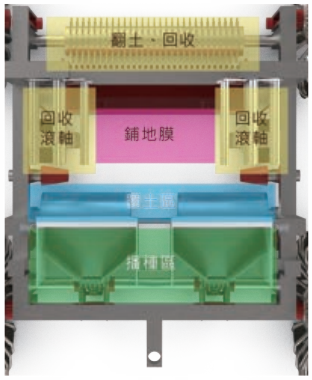
1.翻土+鋪設地膜+播種
Turn the soil + lay mulch + sow.

a.



a.操作人機比例
Man-machine ratio.

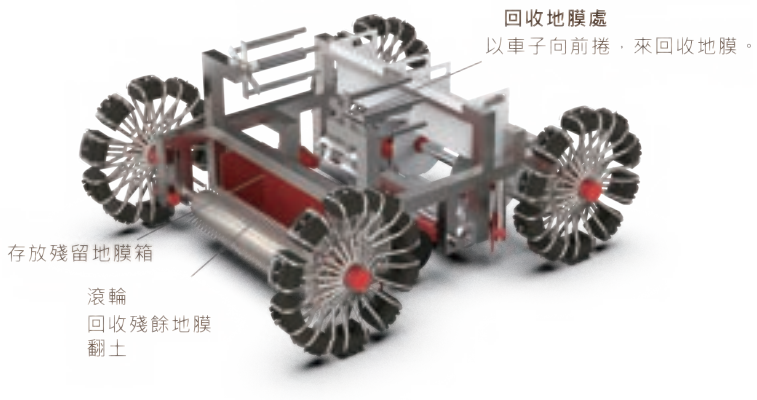
b.



b.前方是翻土，中間放置地膜，後方是種植區域。
The front is to turn the soil, the middle is to place the mulch,and the rear is the planting area.

2.回收大面積地膜、破損地膜
Recover large area mulch and damaged mulch.

c.上方滾軸回收，
下方翻土處回收殘留地膜。
The upper roller shall be recovered, and the residual mulch shall be recovered from the bottom turning.



d.牽引機拉動
Pull by tractor.

e.馬達推動
Motor drive.

入圍/Shortlisted

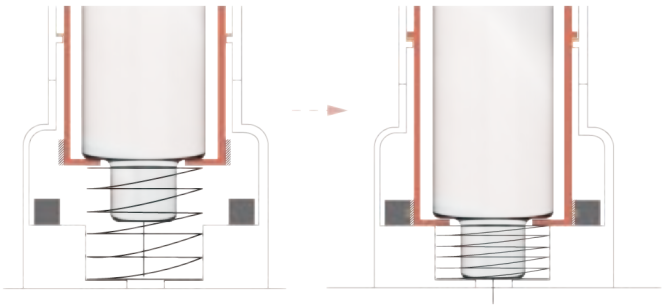
KHA TSHIU獨居長者胰島素施打輔助系統
System for Insulin Injection Assistance in Solitary Senior

作者creator:張愛若/CHANG,AI-JO

糖尿病為長者五大死因之一。根據調查92.3%的使用者的注射時間皆未達標準10秒時間及35%以上未輪替施打部位，造成藥物浪費、血糖控管不佳，更會提高低血糖的風險。獨居長者因身體機能退化，易導致低血糖發作而未能及時獲救，也容易使長者引起負面傾向。因此藉自動化注射過程、提醒每次施打部位、線上平台，使獨居長者的施打過程更安全。

Diabetes is one of the leading causes of death among the elderly. Shockingly, a recent survey found that 92.3% of users did not inject their medication for the recommended 10-second period, and over 35% did not rotate the injection site. This leads to a waste of medication, poor blood sugar control, and an increased risk of hypoglycemia. For elderly people living alone, this can be particularly dangerous due to the risk of not receiving timely help. To address this issue, an automated injection process, reminders for rotating injection sites, and an online platform have been developed to make the injection process safer and more efficient for elderly people living alone.

1.精準注射秒數模組
Precision Injection Time Module



透過壓下按鍵觸動感應器之計時器原理、磁性相吸等，
可自動控制注射針頭停留於皮下達足夠之秒數，解決注射耗時過短的問題。
Automatic timer and magnetic attraction mechanisms enable the injection needle to stay under the skin for the required duration, solving the problem of injections being too short.

2.無線充電器
Wireless Charger

以無線感應模式充電。
Wirelessly charged by induction mode.

3.注射管理平台
Injection Management Platform

長者可透過App視訊詢問醫師及提醒注射之過程、
醫師則由網站確認並解答患者於家中狀況，增加獨居長者與他人的連結。
Elderly can use the app to consult doctors and receive injection reminders, while doctors can confirm and answer patient's questions online, increasing connections for solitary elderly.

入圍/Shortlisted

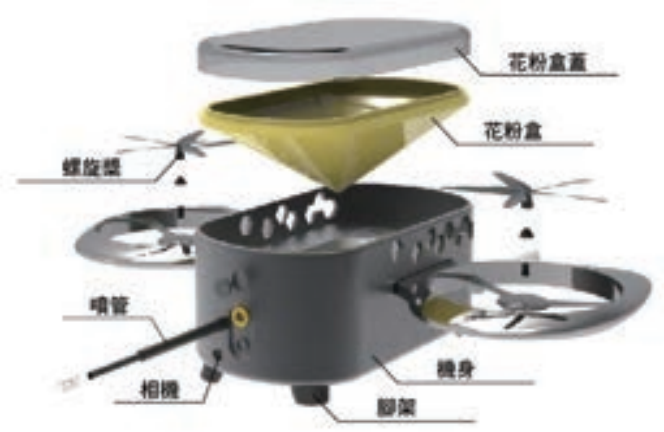
自動授粉無人機
Automatic pollination drone

作者creator:陳宣貽、余婕恩/CHEN,HSUAN-YI/YU,CHIEH-EN

在地球上超過三分之一的作物需要依靠昆蟲授粉，又以蜜蜂佔為多數,但近年來因地球環境問題導致蜜蜂大量銳減,大多數農民採用人工授粉的方式取代昆蟲授粉。我們就從人工授粉為切入點,製作一台自動授粉無人機,以無人機的形式,增加了人工智慧、定位系統及機械手臂的概念，並結合APP介面設計，讓使用者在操作上可以更好的監控每一台無人機的情況，不僅提高效率,也減少人力成本。

More than 30 percent of the crops on Earth depend on insect pollination,and bees are in the majority. However, in recent years, bee populations have fallen dramatically due to the earth's environmental problems. Most farmers use artificial pollination instead of insect pollination.

From the perspective of artificial pollination, we made an automatic pollination drone. In the form of automatic pollination drone, we added the concepts of artificial intelligence, positioning system and mechanical arm, and combined with APP, so that users can monitor the situation of each drones in operation better. By doing so, not only can it improves working efficiency, but also reduces labor costs.



1.無人機背面電池更換採用插入式設計

The drone battery adopts a plug-in design

讓使用者快速更換電池，使無人機不間斷進行下一趟授粉作業

The drone battery adopts a plug-in design for easy user replacement.

2.花粉瓶上蓋採用漏斗設計

The pollen bottle adopts a funnel-shaped design

方便花粉流入下方管子，上下拔蓋方便替換

To facilitate the flow of pollen into the tube, and the cap is pulled up and down for easy filling.

3.前後裝設相機

There are cameras in front and behind to detect flowers at different angles.

初審評審 Judges of campaign(Preliminary)

召集人

宋同正
國立臺灣科技大學設計系
特聘教授

SUNG,TUNG-JUNG
Department of Design, National Taiwan University of Science and Technology
Distinguished Professor

副召集人

張添晉
國立臺北科技大學環境工程與管理研究所
特聘教授

CHANG, TIEN-CHIN
Institute of Environmental Engineering and Management,
National Taipei University of Technology
Distinguished Professor

廖雙慶
教育部資訊及科技教育司
專門委員

LIAO,SHUANG-CHING
Department of Information and Technology Education,
Ministry of Education
Senior Specialist

林天賞
海洋委員會海洋保育署
主任秘書

LIN,TIAN-SHANG
Ocean Conservation Administration Ocean Affairs Council
Chief Secretary

鄭政利
國立臺灣科技大學建築系
教授

CHENG,CHENG-LI
Department of Architecture, National Taiwan University of
Science and Technology
Professor

范政揆
國立臺北科技大學工業設計系
副教授

FAN,CHENG-KUEI
Department of Industrial Design, National Taipei University of Technology
Associate Professor

林鑫保
台灣設計研究院
副院長

LIN,XIN-BAO
Taiwan Design Research Institute
Associate Dean

廖佳玲
北歐設計顧問有限公司
執行總監

LIAO,SHUANG-CHING
Scandinavian Designers
Executive Director

張景旭
國立雲林科技大學工業設計系
助理教授

CHANG,.CHING-HSU
Department of Industrial Design, National Yunlin University
of Science and Technology
Assistant Professor

丑宛茹
實踐大學工業產品設計系
副教授

CHOU,WAN-RU
Department of Industrial Design, Shih Chien University
Associate Professor

白子易
國立台中教育大學環境教育
及管理碩士班
教授

PAI,TZU-YI
Master Program of Environmental Education and Management,
National Taichung University of Education
Professor

張宇靖
德商搖籃到搖籃設計顧問有限公司
臺灣分公司經理

ZHANG,YU-JING
Environmental Protection Encouragement Agency
EPEA Taiwan Project Manager

陳冠中
國立屏東科技大學環境工程
與科學系
教授

CHEN,KUAN-CHUNG
Department of Environmental Science and Engineering,
National PingTung University of Science and Technology
Professor

程淑芬
朝陽科技大學環境工程與管理系
教授

CHENG,SHU-FEN
Department of Environmental Engineering and Management,
Chaoyan University of Technology
Professor

黃柏榮
國立中山大學環境工程研究所
助理教授

HUANG,PO-JUNG
Institute of Environmental Engineering,
National Sun Yat-sen Universtiy
Assistant Professor

Judges of campaign(Review/Final Review)複決審評審

召集人

宋同正
國立臺灣科技大學設計系
特聘教授

SUNG,TUNG-JUNG
Department of Design, National Taiwan University of Science and Technology
Distinguished Professor

副召集人

張添晉
國立臺北科技大學環境工程與管理研究所
特聘教授

CHANG,TIEN-CHIN
Institute of Environmental Engineering and Management,
National Taipei University of Technology
Distinguished Professor

林天賞
海洋委員會海洋保育署
主任秘書

LIN,TIAN-SHANG
Ocean Conservation Administration Ocean Affairs Council
Chief Secretary

高志明
國立中山大學環境工程研究所
講座教授

GAO,CHIH-MING
Institute of Environmental Engineering, National Sun Yat-sen Universtiy
Chair Professor

陳小玲
國科會自然科學及永續研究發展處
副處長

CHEN,SHOU-LING
Department of Natural Science and Sustainable Development
Deputy Director General

康世芳
淡江大學水資源及環境工程學系
教授

KANG,SHYH-FANG
Deparment of Water Resources and Environmental Engineering, Tamkang University
Professor

王千睿
國立臺灣師範大學設計學系
教授

WANG,CHIEN-JUI
Department of Design, National Taiwan Normal University
Professor

官政能
實踐大學工業設計系
教授

KUAN,CHENG-NENG
Department of Industrial Design, Shih Chien University
Professor

路威
北歐設計顧問有限公司
設計總監

Gideon Lowey
Scandinavian Designers
Design Director

「設計羅盤(design compass)」數位教材影片

How local solutions contribute to global challenges

快來一起用創意改變世界，用設計改變人類生命!!

環保署攜手丹麥商務辦事處，邀請丹麥The Index Project一同製作環境教育數位教材，歡迎各界自由觀看及學習。

教材內容從「設計羅盤(design compass)」使用方法介紹開始，並配合實際案例的對應說明，翻轉大眾對環境問題的看法與省思，感受用創意產出具體問題解方的快感。

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