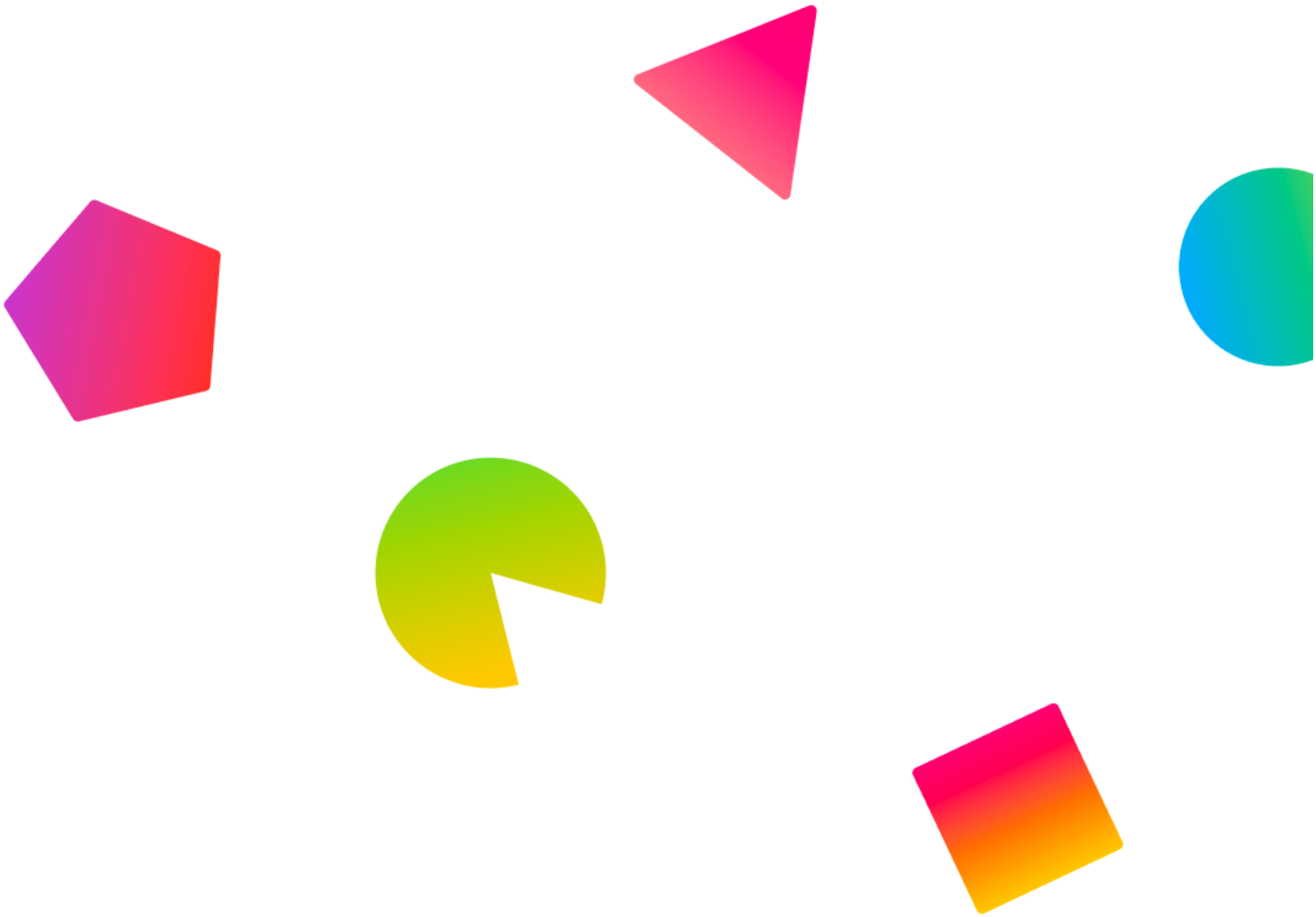
STEAM UNITY

Design for Community



# Opportunities in the community

# Sustainability

# Encouraging Energy-Efficient Practices at Home

South West CDC +
Housing & Development Board (HDB)

**Context**
In Singapore's hot and humid climate, air conditioning is commonly used to stay comfortable, but it leads to high energy consumption and contributes to carbon emissions. While alternative strategies—such as improving natural ventilation, reducing indoor clutter, and optimizing airflow—can enhance comfort and lower energy use, these methods are not widely adopted. Some residents may be unaware of their benefits, while others may find them inconvenient or ineffective in their living spaces.

Beyond individual habits, factors such as home layout, existing infrastructure, and community norms can influence whether residents embrace energy-efficient practices. Encouraging long-term behavior change requires solutions that are easy to implement, clearly beneficial, and aligned with people's daily routines.

To address this, solutions can focus on understanding how home design, airflow, and temperature affect indoor comfort in different housing types, as well as investigating barriers to adopting energy-efficient practices and finding ways to address them, such as overcoming misconceptions or inconvenience. Additionally, designing tools, incentives, or educational methods can make it easier for residents to understand and apply these practices. Experimenting with ways to track and visualize improvements in comfort and energy savings can also help make the benefits tangible for residents.By targeting specific areas within this challenge, practical, science-driven solutions can be developed to help shift behaviors and create a lasting impact.

**Opportunity:**

How might we encourage and support Singapore residents in adopting everyday habits that improve indoor comfort while reducing energy consumption?

# Cultivating Water-Saving Habits in Homes and Communities


Amazon Web Services (AWS - Water Infrastructure Team)

**Context**

In Singapore, the average water consumption is 142 litres per person per day. The national target is to lower this to 130 litres per person per day by 2030. Most household water use comes from daily activities such as showering, toilet flushing, kitchen tasks, and laundry.

Beyond homes, community spaces like hawker centres, schools, and shopping malls also account for significant water use. While national awareness campaigns and policies are in place, changing everyday habits remains one of the most persistent challenges.

Adopting small, consistent water-saving behaviours—like shorter showers, full-load laundry, or mindful dishwashing—can make a measurable impact. There is an opportunity to develop creative, community-driven solutions that encourage sustained behaviour change and contribute to Singapore's water sustainability goals.

**Opportunity**

How might we design a product, service, or system (PSS) that helps people build better water-saving habits at home or in shared community spaces?

# Creating Sensory-Friendly, Sustainable Classrooms


APSN Katong School
**900 New Upper Changi Rd, Singapore 467354**

**Context**
Students of APSN Katong School experience discomfort due to rising classroom temperatures, particularly in late mornings and early afternoons. Sensory sensitivities—especially among students with autism spectrum disorder (ASD) —make maintaining a conducive learning environment critical for concentration and engagement. A hot and humid environment can lead to restlessness, difficulty focusing, and physical discomfort, all of which impact the overall learning experience.

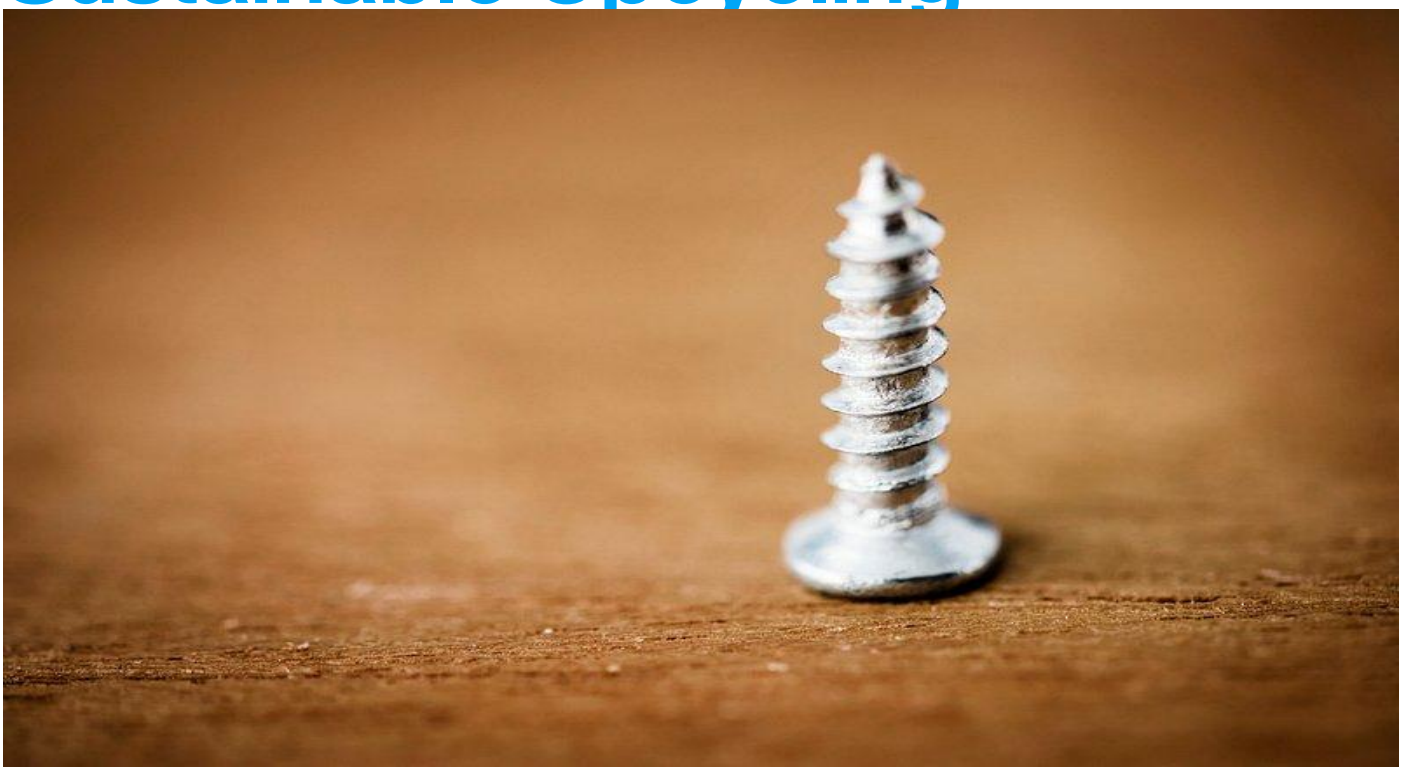
While air-conditioning might seem like an easy solution, schools must balance long-term sustainability, energy efficiency, and cost-effectiveness when addressing climate control. This presents an opportunity to explore innovative and sustainable solutions that can enhance classroom comfort without over-relying on air-conditioning.

Beyond cooling, solutions must actively support student well-being, ensuring that temperature control strategies promote focus, sensory regulation, and an optimal learning atmosphere.

**Opportunity**

How might APSN Katong School develop sustainable, cost-effective cooling solutions that create a comfortable, sensory-friendly learning environment for students with mild intellectual disabilities (MID) or comorbidity of MID and ASD, ensuring consistent temperature regulation that supports focus, well-being, and engagement—without relying solely on air-conditioning?

# Streamlining Screw Sorting for Sustainable Upcycling



Ground-Up Initiative (GUI)

**Context**

Ground-Up Initiative (GUI) is a community-based social enterprise dedicated to promoting sustainable living through hands-on learning, woodworking, and upcycling. A core component of their workshop activities involves using screws to transform salvaged wood into functional, repurposed products.

Currently, GUI's carpenters and volunteers work with over 15 different types of screws, but the existing sorting and storage system is largely user-dependent. Although basic sorting containers exist, screws are often returned to the wrong boxes or mixed together out of convenience. There is also no systematic way to track stock levels or identify which types are running low. As a result, used and new screws are frequently mixed, making it difficult to locate the right sizes, and leading to wasteful discards of perfectly usable materials. At present, 30–50kg of mixed screws are sitting unsorted in storage, waiting to be manually separated. This inefficiency reduces productivity and contradicts GUI's values of resourcefulness and mindful material use.

A low-cost, user-friendly, and sustainable solution would help reduce waste, improve workflow, and support GUI's educational mission. In terms of scalability, this could also benefit fabrication labs, furniture makers, DIY hobbyists, and even construction or industry players, encouraging a broader culture of reuse, repair, and circular design thinking.

**Opportunity**

How might we design an inclusive, low-cost, and sustainable product, service, or system that enables users to efficiently sort, monitor, and manage mixed screw inventories?

# Safety & Accessibility

Statement 5: Safety & Accessibility

# Visitor Awareness for Elderly with Hearing Impairments

**Chinatown Active Ageing Centre**
8 Jalan Kukoh

CHINATOWN Active Ageing Centre 牛车水活跃乐龄中心

**Context**
Elderly individuals who are hard of hearing face a significant challenge in being unaware if someone is knocking at their door. This lack of auditory awareness can lead to missed visitors or important deliveries, causing frustration, and potentially compromising their safety (e.g. during fire evacuation) and well-being.

**Opportunity**
**How might we create a comprehensive and cost-effective solution that alerts hard-of-hearing elderly to visitors at their door and during emergencies?**

Statement 6: Safety & Accessibility

# Maximising Mobility Aid Storage in Dialysis Centres


National Kidney Foundation (NKF)

## Context

The National Kidney Foundation (NKF) operates 43 dialysis centres across Singapore, serving over 6,000 kidney failure patients, with approximately 34% requiring mobility assistance. At larger centres, 35-40 patients receive treatment per shift, but as the number of patients needing wheelchairs and Personal Mobility Devices (PMDs) increases, the current 6m$^2$ storage space for mobility aids may become insufficient. This could lead to overcrowding, accessibility challenges, unavailable storage, and safety hazards, affecting both patients and dialysis nurses. Finding an effective way to optimise space while ensuring compliance with safety regulations is crucial to maintaining a safe environment for both patients and dialysis nurses.

## Opportunity

**How might we design innovative, space-saving solutions to optimise the 6m$^2$ storage area outside of NKF dialysis centres to safely store more mobility aids, ease the workflow for dialysis nurses and ensure a safer environment for patients?**

# Quality of Life

# Reimagining Community Events for Seamless Engagement


**People's Association**
**West Coast GRC**
**(Boon Lay CC)**

SOUTH WEST COMMUNITY DEVELOPMENT COUNCIL

People's Association

## Context

The Boon Lay Community Club (CC) under the People's Association (PA), is a key neighbourhood hub where residents gather for festive celebrations, carnivals, workshops, and community programmes. These events aim to foster strong social bonds and a sense of belonging across diverse age groups and backgrounds. However, several engagement challenges affect how these events are currently run:

- **Fragmented user experience during events**: Physical game cards and redemption slips are printed for each event to encourage residents to explore the various engagement booths. This is time-consuming, labour-intensive, and unsustainable over repeated use. Moreover, while participants stay longer to visit the engagement booths, the existing mechanisms do not encourage interactions among participants at the events.
- **Duplication checks**: Current system is unable to allow live checks during events for duplication of households to redeem items such as goodie bags or welfare packs.
- **Scattered communication**: Event information is spread across multiple channels—from traditional methods like flyers, banners, and lift lobby noticeboards to digital platforms like WhatsApp communities, Instagram, and Facebook. Registration, feedback, and enquiries often occur separately on different websites or forms, leading to a disconnected user journey.

These issues limit not only the efficiency of event management but also the depth of community engagement, particularly opportunities for intergenerational connection and spontaneous social interaction. There is an opportunity to design an integrated, accessible, and low-barrier solution that improves the resident experience at the events. Such a solution could include:

- Redemption of event perks such as carnival game cards (for events with activity stations) and goody bags through gamification
- Live system to check for duplication of residents and/or households for redemption of items
- Centralised communication for event updates, announcements, and resident interaction
- Convenient feedback or suggestion channels that can be easily sorted and addressed by organisers

The solution should be inclusive and user-friendly, designed for easy adoption by the majority of residents. Ultimately, it should strengthen community bonds by lowering barriers to interactions across age groups, and between residents and the Community Club, while encouraging greater participation from both seniors and youths.

## Opportunity

**How might we design meaningful games and activities with seniors and their caregivers that promote inclusion, reduce isolation, and support their motor, cognitive, and social abilities?**

# Elderly Care

# Designing Inclusive Play for Seniors and Caregivers

**Engineering Good**
**41 Jln Pemimpin, #03-06A Kong Beng Industrial Building**

## Context

By 2026, Singapore will become a super-aged society, and by 2030, 1 in 4 Singaporeans will be aged 65 or older. We would like to play a part in co-creating a caring and inclusive society for our elderly through our Games for Good initiative.

Seniors at Active Ageing Centres (AACs) and nursing homes often lack access to meaningful activities tailored to their motor, cognitive, and social abilities—leading to isolation, sedentary lifestyles, and a decline in physical and mental well-being.

Caregivers and support staff frequently report insufficient tools, resources, knowledge, and creative frameworks to design personalized, fun, and engaging experiences for those they care for. This can lead to frustration, burnout, and missed opportunities to strengthen social bonds and holistic care.

Games for Good is an initiative to change this. By bringing seniors and their caregivers together to co-create games and activities, we can:

- Enhance well-being
- Reduce isolation
- Foster inclusion
- Encourage creativity
- Build stronger communities

Students are encouraged to explore designing activities that aren't just fun—they help everyone feel valued, connected, and understood. By working together to create engaging experiences, we can shift mindsets, support one another, and build a more inclusive and caring Singapore. Solutions should encourage creativity, strengthen community bonds, and be practical for centre staff and caregivers to implement.

## Opportunity

**How might we design meaningful games and activities with seniors and their caregivers that promote inclusion, reduce isolation, and support their motor, cognitive, and social abilities?**

# Supporting Independent Elderly Care Between Check-Ins


**Montfort Care**
**624 Upper Bukit Timah Rd, Singapore 678212**

MontfortCare

## Context

Montfort Care Community Resource, Engagement, & Support Team (CREST) supports over 300 community-based clients, many of whom are elderly individuals with chronic illnesses, mental health needs, or mild cognitive conditions such as depression, dementia, or mild cognitive impairment (MCI). These clients are typically referred through hospitals, community organisations such as the People's Association (PA), or via self-referral.

Each staff member manages a caseload of approximately 80–90 clients, and regular check-ins—often through home visits—form a core part of Montfort's current operations. However, these visits can be resource-intensive, especially when clients are not home, or when appointments clash. The organisation hopes to reduce reliance on in-person visits by shifting towards a model where these are reserved for more serious or urgent concerns.

Between visits, clients are expected to follow individual care agreements, which may include taking prescribed psychiatric medications and completing specific home-based tasks—such as physical exercises or cognitive activities (e.g., puzzles). However, challenges arise in supporting clients between appointments, which are typically spaced about a month apart.

Key issues include:

- **Medication and appointments:** Clients often have complex medication schedules, with different drugs taken at different times of day. While tech-savvy individuals might use digital calendars or alarms, many of Montfort's elderly clients are unfamiliar with such tools. Some rely on manual systems, like whiteboards with symbols, to remember their medication and appointments.
- **Tracking home-based activities:** Clients are prescribed physical or cognitive activities to improve their wellbeing, but Montfort currently lacks a formal way to track whether these are done—or done correctly. Most updates rely on verbal feedback, which may not accurately reflect actual participation or effectiveness.
- **Monitoring and engagement:** A more streamlined and scalable system for check-ins and monitoring would benefit both clients and staff. This is especially relevant for individuals who would benefit from more frequent but lighter-touch engagement between formal check-ins.

## Opportunity

**How might we support elderly clients in managing their health routines and staying engaged between check-ins, while helping care staff monitor their progress more effectively?**

# Let’s Design for Community!