

**STEAM** UNITY

Design for Community



# Opportunities in the community

# Sustainability

# Alternatives to Plastic Bags



**Hao Ren Hao Shi Ltd.**

Mobile Charity: Blk 492E/492F Tampines Avenue 5

Alternative Site: Block 159, Lorong 1, Toa Payoh, SG 310159



## Context

Whether from the supermarket or at volunteer drives, there is a heavy reliance on the use of plastic bags to hold grocery items. Although alternatives such as paper bags and recyclable bags exist, plastic bags are highly preferred due to its low cost, water resistance, strength, and convenience. Many users also reuse them as trash bags for their own homes. The one-time use of such plastics however is not environmentally sustainable.

## Opportunity

**How might we create solution for grocery shoppers that reduce or eliminate the of use of plastic bags so that can still transport goods in a convenient, environmentally friendly, and cost-effective manner?**

# From Manure to Fertiliser



**Gallop Stable**  
61 Pasir Ris Green



## Context

Horse manure is an excellent natural fertiliser because they're packed with nutrients like nitrates, which plants need to grow well. Unlike artificial fertilisers, they don't contain any harmful chemicals, making them a safe and eco-friendly choice for improving soil quality and helping plants thrive. This is because horses are picky eaters—they only eat the best grass and drink clean water, which makes their manure super nutritious. But even though horse manure works so well, we're not using them as much as we could. Right now, only a small part—about 20%—of horse manure is being used as fertilisers. This means there's a lot of potential to use them more widely, beyond just on horse farms.

## Opportunity

**How might we innovate the processing and distribution of horse manure as fertilisers to maximise their effectiveness for soil enrichment and plant health, while overcoming challenges related to scalability, odour, and ease of use, for widespread adoption in landscaping beyond the farm?**

# Empowerment Through Sustainable Farm-to-table



**Metta Welfare Association**  
32 Simei Street 1



## Context

Metta Care was established in 2014 to provide F&B vocational training for Metta School graduates, with mild intellectual disability and/or autism. Metta Care's mission is to provide an avenue for these youths to acquire vocational work and life skills through our comprehensive training and development programmes and to create employment opportunities to help them achieve economic independence and self-reliance.

Metta Café serves healthy and delicious vegetarian meals prepared by chefs and apprentices and is open to the public. To diversify the café's vegetables supply and empower apprentices to learn to grow and harvest their own vegetables, Metta Café set up a rooftop garden earlier this year. However, due to environmental factors such as heat and insufficient knowledge about gardening, they were not able to grow many vegetables from their soil-based garden.

## Opportunity

**How might we equip the apprentices at Metta Café with the knowledge and tools necessary to successfully grow and harvest their own vegetables with a sustainable process?**

# Sustainable Practices for Burning Offerings



Ministry of Culture, Community and Youth



## Context

The burning of offerings is a common practice, especially during festivals and important ceremonies to honor ancestors, seek blessings, and express gratitude.

However, concerns have arisen regarding the environmental impact and public safety risks associated with burning offerings, particularly when done illegally at void decks without adherence to regulations. In Singapore's diverse society, it's crucial to respect these cultural practices while addressing valid concerns.

## Opportunity

**How might we redesign incense burners or canisters to minimize environmental impact and safety risks associated with burning offerings at void decks, ensuring compliance with regulations while respecting cultural traditions?**

# Safety & Accessibility

## Statement 5 : Safety & Accessibility

# Bicycle-sharing Parking Hazard



**Anywheel Pte. Ltd.**  
Tampines East MRT station

**anywheel**

### **Context**

LTA has assigned designated yellow box parking spaces and bicycle racks for bicycle-sharing riders. However, when returning their bicycles, riders either park their bicycles illegally or park them haphazardly around the yellow box. This impedes accessibility of walkways, compromising the safety of pedestrians, children, wheelchair users and persons with disabilities, alike.

Similarly, some riders also bring these bicycles up to their apartments for their frequent use. They are parked illegally along corridors and even fire-escape staircases. This compromises safety and limits the number of bikes available to the public.

### **Opportunity**

**How might we design a solution for Anywheel cyclists to ensure that they return their rented bicycles to designated parking spots so that it will uphold the safety and accessibility of all pedestrians and public members?**



# Enhancing Safety at Zebra Crossings



SUTD, Office of Campus Infrastructure and Facilities (OCIF)  
8 Somapah Rd



## Context

There has been a concerning increase in incidents where vehicles fail to stop at zebra crossings, resulting in near misses or accidents involving pedestrians. One contributing factor to these incidents is often driver distraction or a lack of awareness regarding pedestrians crossing the zebra crossing. This poses a significant risk to pedestrian safety, as drivers may not realize the presence of pedestrians until it's too late to avoid a collision. While zebra crossings are meant to provide a safe passage for pedestrians, the lack of adherence by some drivers undermines this purpose, leading to potentially life-threatening situations.

## Opportunity

**How might we enhance the safety of zebra crossings for both pedestrians and drivers to reduce the risk of accidents?**

# Pedestrian Safety for Visually Impaired



**Singapore Association of the Visually Handicapped (SAVH)**  
47 Toa Payoh Rise, Singapore 298104



## Context

Navigational ground tactiles serve as crucial aids for visually impaired individuals, facilitating safe traversal of sidewalks by alerting them to potential hazards. However, while indispensable for the blind, these tactile markers can inadvertently create challenges for wheelchair users and pedestrians, particularly in rainy weather conditions when these tactiles become slippery and pose tripping hazards.

There is a pressing need to devise an innovative solution that ensures the safety of visually impaired commuters while mitigating obstacles and hazards for wheelchair users and pedestrians, especially during inclement weather.

## Opportunity

**How might we design an effective pedestrian signalling system that balances the needs of both visually impaired individuals and wheelchair users, enhancing accessibility and safety for all?**

# User Safety for Online Platform



Cyber Youth Singapore



## Context

In today's digital age, technology is deeply ingrained in the lives of many, particularly among the younger generation who rely heavily on various online platforms for communication, entertainment, and information. However, alongside the benefits of technology come significant concerns regarding user safety, including cyberbullying, scams, addiction, and other online hazards. Despite the increasing complexity of online platforms, the issue of user safety, especially in the context of cyberbullying, persists as a pressing concern. The challenge lies not only in implementing protective measures against cyberbullying and enhancing support for its victims but also in improving the overall user experience to mitigate issues like doom scrolling and addiction.

## Opportunity

**How might we address online safety concerns to foster a safer and more supportive digital environment for users?**

# Thermal Comfort for all in Hospitals



Healthcare Living Lab



## Context

Singapore's hot and humid climate makes it difficult for hospitals to maintain an optimal thermal comfort for patients. While air conditioning is commonly used to cool hospital environments, it results in high energy consumption, increased costs, and a significant carbon footprint. There is a need for innovative and sustainable solutions that can enhance thermal comfort without relying solely on air-conditioning. These solutions should prioritize energy efficiency, cost-effectiveness, and feasibility while also enhancing patient well-being. Moreover, considering the heightened risk of airborne transmission of diseases like COVID-19 in enclosed spaces underscores the importance of implementing strategies that ensure adequate ventilation and airflow to safeguard patient health.

## Opportunity

**How might we innovate to increase thermal comfort in Singapore's hospitals without relying on air conditioning, using sustainable solutions that consider energy efficiency, cost, feasibility, and enhance the well-being of patients?**

# Quality of Life

# Engaging People who are Bedridden



**Methodist Welfare Service**  
470 Tampines Street 44



## **Context**

Residents in nursing homes who are bedbound often struggle to engage in community activities, leading to feelings of isolation and inactivity. This lack of engagement can negatively impact their cognitive stimulation and social interaction, essential components of their overall well-being. Therapists and volunteers aim to address this issue by providing bedside activities that can stimulate the mind and foster connections with the environment and other people.

These activities need to be easily accessible, varied to suit individual preferences, and tailored to the specific needs of seniors, including those with limited strength or poor vision. The challenge lies in developing a cost-effective, practical, and hygienic method to deliver these activities, ensuring they are durable and easy to handle for both the seniors and the caregivers.

## **Opportunity**

**How might we design an accessible solution that provides cognitive stimulation and social engagement for bed-bound seniors in nursing homes, ensuring it is low-cost, easy to disinfect, durable, detachable, and accessible for those with limited strength or poor vision?**

# Museum Experience for people with Visual Impairments



**Children's Museum Singapore**  
23B Coleman Street Singapore 179807



## Context

In a visually immersive museum environment, individuals who are blind or visually impaired encounter significant obstacles in navigating the space and fully engaging with the artworks and exhibits. In a bid for greater inclusivity, the museum would like current programmes and exhibitions to have greater accessibility for children with visual impairments, allowing them to enjoy a meaningful and enriching museum experience. Practical concerns such as cost, durability, and ease of implementation should be considered.

## Opportunity

**How might we enhance accessibility in our museums to ensure that children with visual impairments can fully participate and appreciate the exhibits, while also addressing logistical challenges associated with implementation?**

# Elderly Care



# Visitor Awareness for Elderly with Hearing Impairments



**Chinatown Active Ageing Centre**  
8 Jalan Kukoh



## 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?**

# Enhancing Air Quality in Senior Apartments



**Sacred Grace Social Services**  
117 Bukit Merah View



## Context

For many seniors living in apartments, there is a strong reluctance to open windows and ventilate the space due to fear of rainwater entering their homes. This reluctance seems to stem from concerns about rheumatism and 'wind'. As a result, the air becomes stale, and odours start to develop.

This issue extends beyond mere odours. It delves into broader considerations such as air quality, ventilation, and mindset. The challenge lies in designing a solution that effectively addresses these concerns, allowing for proper ventilation without the fear of rainwater entering the house. The aim is to enhance seniors' living environments, promoting their comfort and well-being.

## Opportunity

**How might we develop a holistic solution that addresses the reluctance of seniors to ventilate their homes due to current fears and habits, while also considering broader factors such as air quality, ventilation, and mindset?**

# Boosting Resident Participation in Active Aging Centre



St. Luke's Eldercare, Active Aging Centre  
Tampines



## Context

Encouraging more male seniors to participate in activities at St Luke's Active Aging Centres is a significant challenge. Only around 10% of participants over 60 years old are male. The main issue is motivating them to join activities that stimulate their minds and protect their mental health. Many prefer to spend their leisure time at coffee shops or watching TV at home.

To address this, we need innovative strategies that attract male seniors and reduce the stigma associated with these programs. By engaging them in activities that promote mental agility and well-being, we can enrich their lives and help them feel a stronger sense of community.

## Opportunity

**How might we create an inclusive and engaging environment at our Active Ageing Centres that resonates with seniors, especially the men, encouraging them to participate in activities that promote mental stimulation and well-being, and fostering a greater sense of community and belonging?**

# Let's Design for Community!