Assistive tech, made *with* the people who use it.

SalvageGarden is a volunteer-led community makerspace in Singapore where persons with disabilities, caregivers, makers, designers and clinicians prototype assistive devices together — then share every design open-source, so anyone, anywhere, can make and adapt it.

Southeast Asia's first assistive technology makerspace, SalvageGarden began in 2018 as a volunteer interest group co-founded by Saad Chinoy and fellow volunteers. Its early home was Engineering Good, where volunteers refurbished donated laptops in a borrowed back room for Computers Against Covid. In 2022 it was incorporated as SalvageGarden Ltd., with the help of Leong Chia Jang (LJ). It remains a community initiative rather than a panel of experts: a diverse pool of volunteers, many of them experienced in making assistive devices, and an open invitation to join in.



A Sunday crew at MakeIT, Punggol Regional Library — caregivers, persons with disabilities, makers, techies, tinkerers and designers, with a freshly printed toddler mobility trainer. Photo: SalvageGarden.

100+
public participatory design sessions held

140+
open-source designs shared for anyone to make

40+
active volunteers running the sessions

The design count is a conservative estimate: many variations and iterations emerge along the way as part of co-creation and are not tracked separately. More than 65 volunteers have taken part since SalvageGarden began.

How we work

Three principles, one weekly habit: show up, listen, prototype together.

“Nothing about us, without us”

Persons with disabilities and their caregivers are not consulted at the end — they are active co-creators from the first sketch, working as equals alongside makers, designers and clinicians.

DIWO — Do It With Others

Collaboration over individual creation. The most useful devices come out of collective effort and shared learning, not isolated technical expertise.

People-first design

Needs and lived experience take precedence in every design decision. Assistive tech is designed *with* its end users, not *for* them — a direct challenge to the high cost and limited personalisation of conventional devices.

1

A person brings a need

It starts with a real problem from daily life — staying dry in the rain, lining up a key, holding a spoon — brought by the person who lives with it, or their caregiver.

2

Prototype together

At the weekly Sunday sessions, volunteers, makers, designers and clinicians build side by side with the person, using 3D printers and digital fabrication tools.

3

Test, break, improve

The device goes back to the person who needs it. If it takes too long to use, breaks, or doesn't fit their life, it gets reworked — the process matters as much as the product.

4

Share it open-source

Finished designs are published openly so anyone can make, adapt and pass them on. A solution built for one person in Punggol can be rebuilt anywhere in the world.

Make Inclusive Tech (MIT) Sundays

The flagship programme — free, weekly, and

Make Inclusive Tech (MIT) Sundays

The flagship programme — free, weekly, and open to walk-ins and wheel-ins alike.

Every Sunday, the MakeIT makerspaces in Singapore's regional libraries fill with persons with disabilities, caregivers and makers prototyping together. The sessions run in collaboration with **SG Enable's i'mable** programme, with hands-on 3D printing and digital fabrication — no experience needed, and no appointment either: walk in, or wheel in.

By October 2025 the Punggol sessions had passed **100 Sundays**. That same month, MIT Sundays expanded from the flagship Punggol space to four libraries island-wide.

When: Sundays, 12 noon – 2:30pm. Just turn up.

Punggol Regional Library	Level 4 · **flagship**
Jurong Regional Library	Level 2
Tampines Regional Library	Level 4
Woodlands Regional Library	Level 3

The story of 2026: a poncho that beat the rain

Co-created with design practice 55 Minutes — and recognised twice over.



An early rain-shield prototype on the workshop floor — the messy middle of the journey, February 2026. Photo: SalvageGarden.

Francis, a SalvageGarden volunteer, had spent months on a problem anyone who pushes a wheelchair in Singapore's rain will recognise: his mother, a stroke survivor, got soaked — because the person pushing the chair has no hand free for an umbrella. His first answer, in May 2025, was pure makerspace: a crutch, cable ties and clamps holding an

umbrella to the wheelchair.

Francis submitted the problem to **55 Minutes' Inclusive Inquiry**, and the work got serious. Six criteria were agreed — **safe, easy to use, adaptive, high coverage, affordable, locally available** — with safety non-negotiable, and a hard-won rule: anything taking more than 15 seconds to put on is effectively useless. Prototyping ran over two months at MakeIT @ Punggol, facilitated by Saad, through a rain-shield prototype tested in early 2026.

The finished poncho deploys in **under 30 seconds**: flexible self-expanding ribs inspired by stroller mosquito nets, magnetic closures, adjustable draw cords, breathable nylon rip-stop — and it packs away into a bag.

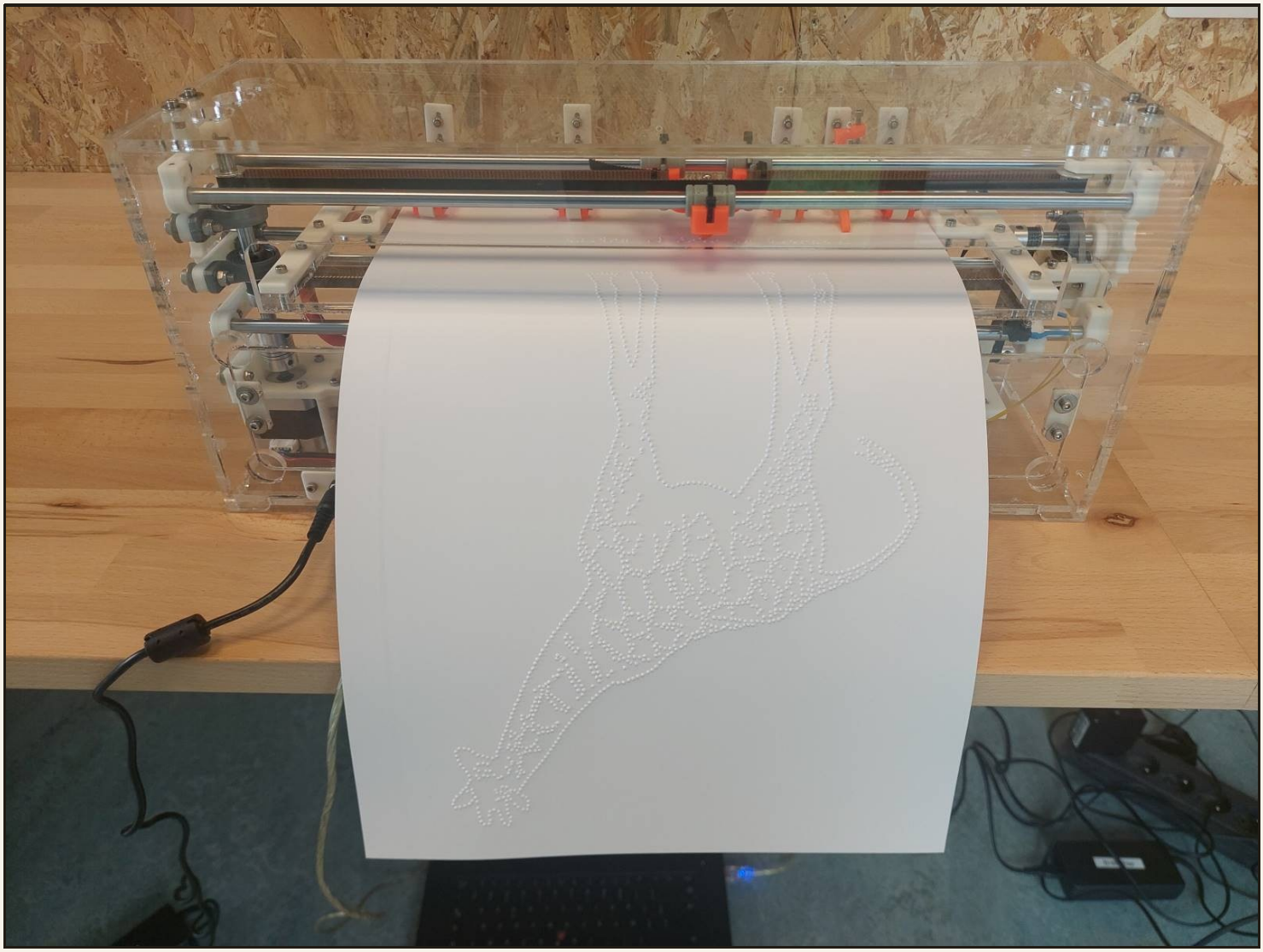
> **Human-Centered Design Award 2026** — 5th Asian Conference on Ergonomics & Design, Singapore, August 2026 (the award's inaugural year, organised by the Human Factors & Ergonomics Society of Singapore).
>
> **Red Dot Award: Design Concept 2026** — winners unveiled 15 October 2026.

Both awards went to the **55 Minutes team** — Wendy Wong, Adeline Kuswanto, Lynn Wee, Elena Lin, Pradnya Nirgun and Mai Tatoy — for a design **co-created with SalvageGarden volunteers and caregivers**. Co-designers: Francis, Brenda Boey, Carol Boey and Annie Ong.

Read the full story on the SalvageGarden blog · Business Times, 15 Oct 2026

More of the work

Devices, games and collaborations from the benches — each one started as somebody's everyday problem.



Open hardware · Singapore's first makerspace-assembled unit

BrailleRap

An open-source braille embosser built from a repurposed 3D printer — around **US$350 to build, against US$2,500+** for a commercial embosser. SalvageGarden assembled Singapore's first makerspace BrailleRap, and the design has since been replicated from Bhutan (at Fab23) to the Philippines, Germany and Cameroon. In 2025, Saad presented it at the Open Source Hardware Association summit in Edinburgh (“BrailleRap: re-making an open-source braille printer for meaningful engagement”) and ran a BrailleRap workshop at FOSSASIA Summit in Bangkok.



Mobility · Built at the Sunday sessions

Toddler Mobility Trainers

Small children who need wheeled mobility often wait longest for equipment that fits. By August 2026, SalvageGarden volunteers had 3D-printed **five fully functional Toddler Mobility Trainers for families**, with a sixth in progress —

each one sized, fitted and adjusted with the child and their caregivers in the room.

Toddler Mobility Trainers in Singapore

With SPD · Shaping Hearts 2026

A heart made of alphabet tiles

In January 2026, SalvageGarden joined forces with **SPD** for Shaping Hearts, Singapore's largest inclusive arts festival. The sixth edition, organised by North East CDC, took place at Punggol Digital District on 13 September 2026 under the theme “Step Into Our World”. Lead artist Mahyuddin Chan (Din) guided the creative process: **seven sets of 3D-printed hexagonal alphabet tiles** were made, and four went to SPD centres under the Enabling Skills for Life Programme — ESH Punggol, ESH Tampines, SPD@Tampines and SPD@Canberra. SPD's community decorated the tiles, which were arranged into a giant heart mural spelling “shaping hearts”. Deputy Prime Minister Gan Kim Yong visited the SalvageGarden booth and tried the assistive devices for himself.

SalvageGarden at Shaping Hearts 2026

With The Ascott Limited · Launched 17 Nov 2025

An assistive amenities toolkit for hotels

SalvageGarden co-developed an assistive amenities toolkit with **The Ascott Limited** — 3D-printed holders for cutlery, toothbrushes, combs and mugs, a toothpaste squeezer, and a tactile hotel map — launched as part of Ascott's Disability Inclusion Playbook (with Colorful Earth, supported by SG Enable). The toolkit is being **piloted at four Singapore properties**: Citadines Science Park, lyf Funan, Citadines Rochor and Oakwood Studios.

Ascott's Disability Inclusion Playbook announcement

An early chapter · Prix Ars Electronica 2022

Computers Against Covid

During the pandemic, volunteers “frankenstein-ed” working laptops from salvaged parts so people could learn and work from home — an Engineering Good project where many SalvageGarden volunteers first worked together. It received an **Honorary Mention in Digital Communities at Prix Ars Electronica 2022**.

Prix Ars Electronica 2022 catalogue (CyberArts 2022, p. 124)

Play, prosthetics & everyday independence

Games, hands and kitchen boards

Inclusive games — Match-4 (M4tch), a tactile Connect Four, and Tactile TicTacToe T3, SuperT3 and tactile Sudoku, designed for players of all abilities. **Prosthetic hands** — 3D-printed through the global e-NABLE network of some 40,000 volunteers in 100+ countries. **With MINDS** — 30 assistive chopping-board sets made for adults with intellectual disabilities. And in October 2026, a four-student SalvageGarden team built an odd-one-out game of shapes, sounds and textures at a Singtel inclusive hackathon.

On the blog · November 2026

Ten devices, ten stories

SalvageGarden's November 2026 blog series takes one device at a time as the way into one person's need: the Wheelchair Poncho, the Speak by Pointing keyboard, extendable cutlery, the Plug Hug, splints, the HoKey keyhole finder, an adjustable spoon, three small hacks from one session, BrailleRap, and a one-handed nail clipper. Start anywhere — each post names the problem, the iterations (failures included) and the people.

Read the series on the SalvageGarden blog

Timeline

Key milestones, from a volunteer interest group to an award-winning community.

2018

A volunteer interest group. SalvageGarden begins, co-founded by Saad Chinoy and a number of fellow volunteers.

2020

Make Inclusive Tech begins. The programme that becomes MIT Sundays dates to 2020; the Careables Moving Exhibition shows at Engineering Good in November.

2022

Formalised. SalvageGarden Ltd. is incorporated, with the help of Leong Chia Jang (LJ). Computers Against Covid receives its Prix Ars Electronica Honorary Mention.

2023

A weekly home. Make Inclusive Tech sessions settle into their weekly rhythm at MakeIT, Punggol Regional Library.

2025

Island-wide. MIT Sundays expand to four libraries under SG Enable's i'mable banner (October). The Ascott assistive amenities toolkit pilot launches (17 November). The Straits Times features the community (December).

2026

Awards and art. The Wheelchair Poncho co-created with 55 Minutes wins the Human-Centered Design Award (August) and a Red Dot Award: Design Concept (October). Shaping Hearts with SPD (September). Saad facilitates a DIY smartphone macro-lens session at GOSH 2026 in Kathmandu (October). A ten-part assistive-device blog series runs through November — with the Enabling Lives Festival and Maker Faire Shenzhen still to come.

Coming up

Two chances to see the devices — and the people who made them — in person.

28–29 November 2026 · Enabling Village, Singapore

Enabling Lives Festival 2026

SalvageGarden exhibits its “Cocreated 3D Printable Assistive Devices Showcase” in the i'mable Collective Space, Level 2, Vista, 10.00am–6.00pm. Free, and walk-ins are welcome.

Festival listing

12–13 December 2026 · Vanke Design Commune, Shenzhen

Maker Faire Shenzhen 2026

SalvageGarden exhibits at Maker Faire Shenzhen, with Saad Chinoy representing the team — open-source assistive devices from the Sunday sessions, on show in Nanshan.

Meet the Maker listing

Partners & collaborators

DIWO in practice — the organisations and networks SalvageGarden works with.

Government & statutory

National Library Board — MakeIT at Libraries, the Sunday venues

SG Enable's i'mable — MIT Sundays collaborator

IMDA Digital for Life — digital inclusion

Newer collaborations, 2025–26

55 Minutes — Inclusive Inquiry; the Wheelchair Poncho

SPD — Shaping Hearts 2026

The Ascott Limited — Disability Inclusion Playbook toolkit

MINDS — assistive chopping-board sets

North East CDC — organiser of Shaping Hearts

International networks

Careables — EU Horizon 2020 platform for open healthcare making

Global Innovation Gathering (GIG) — grassroots innovation network

Makers Making Change — makers matched with people who need devices

e-NABLE — global 3D-printed prosthetic hands network

BrailleRap community — the open-source embosser's makers

Singapore community, arts & education

Engineering Good — SalvageGarden's early home

Enabling Village — disability hub and showcase venue

lyf Funan — showcase venue; an Ascott property in the toolkit pilot

ArtScience Museum — outreach booth and talks, May 2025

Access Arts Hub — Saad is a consortium member; a wearable caption device for SRT's C-O-N-T-A-C-T was built at SalvageGarden

BuildingBloCS — student tech-for-good outreach

The people

SalvageGarden is collective work — the volunteers and co-creators *are* the organisation. **Saad Chinoy**, co-founder, is also “Chief Geek” at SpudnikLab; he served on the Global Innovation Gathering's Supervisory Board from 2023 to 2025 and remains a consulting member of GIG in an advisory role. **Leong Chia Jang (LJ)** helped formalise SalvageGarden as a company in 2022.

Join a Sunday

Persons with disabilities and caregivers are invited to bring a problem; makers are invited to bring their hands. Sessions are free, weekly, and hands-on — the fastest way to understand SalvageGarden is to build something at one. Details and the latest stories are on salvage.garden.

SalvageGarden Ltd. · UEN 202206828D · A volunteer-led community initiative, Singapore. Last updated November 2026.

Further reading:

salvage.gardenThe Wheelchair Poncho storyShaping Hearts 2026Toddler Mobility TrainersThe blog seriesBusiness Times — Red Dot coverage

Ascott Playbook announcementPrix Ars Electronica 2022 catalogueEnabling Lives FestivalMaker Faire Shenzhen

Photos: SalvageGarden (hero, rain-shield prototype, toddler trainer); BrailleRap photo via the BrailleRap project on Hackaday.io.