Our Melbourne
Our Responsibility

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Acknowledgement of Country

Overview

Our Melbourne, Our Vision for a sustainable 2030

SUSTAINABLE DEVELOPMENT GOALS — 17 GOALS TO TRANSFORM OUR WORLD

1 Goal

- Create a Circular Economy

- Accessible, Convenient & Sustainable Communities

2 Challenges for Melbourne

- Unsustainable Incentives

- Risks & Dangers in Commuting

- Creating a Community

- Urban Sprawl

- Wastage

3 Potential

- Synergies with Charities and Organizations

- Safer & Sustainable Commutes

- Less Wastage, More Growth

4 Current Situation

- Diversity

- Infrastructure & Communities

- Outlook

Melbourne 2023

Population of 5.235 million

Overview

- Melbourne is one of the most culturally diverse cities in the world, with around 140 cultures represented.

- Over 191 Charities operating in Melbourne

Mobility

- A comprehensive public transport system enables efficient personal mobility in and around the city.

- Road congestion costs amount to around *$4.6 billion per year*, forecasted to grow to *$10 billion by 2030*

Wastage

- In 2020 Victoria **wasted 2.4 million tonnes of food**, 25% of Australia's food waste

- 1/3 of food produced for consumption contributes to wastage

Outlook

- Steepest population growth projection in Australia bringing forecasted population to over 6 million by 2030 and overtake Sydney in largest population in Australia

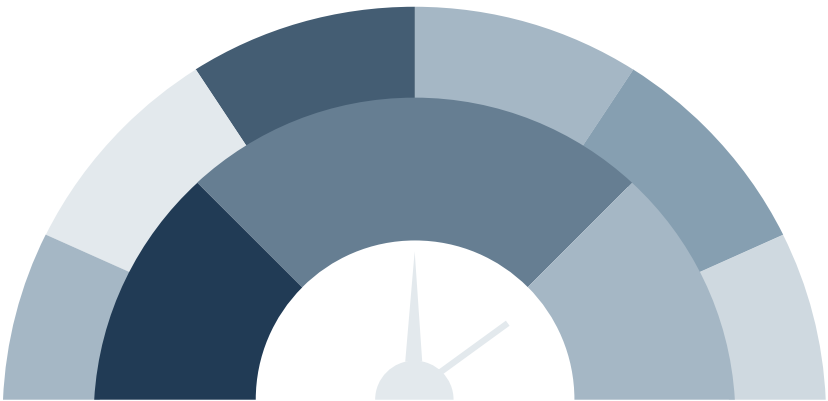**Public Transport Systems in Melbourne**

Mobility

Vehicle emission causing over 11,000 premature deaths in Australia per year, 66,000 active asthma cases, 12,210 cardiovascular hospitalization, 6,840 respiratory hospitalisations

- CityLink Motorway and West gate Bridge has an average of 550,000 cars driving on it every day

- In 2021, if you exclude those who worked from home, over 77% of people drove to work and under 9% caught public transport

- **_Road congestion costs $4.6 billion_** _per year_

- Public Transport has good coverage in the CBD but requires improvement in the suburbs

Why do Melbournians Drive?

- 12-month parking permit for residents cost $47 for the first car & $137 for the second

- Myki costs $10 for Full fare per day – amounts to $2,400 for an employee commuting 5 days a week for 48 weeks

- Yearly parking rental can range from $3,000-4,800 per year – greater convenience for marginally higher cost

- Bike lanes are nonexistent or between parked and driving cars posing danger to commuters

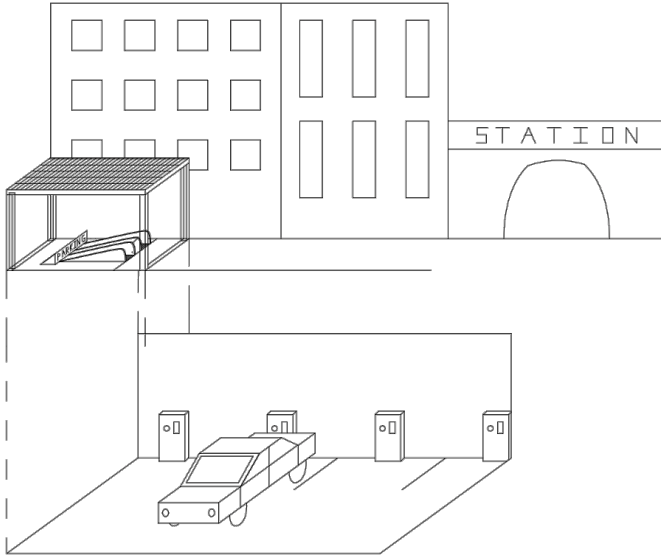| **3 GOOD HEALTH AND WELL-BEING**	**7 AFFORDABLE AND CLEAN ENERGY**	**10 REDUCED INEQUALITIES**	**12 RESPONSIBLE CONSUMPTION AND PRODUCTION**	**13 CLIMATE ACTION**
Various health conditions cause by vehicle emissions	1012 thousand barrels of oil consumed in Australia per day	Australia government provided $11.1bn tax breaks assist fossil fuels FY23	Wasted energy in traffic congestion	Unnecessary time spent in traffic contributing to pollutants

Sustainable Mobility

Public & Private Mobility

Multi-level Parking

STATION

Restructuring of Roads in the City

- Remove on-street parking to *reduce unnecessary congestion*

- Alter on-street parking space to bikes paths to *promote sustainable commuting & healthy, active lifestyles whilst increasing safety for bikers*

- Limiting cars allowed in the city to delivery vans, emergency vehicles, disadvantaged individuals and Uber & Taxi drivers to *improve air quality & reduce emissions*

Alter Parking Permits

- Multi-level car parking with *solar roofing* should be built near suburban train stations, within a 15-minute public transport commute from residents in the city & permits granted for the car parking

- *EV chargers* charged by the *solar roofing* within the car parks supply charge whilst parked

Public Transport Incentive

- Government can repurpose their budget to subsidise public transport rather than fossil fuels

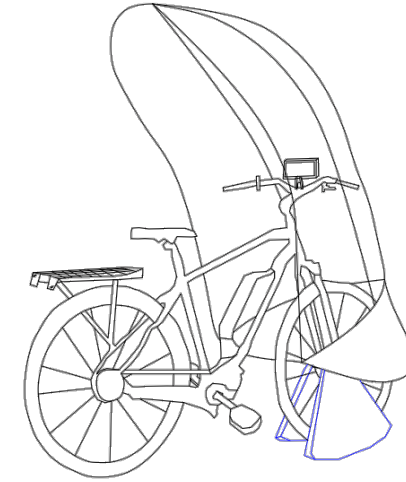| 3 GOOD HEALTH AND WELL-BEING	7 AFFORDABLE AND CLEAN ENERGY	10 REDUCED INEQUALITIES	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	13 CLIMATE ACTION
Increases access to bike paths & improves quality of air	EV cars charged whilst parked during the day with solar charging	Clean energy & environment accessible to all, cater to all people with special needs to still access the city	Ensures that only transport reasonably required to enter city is permitted, responsible consumption of energy	Reduce air pollutants

Sustainable Mobility cont..

Public Mobility

Features: Solar Powered Bikes

- Automatic wind / shield cover *protects users* from all weather conditions

- GPS display set through the user app *improves safety* as users can navigate to their destination without pulling out their phones

- Automated indicators connected to GPS ensures *road safety* as other vehicles and pedestrians are aware of the bikes change in direction

- Solar panels charge the bike *harnessing power from the sun* and reduces emissions from replacing batteries in our current electric scooters

- Solar powered bike works like an electric bike, enabling user to *exercise & improve fitness* whilst also *catering* for those who *are unable to bike longer distances* through semi-automation

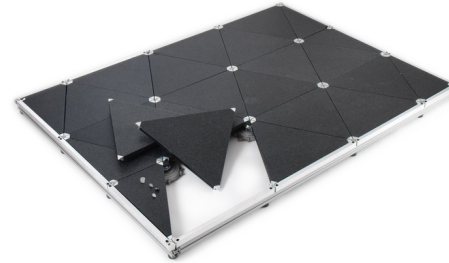| 3 GOOD HEALTH AND WELL-BEING	7 AFFORDABLE AND CLEAN ENERGY	10 REDUCED INEQUALITIES	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	13 CLIMATE ACTION
Promotes exercise tackling obesity in Australia (2/3 overweight) Reduces pollutants	Accessible & Convenient form of mobility operating purely from 100% clean energy	Low priced form of transport, anyone with a phone can access, caters to all fitness levels	Energy is not wasted in storage energy like electric scooters & no combustion of fossil fuels, responsibility harnessing power of the sun	Clean energy reduces greenhouse gases released in the air

Sustainable Mobility cont..

Private Mobility

Kinetic Tiles

At peak times 4-6pm, pedestrian counts reach around 55,000 around Melbourne city, kinetic energy from strolling can be converted to electrical energy to community centers
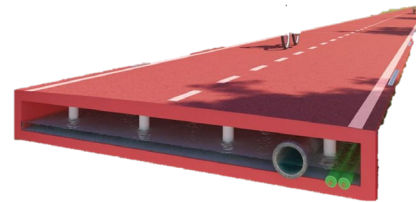
Features

- Kinetic floor tiles transport vertical movement of footstep to rotating movement to drive generator and energy output – Can be used to *power community centers*

- Consist *of fully recyclable materials*, glass, steel, recycled plastic & electronics

- Utilises otherwise wasted power to increase energy

Kinetic Tiles

Recycled Bike Paths

"Roads are **built for people not cars"**

Features: Recycled Bike Paths

- Promotes *active lifestyle* through safe & separate paths for people and bikes

- Paths composed of *100% recycled plastic*

- 'Plastic proven to *be extremely durable material* for infrastructure…compared to asphalt, recycled plastic roads are expected *to last 2-3 times* longer' (**Ernet Packaging**)

- Lighter *reduces CO2 emission* during material *transit*

- Hollow enables *house pipes & cables* run beneath & *store excessive rainwater*

3 GOOD HEALTH AND WELL-BEING	7 AFFORDABLE AND CLEAN ENERGY	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	13 CLIMATE ACTION
Energy generation through walking generates satisfaction	Harnesses a clean and otherwise wasted energy	Innovative infrastructure to promote a circular economy	Australia government provided $11.1bn tax breaks to assist fossil fuels FY23	Australia government provided $11.1bn tax breaks to assist fossil fuels FY23

Sustainable Mobility cont..

Link Between Private & Public Mobility

Energy Generating Turnstile

Free energy for public use powered by turnstiles in PTV terminals, schools and stadiums. Further *harnessing wasted energy* in high traffic areas.

Features

- Generates energy with each pass

- Similar design & mechanics as wind turbines and mechanical watches

Case Study

- a prototype installed in subway station in heart of Paris generated more than 2200 watts per day. Deployed across Paris, Turnstile Turbine generate energy to power an entire line saving *30,000 tons of CO2 per year*

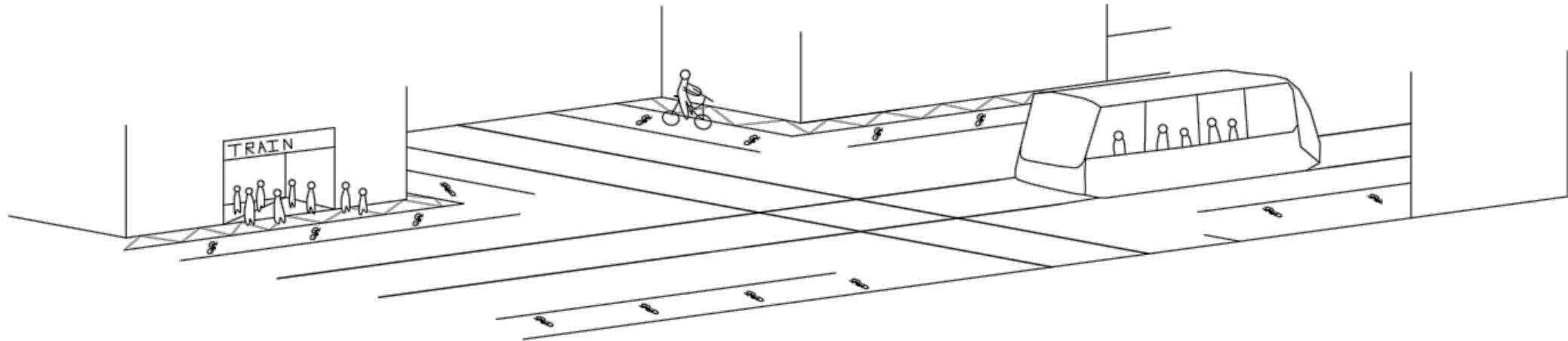| 3 GOOD HEALTH AND WELL-BEING	7 AFFORDABLE AND CLEAN ENERGY	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	13 CLIMATE ACTION
Energy generation through turnstiles aligns people closer to their community	Harnesses a clean and otherwise wasted energy	Innovative infrastructure to promote a circular economy	Rather than consume energy to power terminals & gates, harness kinetic energy to generate power	Change energy consumption into clean energy generation

Social & Community

Ill health due to loneliness costs Australia $2.7bn each year

- Avg cost associated with loneliness is *$1,565 a year per person*

- *1,508 people are homeless* in Melbourne

Drivers of Social Connectedness

- Nature & frequency of people's social interactions

- Available social supports

- Interpersonal Trust

- Socio-economic advantage

"1 in 8 people suffer from severe distress"

However, there are over 191 charities in Melbourne that support our people

ST VINCENT'S FOUNDATION

FIGHT MND

FareShare

care

goodfriday appeal
THE ROYAL CHILDREN'S HOSPITAL

1 NO POVERTY	2 ZERO HUNGER	3 GOOD HEALTH AND WELL-BEING	4 QUALITY EDUCATION	5 GENDER EQUALITY	6 CLEAN WATER AND SANITATION	8 DECENT WORK AND ECONOMIC GROWTH	16 PEACE, JUSTICE AND STRONG INSTITUTIONS
11.9% of Melbourne population is under the poverty line of $62.70 per week	1/3 Households suffer from food insecurity	1/8 suffer from 'severe distress'	Over a quarter of Australians have poor financial literacy	Women spend 9 hours a week more than men on unpaid work	Require greater access to clean sensitisation for those without a home	Greater unemployment rate of 7.6% compared to national average	Weak support of government with many nonprofits

Community

15 – minute cities to improve personal mobility
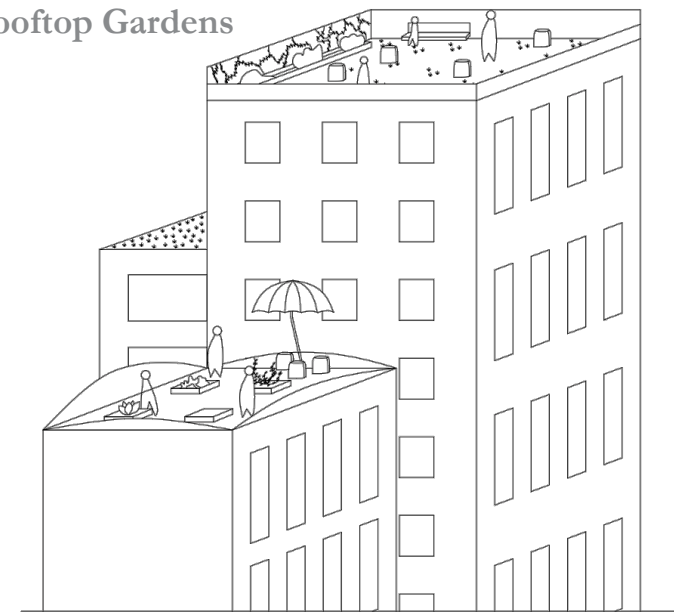
Features of Community Centres

Gardens

- Rooftop Community Garden to provide ***fresh produce*** for those in need

Education

- Provide financial education and to improve ***financial literacy & alleviate financial burden***

- Gender equality & young leader programs to ***create harmony*** between citizens

- Mentorship events to provide ***all individuals access to industry*** & discover available employment opportunities

Hardship

- Provide access to showers and hygiene facilities

- Community stores set up to distribute leftover food & second-hand clothing, books & furniture

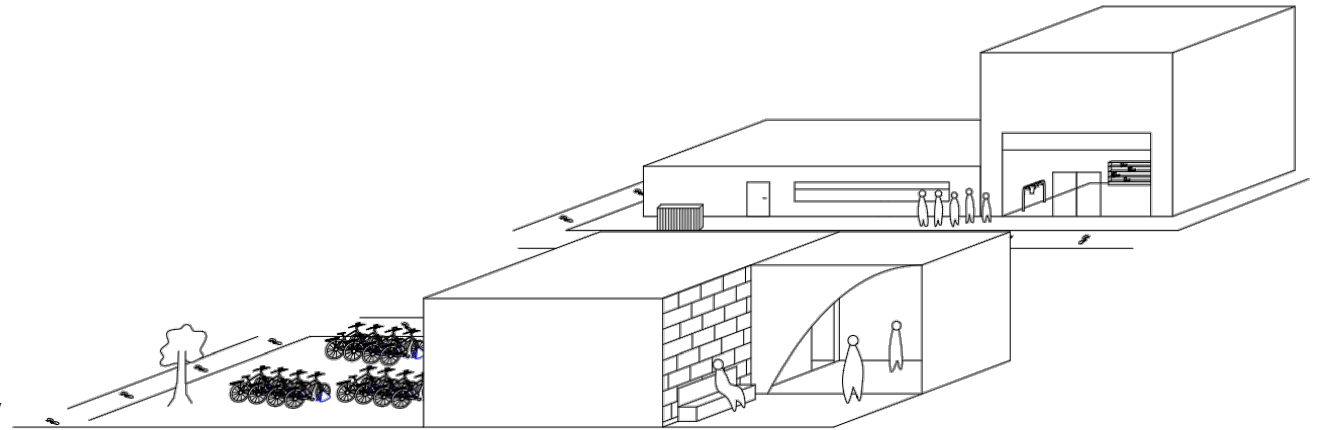| 1 NO POVERTY	2 ZERO HUNGER	3 GOOD HEALTH AND WELL-BEING	4 QUALITY EDUCATION	5 GENDER EQUALITY	6 CLEAN WATER AND SANITATION	8 DECENT WORK AND ECONOMIC GROWTH
Enable access to education, sanitation & clothing to provide to equalize footing in the workforce	Redistribution & Collection of leftover food from restaurants & cafes	Communal identify through being associated in programs & clubs	Over a quarter of Australians have poor financial literacy	Empowering women through sticking together	Access to communal facilities such as showers & laundry services & clean water	Access to communal facilities such as showers & laundry services & clean water

Community

Supporting & Growing Charities & Entrepreneurs
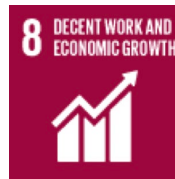
Open Office Spaces for Sharing & Growth

Features

- Monthly held *innovation lab* competitions to spark idea generations in sustainability

- Business development for entrepreneurs & charities to *further their missions*

- Provide working spaces to support the work of upcoming entrepreneurs

- Create a *communal mission* & standard of creating a sustainable city by 2030

- Joint ventures with NGOs to attain the same goals

4 QUALITY EDUCATION — Nonprofits can learn from industry leaders in how to scale their businesses, the basics of business development

8 DECENT WORK AND ECONOMIC GROWTH — New innovative solutions generate new job opportunities & the sharing of information accelerates the growth of these upcoming organisations

16 PEACE, JUSTICE AND STRONG INSTITUTIONS — Enabling the government to collaborate with business leaders to create strong institutions capable of tackling change

THE BIG ISSUE — Charity that provides opportunity to people experiencing homelessness & disadvantage

OrangeSky Australia — Connects people experiencing homelessness through free laundry, showers & conversations
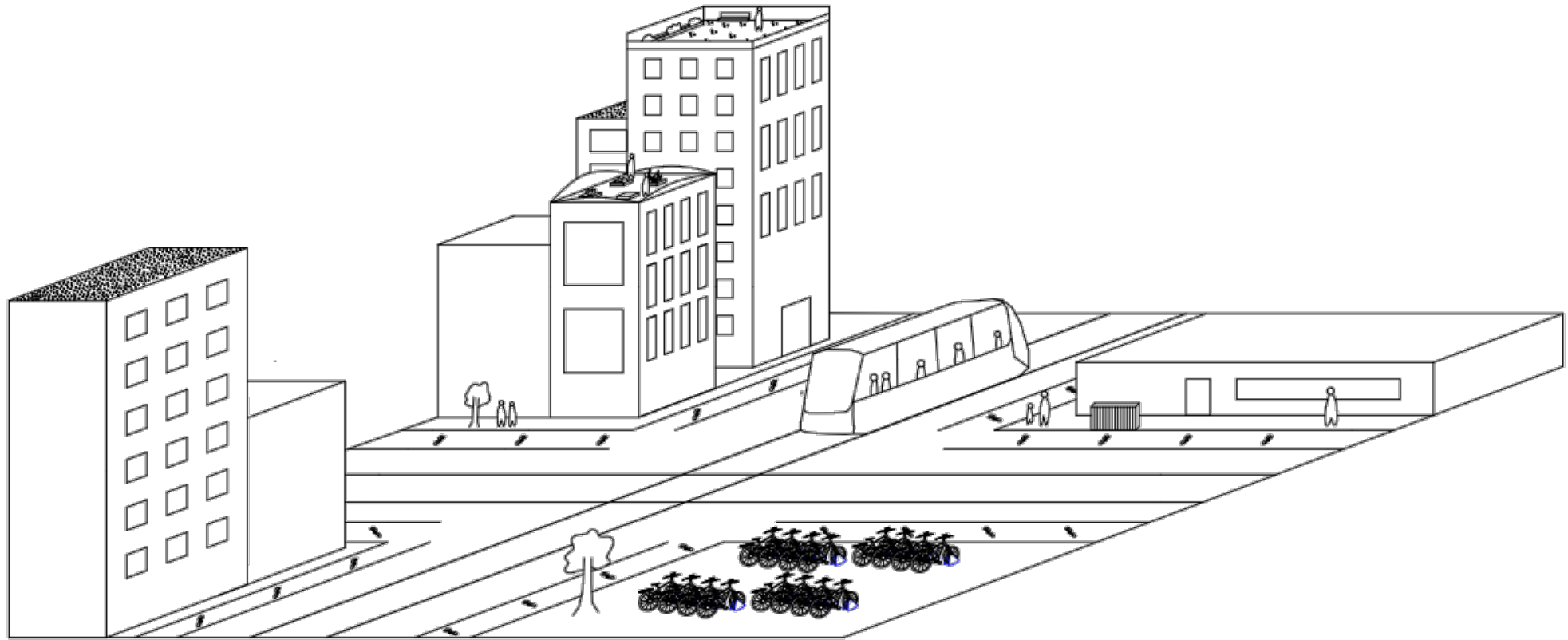
FOODFILLED inc. — Food rescue charity dedicated to combating food wastage and alleviating hunger

Our 15 Minute City

Mobility & Community Incorporated

Wastage

In FY18 Melbourne residents generated over 40,000 tonnes of waste of which only 25% was recycled

Hard Waste

- In FY20 **112,000 hard waste** collected in Victoria, only 20,200 tonnes recycled

- *Average household produced 51kg of hard waste*

Food Wastage

- Food waste in Australia amounts to more than 7.6 million tonnes, costing over $36.6 billion despite **70% still perfectly edible**

- 10% of greenhouse gas emission come from food produced = 17.5 million tonnes of CO_2 for Australia each year

- 1/3 of households are throwing out one shopping bag of food waste per week

Energy waste in Australia amounts to

$222 million each year

Why are we wasting food?

- 43% don't know how to reduce their wastage

- 25% get bored with the same meals

- 18% struggle to cook food before expiry

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7 AFFORDABLE AND CLEAN ENERGY

Energy wastage increases unnecessary demand increases pricing

11 SUSTAINABLE CITIES AND COMMUNITIES

Melbourne is creating more waste than we are sorting

13 CLIMATE ACTION

Wastage is contributing to global temperature rises – hottest summer in 2024

14 LIFE BELOW WATER

Ocean absorbing 93% of excess heat, getting warmer, more acidic and less oxygenated

15 LIFE ON LAND

Greater protection of native flora required

17 PARTNERSHIPS FOR THE GOALS

Work with organization to create sustainable solutions

AI as the frontier for waste reduction

Mobilising our Consumption habits

Features of Energy Optimisation Machine Learning Software

- Analyses energy usage in buildings, fridges & other infrastructure & sets temperature or usage at optimal levels for health

- ie. Often fridges set at lower temperature than what is required / desired

- ie. Exergenics optimize chilled water plant systems energy reduction of 20.3%

Self-Sorting Bins

- Often in Melbourne only the general waste bin is supplied

- *94% of us are messing up recycling*

Features

- AI driven recognition system that ***automatically sorts waste***

- Compresses waste to fit more in

- Populates ***statistics on wastage*** & enables monitoring of waste

Optimising energy usage to reduce wastage

AI powered bins & energy optimization to create a circular economy

Reduce CO2 emissions

Effectively manage wastage to reduce litter
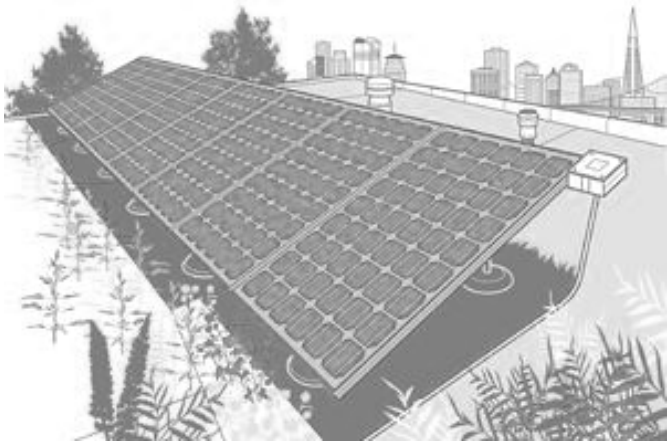
Our Environment

Harnessing the power of Melbourne

Solar Green Roofing

Vertical Gardens

Green Roofing Solar Panels

Features
- Solar panels on green roof reduces surface temperature up to 20 degrees during Summer, improve output by 3.6%

- Green roof **absorbs greenhouse gases**

- **Increases level of biodiversity**

- Reduce stormwater drains and reduce impact of flooding

- Provides i*nsulation* to the buildings

Vertical Gardening in Community Centers & Office Buildings

Features
- Vertical gardens *improve the air quality* inside & outside buildings

- Native flora is incentivized

- Improves community as individuals work together to garden

 7 AFFORDABLE AND CLEAN ENERGY

Assists conversion to renewables as more solar energy harnessed

 11 SUSTAINABLE CITIES AND COMMUNITIES

Creates more green spaces to absorb greenhouse gases

 13 CLIMATE ACTION

Absorb greenhouse gases & production of renewables

 14 LIFE BELOW WATER

Decreases the burden on the ocean to absorb our waste

 15 LIFE ON LAND

More greenery promotes increase biodiversity
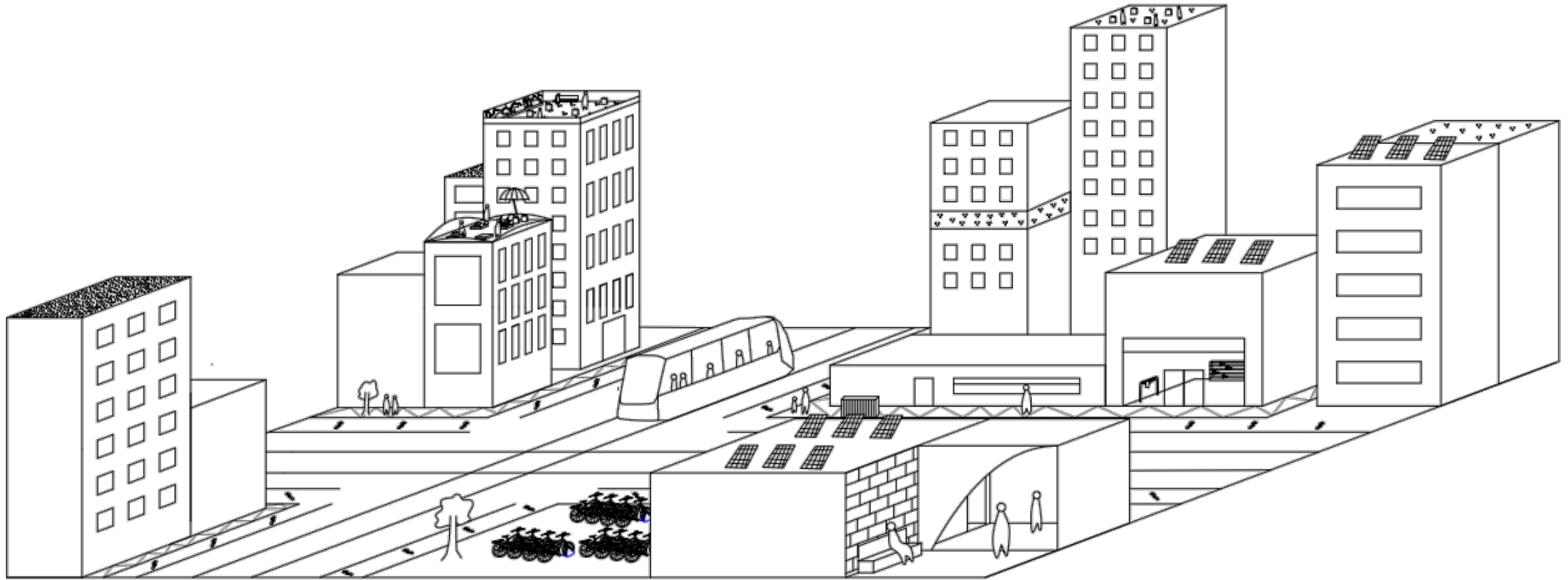
 17 PARTNERSHIPS FOR THE GOALS

Individuals work together & stronger sense of community

Melbourne 2030 as a 15-minute circular economy

Daily amenities within a 15–20-minute commute & Materials are regenerated

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