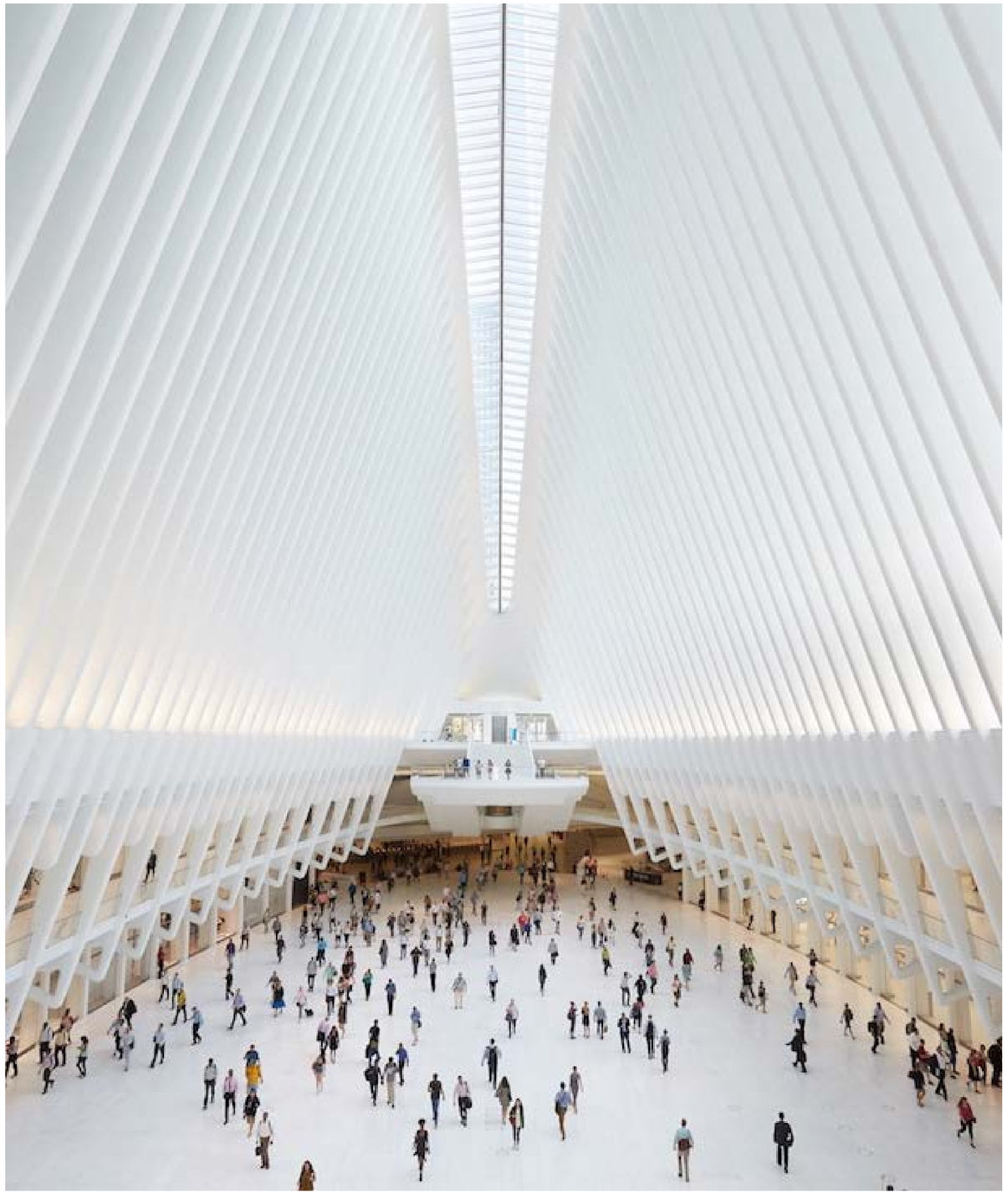
# Zero Waste

# Design Guidelines

**Design Strategies and Case Studies for a Zero Waste City**

AIA New York
CENTER FOR ARCHITECTURE
Kiss + Cathcart, Architects
foodprint group
CLOSEDLOOPS
With support from
The ROCKEFELLER FOUNDATION



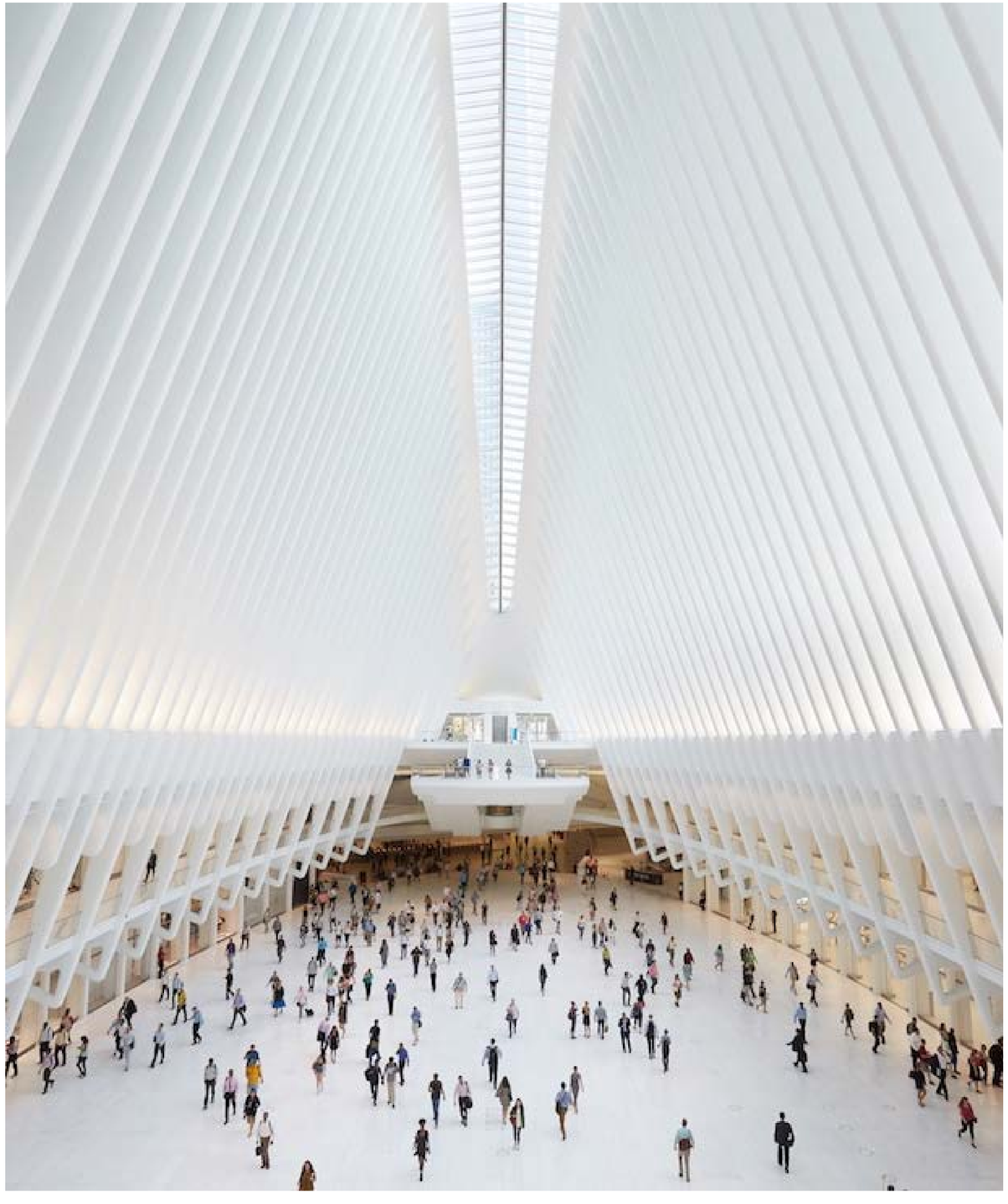
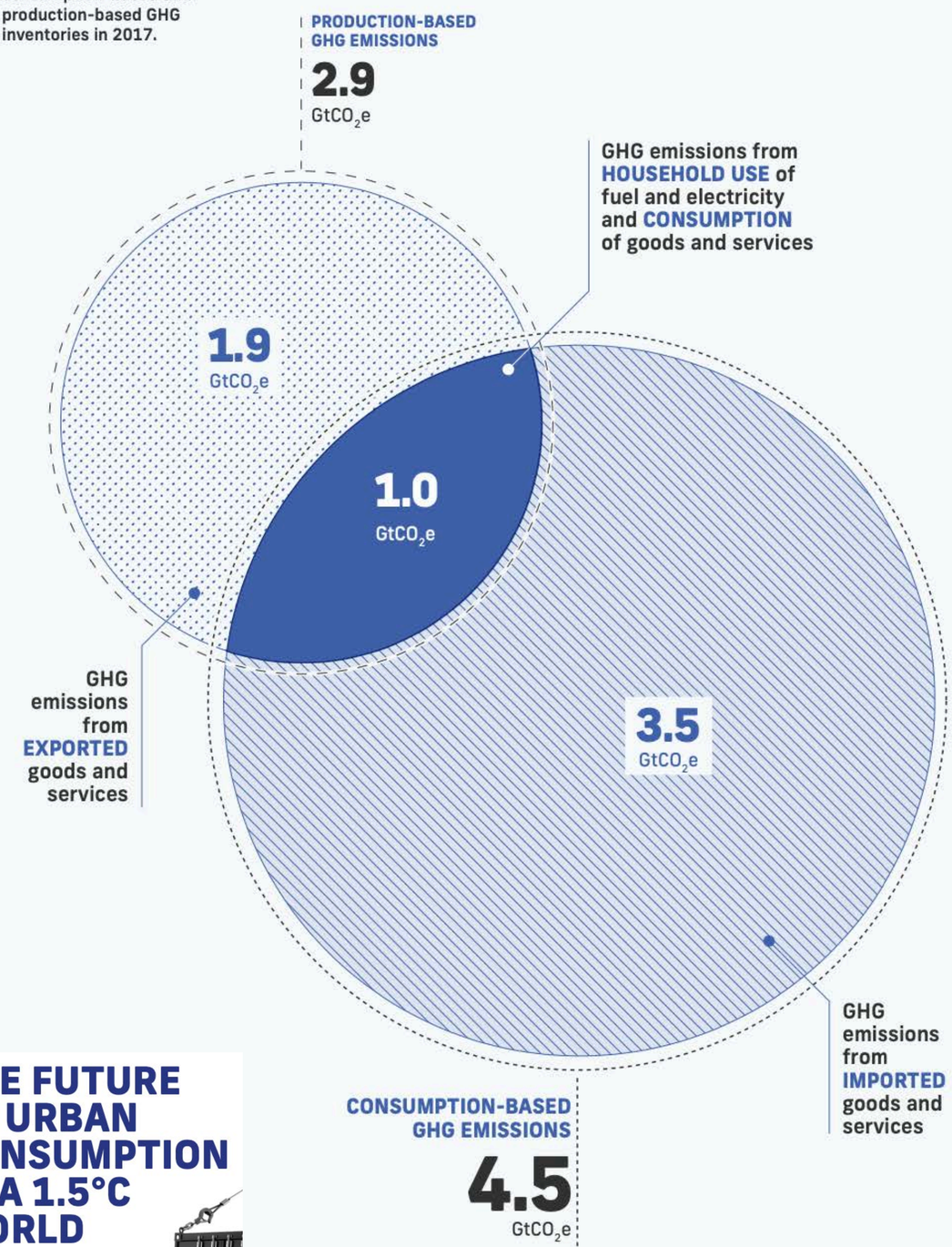


*fig.3*

Comparison of C40 consumption-based and production-based GHG inventories in 2017.




**THE FUTURE OF URBAN CONSUMPTION IN A 1.5°C WORLD**

**C40 CITIES**

| Consumption category | Consumption interventions | Emission reductions per consumption category between 2017 and 2030 |
|---|---|---|
| | • Reduce the number of new clothing items bought every year<br>• Reduce supply chain waste | **39%**<br>(Reducing the number of new clothing items alone accounts for 37%) |
| | • Dietary change: eat in line with health recommendations and lower meat and dairy consumption<br>• Reduce household waste<br>• Reduce supply chain waste | **36%**<br>(Dietary change alone accounts for 27%) |
| | • Reduce number of flights<br>• Increase adoption of sustainable aviation fuel | **26%**<br>(Reducing number of flights alone accounts for 18%) |
| | • Improve materials efficiency<br>• Enhance building utilisation<br>• Switch to lower carbon materials<br>• Adopt low-carbon cement<br>• Reuse building components | **26%**<br>(Improving materials efficiency and enhance building utilisation together account for 18%) |
| | • Reduce car ownership<br>• Increase car lifespans<br>• Increase material efficiency | **28%**<br>(Reducing car ownership alone accounts for 24%) |
| | • Optimise lifetimes of IT equipment | **18%** |

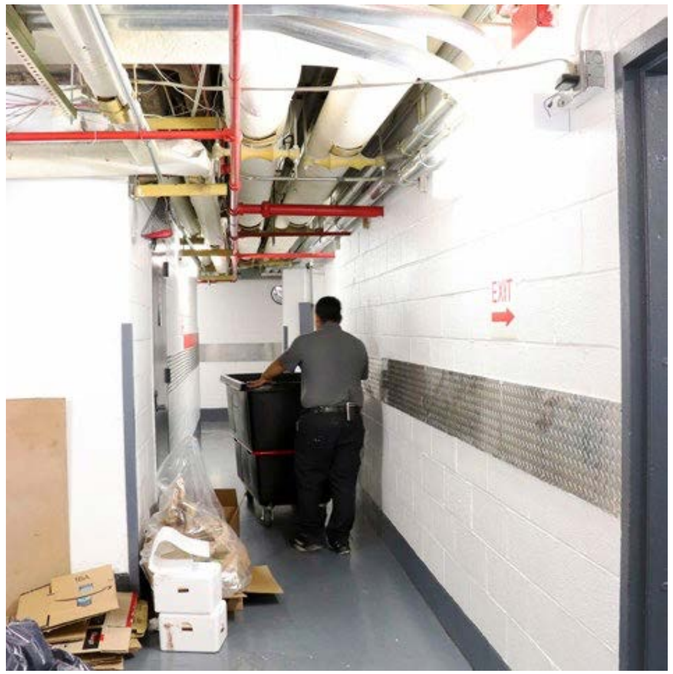
# How Can Design Help Us Change the System?

Mushrooms are decomposers—they break down dead organic matter and return nutrients to the soil for new growth.


Increasing collaboration, feedback loops, circularity, diversity, resilience

# Strategies for Building Design

**Planning for Waste as a Material Flow**





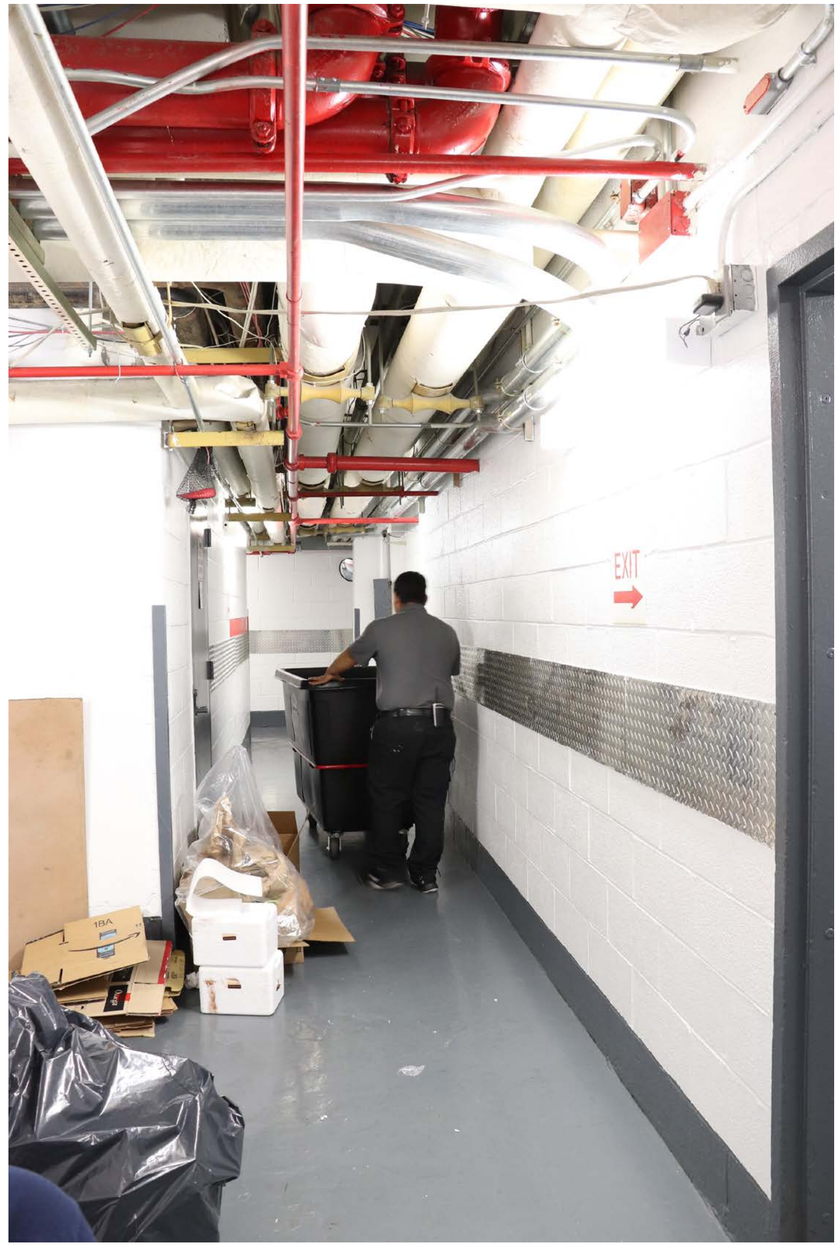
**Waste Diversion Strategies**

**Waste Reduction Strategies**

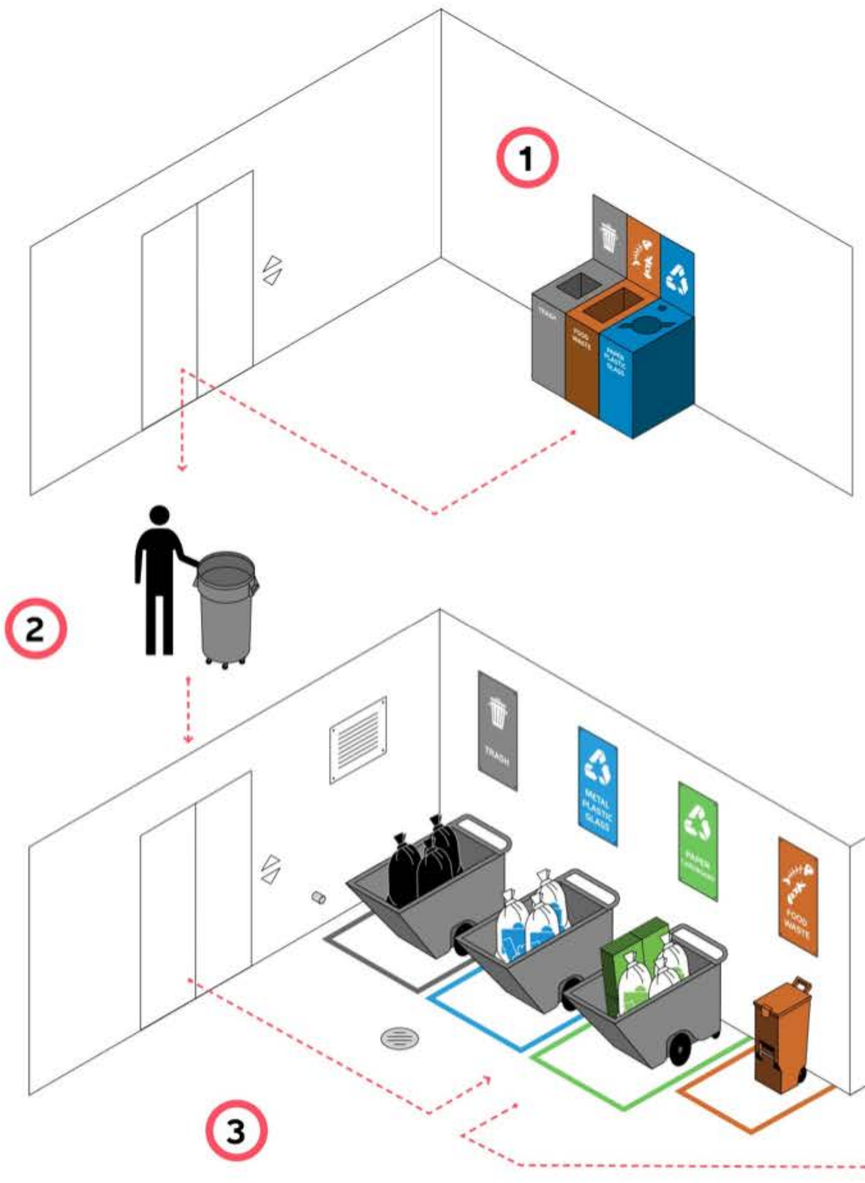

**Volume Reduction Strategies**

# Planning for Waste as a Material Flow

- Estimate the volume of all waste streams the facility will generate. This can be done through use of the waste calculator tool.
- Design adequate storage space
- Consider staff procedures



# Waste Management Plan




1. Plan for tenant disposal and separation

   — Waste stream types and quantities
   — Location of waste stations
   — Types of bins
   — Signage

2. Plan for movement of recyclables and waste to central storage

   — Responsibility
   — Frequency
   — Transport containers
   — Route

3. Plan for waste storage

   — Calculate area required
   — Volume reduction equipment
   — Location
   — Layout of storage space
   — Accessibility
   — Time restrictions

4. Plan for collection

   If bags on curb:
   — Designated area, size and location

   If set out containers:
   — Designated area, size and location
   — Staffing to return containers
   — Area to wash containers

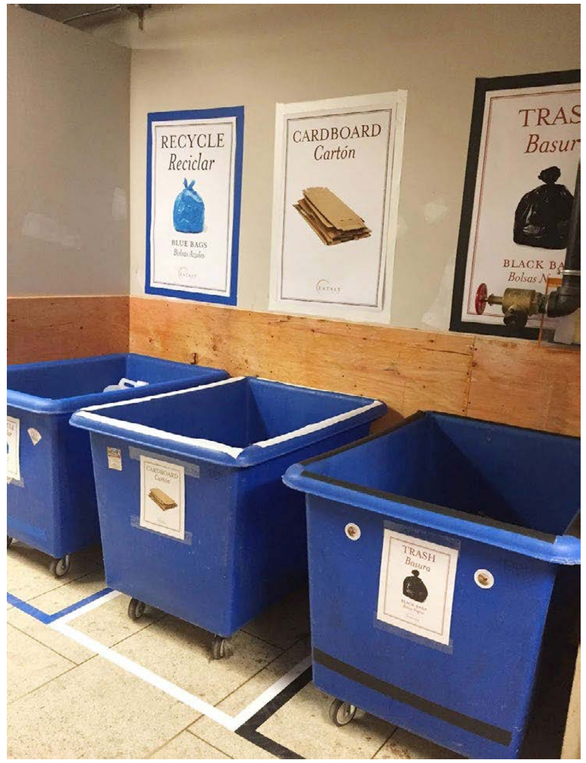
   If compactor containers:
   — Collection vehicle access
   — Ceiling height

# Designing for waste separation

- Clear visual cues and signage, consistent throughout building.
- Opportunities for feedback to encourage behavior change.



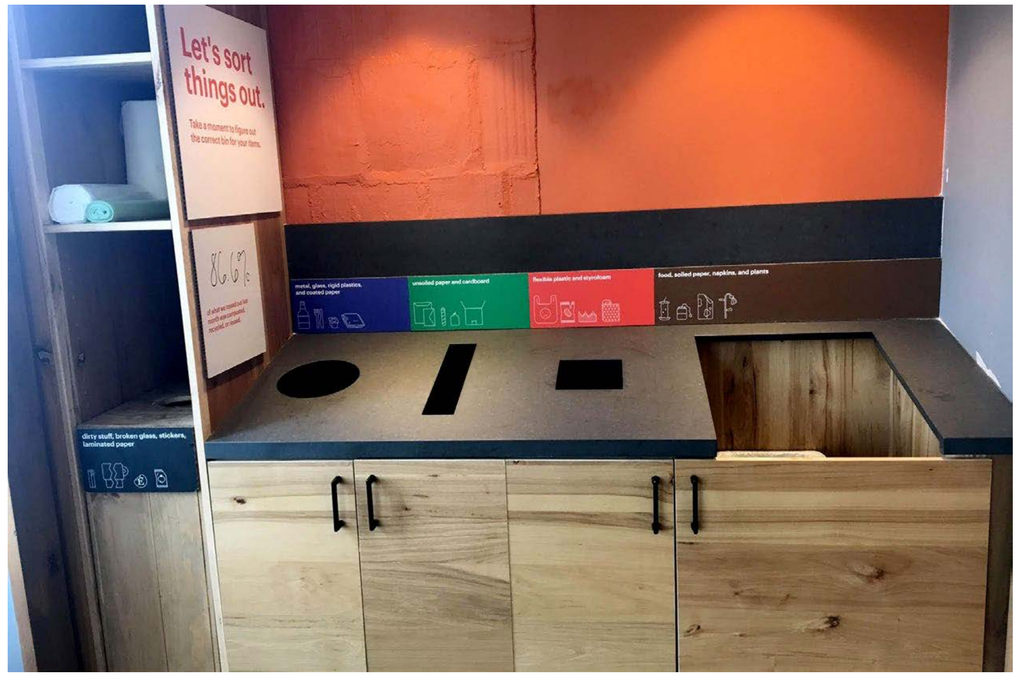
*Eataly signage front and back of house, credit Foodprint Group*




Above:
Signage for staff

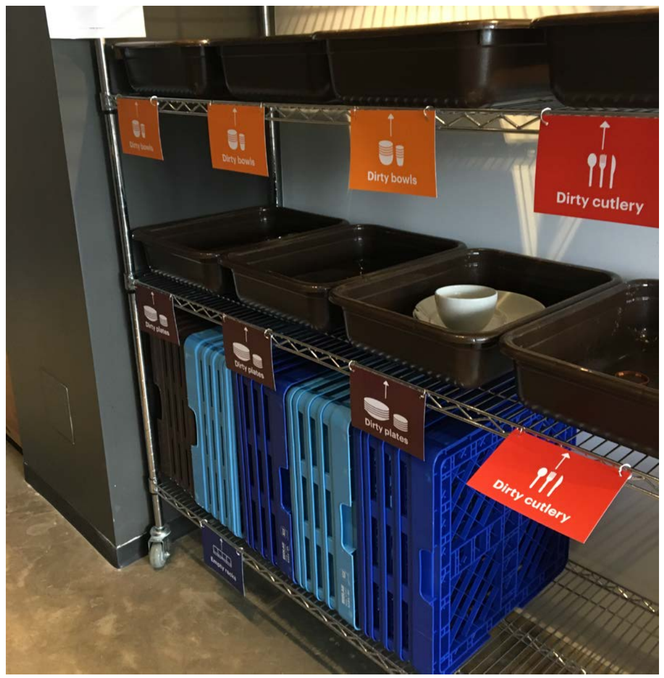
Left:
Back of house recycling storage area with bins in marked locations

# Etsy headquarters, Brooklyn NY



Case Study: Etsy

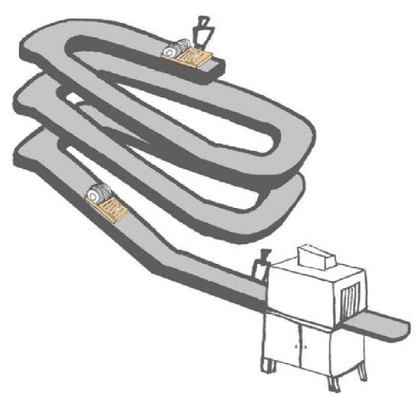


# Reduce material consumption:

- Provide dishwashers in dining spaces to allow the use of reusable dishware.

- Reduce food waste generation through design of food service spaces

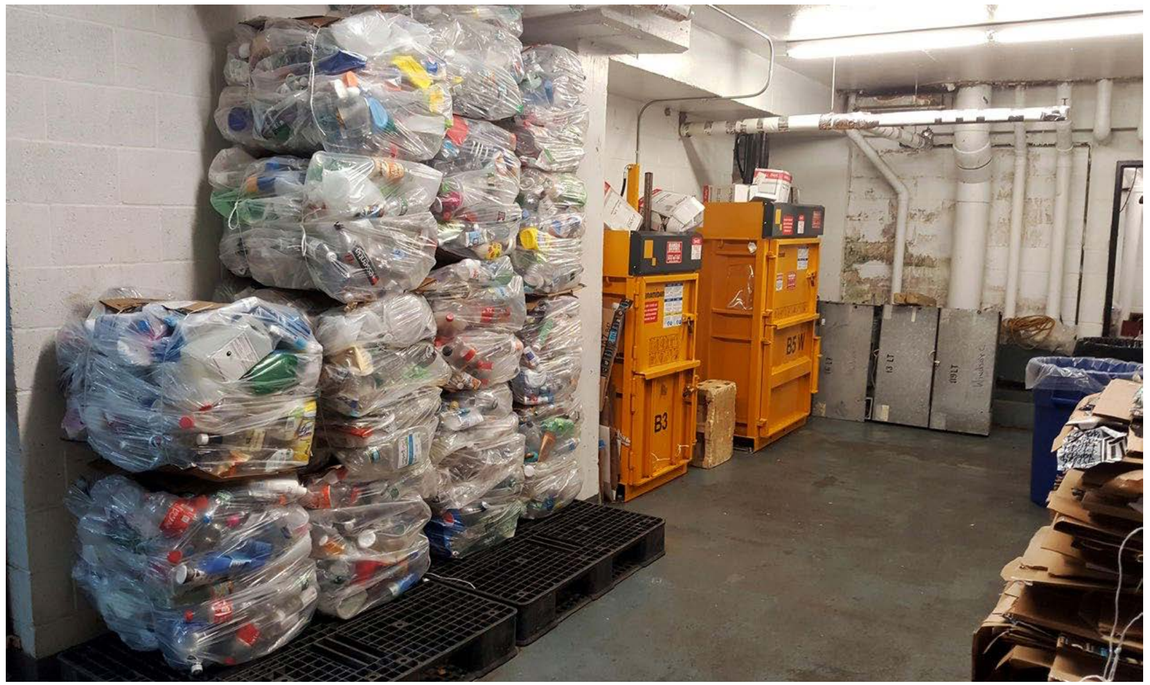
- Incorporate financial incentives to reduce waste.



# Reduce waste volume:

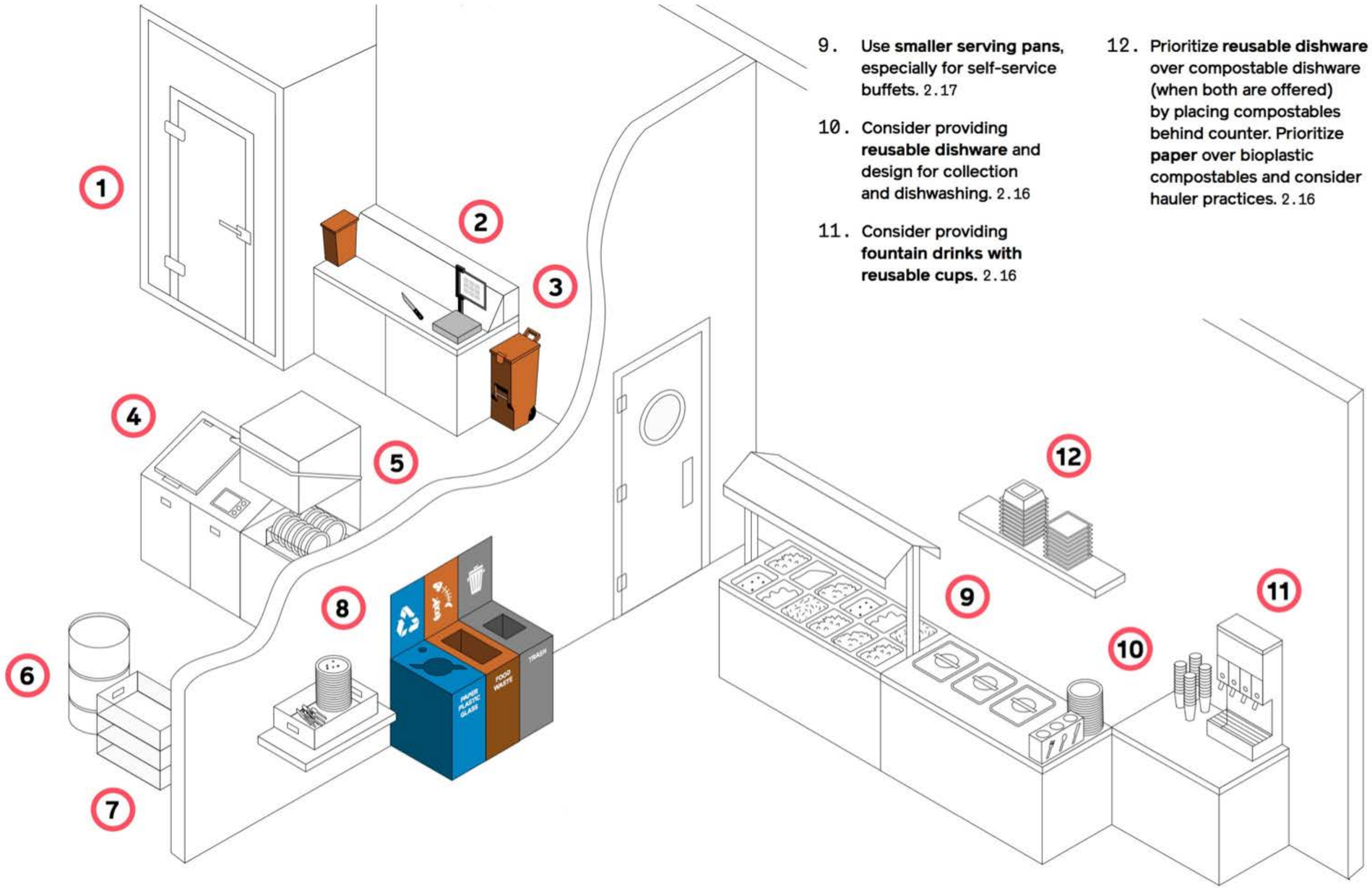
- Provide balers, compactors
- Pretreat organic waste onsite to reduce odors and weight.





# Food Service Design Strategies

1. Refrigerator includes **storage for food donations**. Locate food donation storage for convenient collection. 2.18
2. Provide **food waste tracking system with scale**. 2.17
3. Organic waste collection in kitchen: replace refuse bins with **small organics toters**, and **countertop organics caddies**. 2.09
4. For volume reduction, consider **food waste pretreatment equipment**.
5. Provide **dishwashers** and consider path from dish room to dining area. For larger operations consider dish carousels. 2.16
6. Accommodate **cooking oil collection and storage**. 2.14
7. Delivery considerations: Where possible receive deliveries in **reusable crates** that the vendor collects. 2.06
8. Design **customer recycling stations** with clear visual cues and signage to accommodate all waste generated, including liquids. 2.10



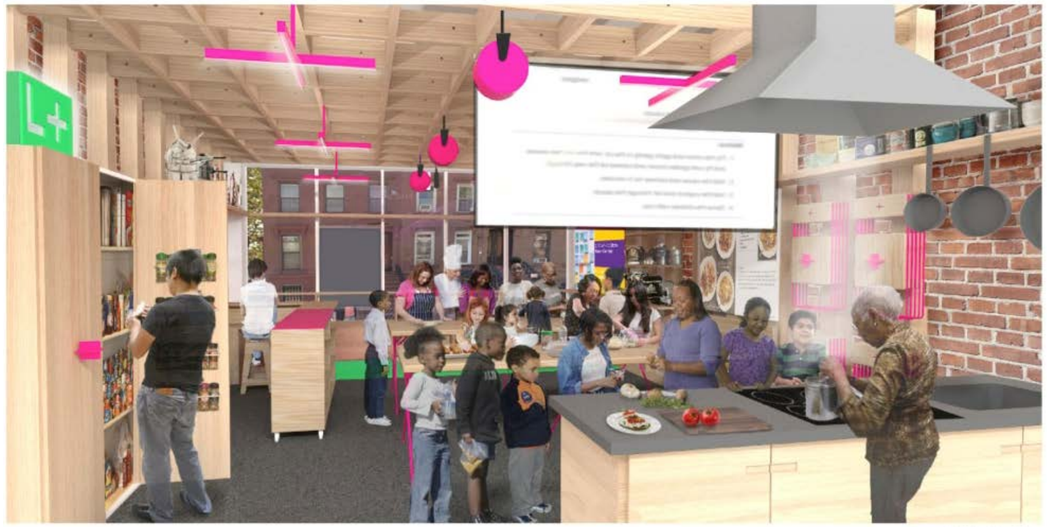

9. Use **smaller serving pans**, especially for self-service buffets. 2.17
10. Consider providing **reusable dishware** and design for collection and dishwashing. 2.16
11. Consider providing **fountain drinks with reusable cups.** 2.16
12. Prioritize **reusable dishware** over compostable dishware (when both are offered) by placing compostables behind counter. Prioritize **paper** over bioplastic compostables and consider hauler practices. 2.16

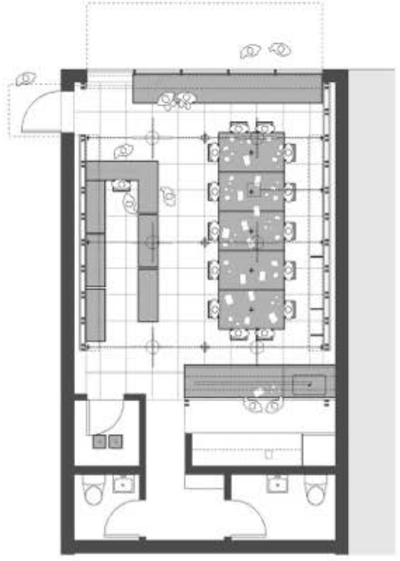
# Circular Building Materials

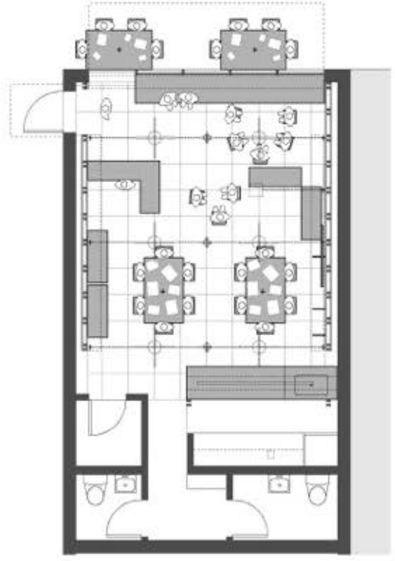
### Material Optimization Strategies

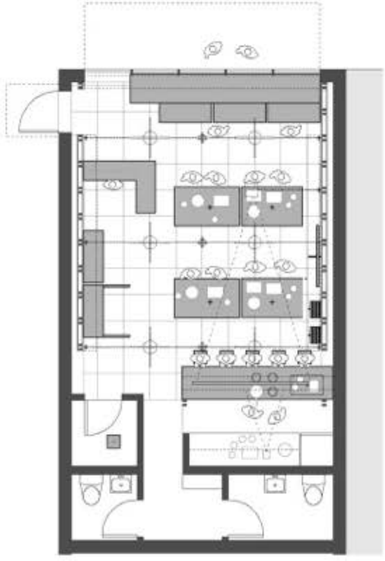
Lean design that right-sizes the building, optimizes the materials used, and considers end of life

| |
|---|
| 2.25 MAXIMIZE ASSET UTILIZATION THROUGH PROGRAMMING |
| Program to make the most use of an asset. |
| Design to increase the usage of spaces and equipment within a building. |
| 2.26 DESIGN TO OPTIMIZE MATERIAL USAGE |
| 2.27 DESIGN TO REDUCE WASTE GENERATED DURING CONSTRUCTION |
| Coordinate dimensions and minimize finish types |
| Design for off-site construction |
| Use Building Information Modeling (BIM) |
| 2.28 DESIGN FOR DECONSTRUCTION AT THE END OF LIFE OF A BUILDING COMPONENT |
| Design for easy refurbishment of isolated materials. |
| Design for deconstruction and disassembly. |
| Provide material information: material passports. |
| Consider suppliers willing to take back materials |




**L+ Proposal for Reenvisioning Branch Libraries**

# Dissemination of Zero Waste Design Guidelines

Exhibition at Center for Architecture

Educating Architects

- Zero Waste Challenge
- Presentations & Technical Assistance
- Referencing in standards, eg LEED

Adapting to other Cities

Non-Profit Center for Zero Waste Design


Center for Zero Waste Design

*ZeroWasteDesign.org*

*CenterforZeroWasteDesign.org*

The New York Times
BuildingGreen
METROPOLIS
CRAIN'S NEW YORK BUSINESS
WasteDIVE
ARCHITECT
FAST COMPANY
Waste 360
ARCHITECTURAL RECORD
CITYLAB
MANN REPORT

# Oceanix Floating City

# Oceanix Busan

OCEANIX

| | ENERGY | WATER | RESOURCES | FOOD | MOBILITY | HABITAT REGENERATION |
|---|---|---|---|---|---|---|
| | NET- ZERO OPERATING ENERGY | NET-POSITIVE WATER IMPACT | WASTE REDUCTION & RECIRCULATION | LOCAL PLANT BASED DIET | ELECTRIC + SHARED | BIOLOGICAL WATER-CLEANING PERIMETERS |
| BASELINE | **143** KWH/M²/YEAR<br>Energy Standard for Buildings* | **178** L OF POTABLE WATER PER PERSON/DAY<br>Standard Korea New Building Water Use | **1** KG/ PERSON / DAY<br>Busan Typical Waste Generation | **.94** GLOBAL HECTARES (GHA) PER PERSON<br>Ecological footprint typical Korean diet | **4.6** MT CO2 EMISSIONS PER PERSON/YEAR<br>Fuel-based Cars** | **0** Square Meters<br>Living Shorelines in Busan North Port |
| REDUCTION STRATEGY | **-42%**<br>Energy Effection Technology + Reduce Loads | **-78%**<br>Natural Capture, Re-use + Replemenishment | **-90%**<br>Reduction & Diversion | **-50%**<br>Reduction in ecological footprint | **-90%**<br>Eliminate Fuel-Based Cars | **100%**<br>Regenerative Perimeters added to the Platforms |
| GOAL | **83** KWH/M²/YEAR<br>Energy Standard for Oceanix Buildings | **40** L OF POTABLE WATER PER PERSON/DAY<br>Net Positive Replenishment | **0.1** KG/ PERSON / DAY<br>Trash Generated | **0.47** GLOBAL HECTARES (GHA) PER PERSON<br>Vegan + onsite seafood diet | **0** MT CO2 EMISSIONS PER PERSON/YEAR<br>Electric shared mobility | **40,000** Square Meters<br>Regenerative living surfaces filtering the water |
| PRECEDENT |  |  |  |  |  |  |

* (ASHRAE 90.1)

# BASELINE + GOAL METRICS

OCEANIX

| | Mains |
|---|---|
| HLD Spice Bird | 1.30 |
| HLD Nice Bird | 1.30 |
| Spinach Pie | 0.88 |
| Guinness Cottage Pie | 4.61 |
| Black Bean Chili | 1.06 |
| Thai Coconut Green Curry | 0.68 |
| Pad Thai | 0.83 |
| Pork Ribs | 1.28 |


**Hotel Footprinting Tool:**

Access tool →

**Calculating the carbon footprint of hotel stays for business travel:**

Find out how →

## FOOD FOOTPRINT

## FOOTPRINT TRACKER

## LODGING FOOTPRINT

# FOOTPRINT TRACKING

OCEANIX

**POLLUTION**

**RESOURCE SCARCITY**

**CLIMATE**

# DRIVERS

OCEANIX


**ZERO WASTE CERTIFIED**

**NO SINGLE-USE PLASTICS, NO LITTER TO OCEAN**

**ALL ORGANIC WASTE TREATED ON-SITE**

**REDUCED USE OF VIRGIN RESOURCES AND EMBODIED CARBON**

# GOALS

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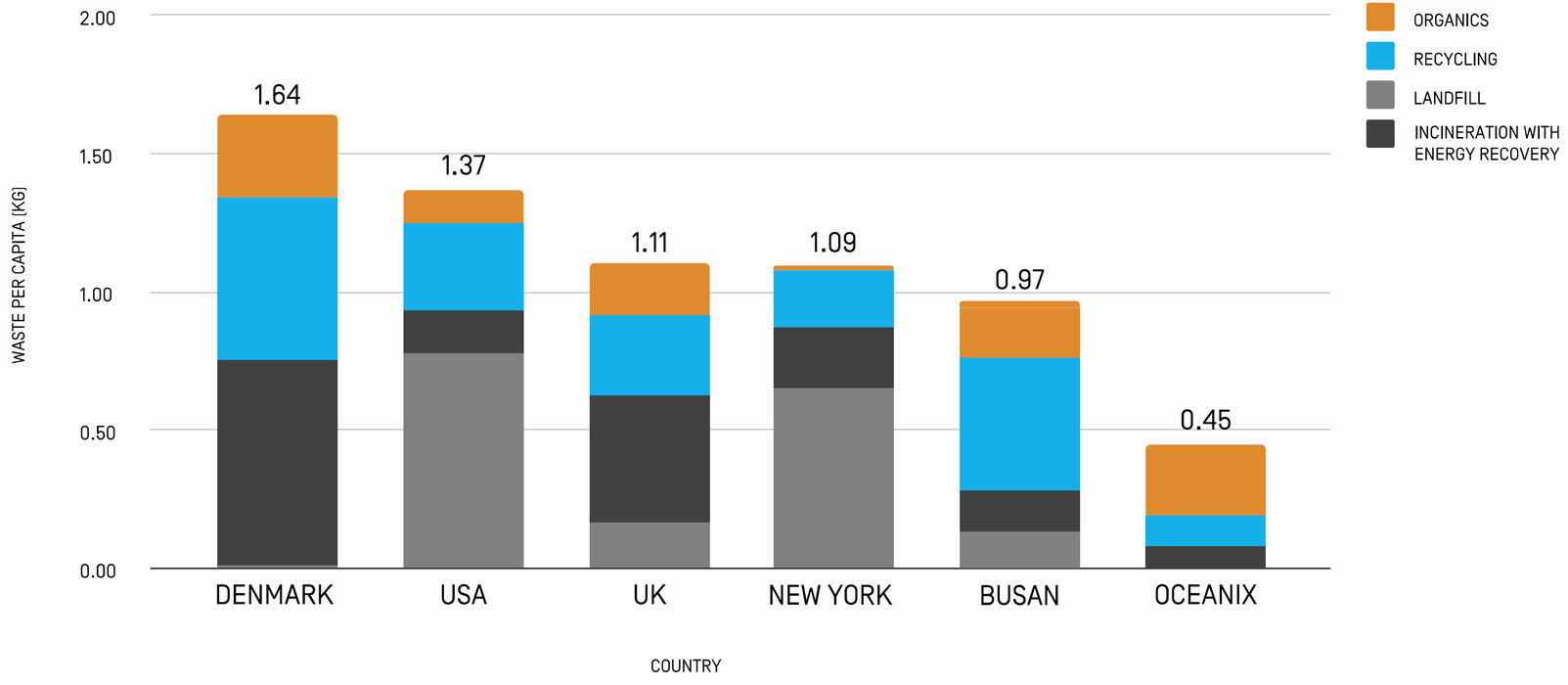



**KOREAN RFID FOOD WASTE BIN**

# KOREA'S WASTE SEPARATION POLICIES

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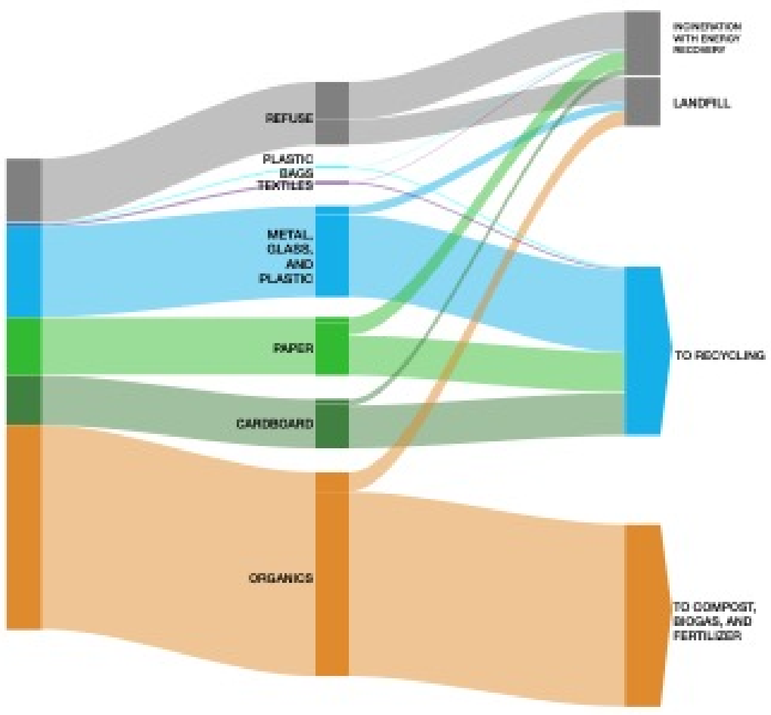
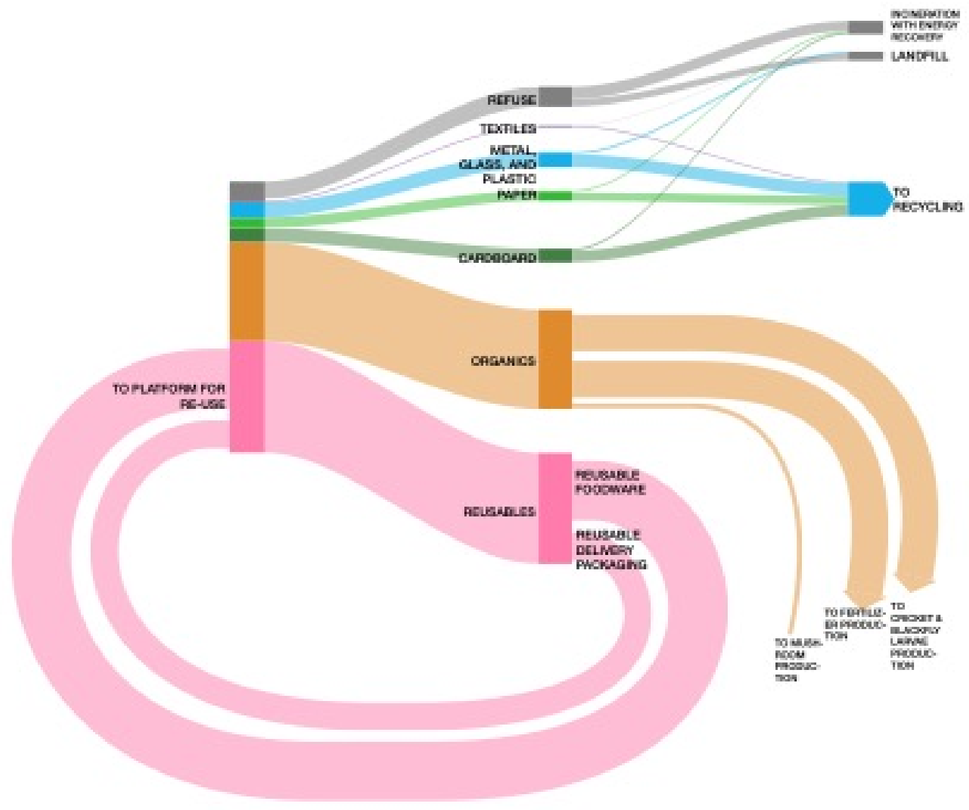
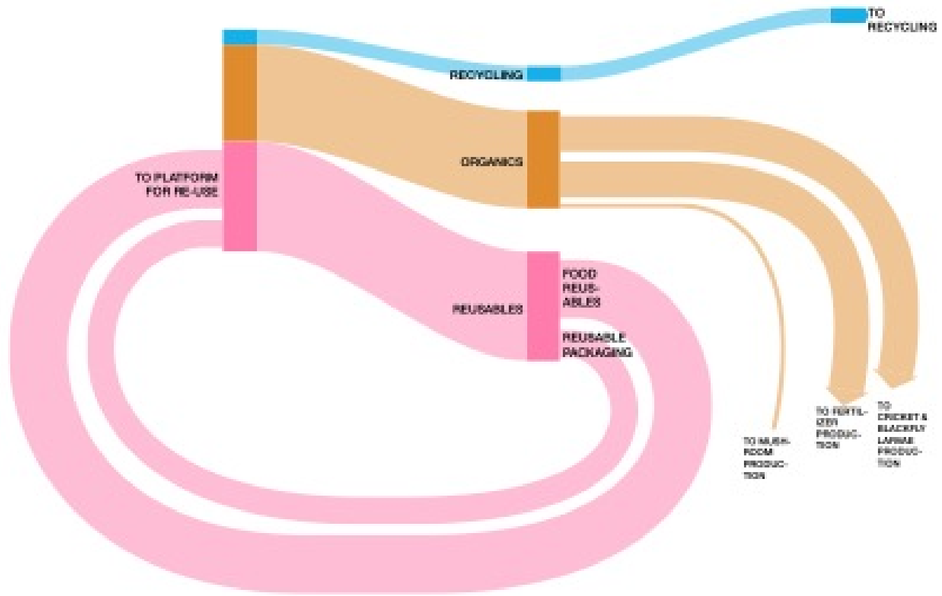



**TYPICAL WASTE GENERATION**




**DESIGN CASE**

OCEANIX




**FUTURE GOAL**

# A CIRCULAR ZERO WASTE FUTURE

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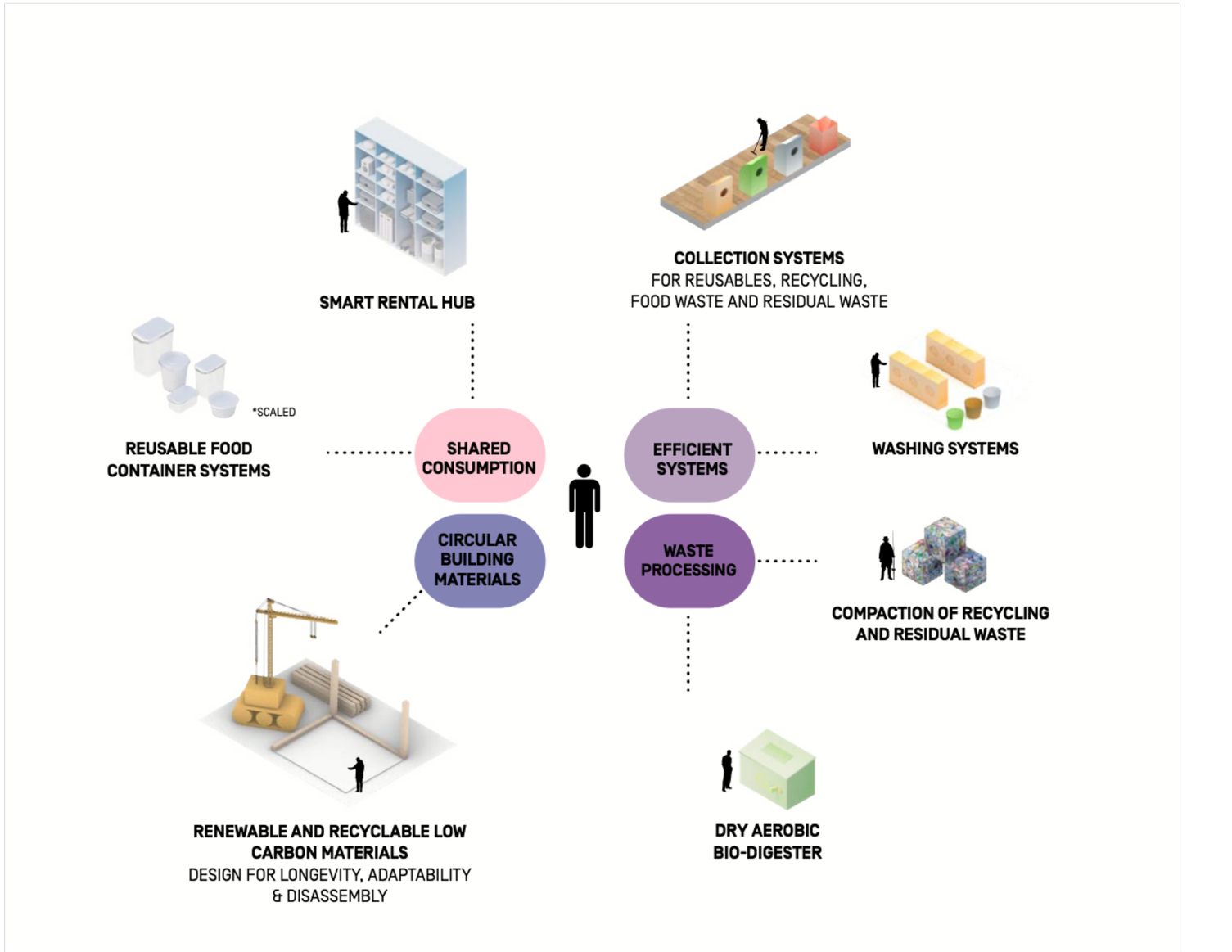


# ZERO WASTE CIRCULAR SYSTEMS

**Resources** | Food | Water | Habitat Regeneration | Structure | Mobility | Energy

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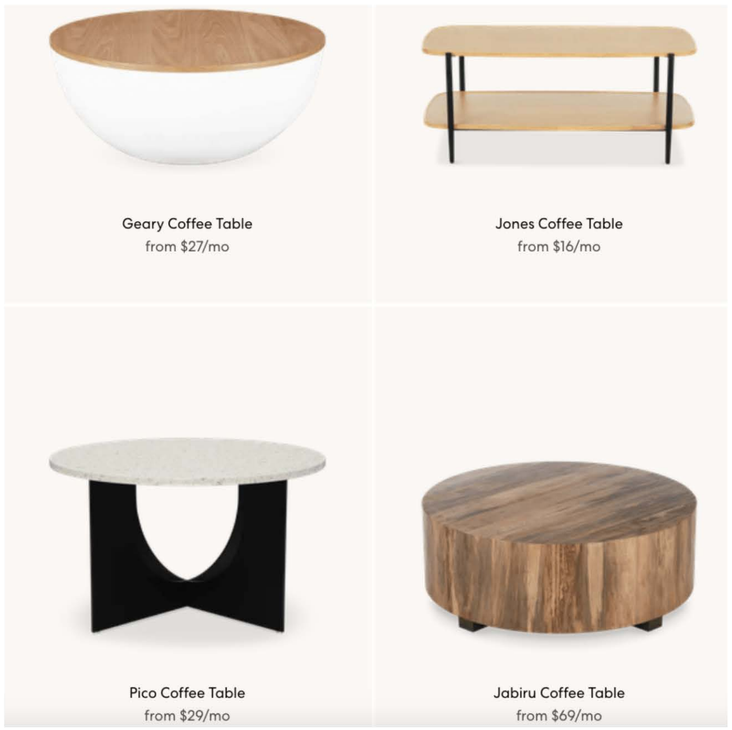



RETAIL RENTAL

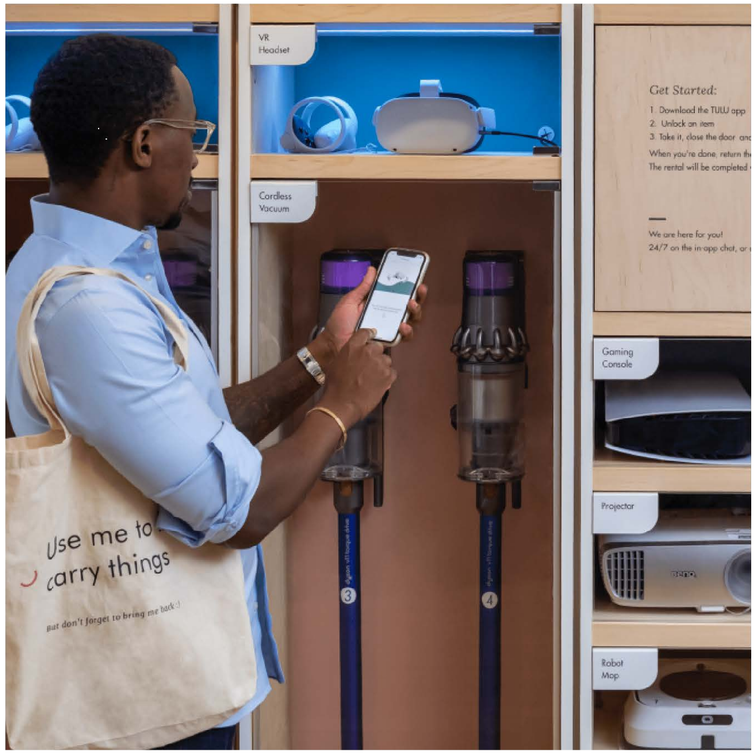
ZERO WASTE RETAIL


RETAIL UPCYCLED GOODS

# SHARED CONSUMPTION

OCEANIX BUSAN. 2022

OCEANIX




SMART RENTAL AND EXCHANGE HUB

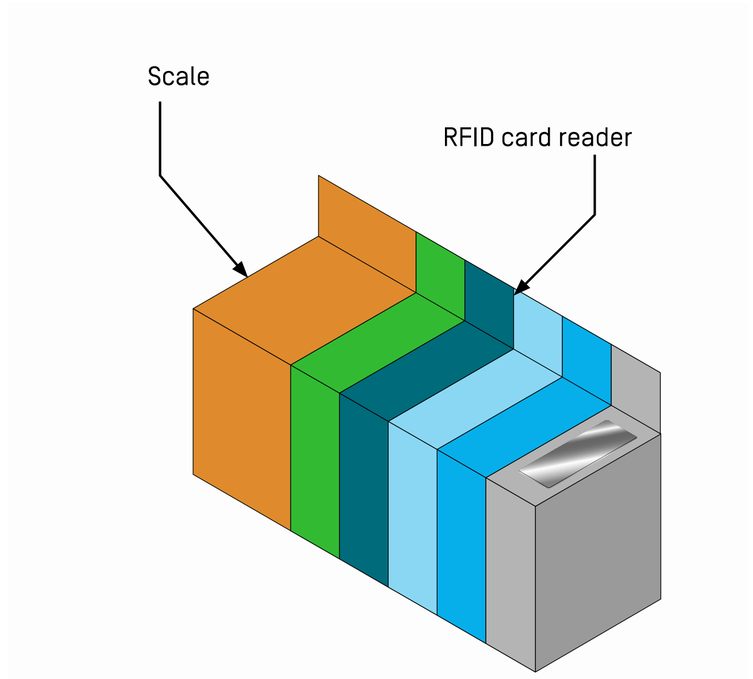

REUSABLE FOODWARE


REUSABLE DELIVERY PACKAGING

# SHARED CONSUMPTION

OCEANI

d in
waste bin




Scale integrated with food procurement system to track all food waste before disposal

Food waste is made into a slurry and goes down a pipe to processing equipment in the hull

# EFFICIENT SYSTEMS

OCEANIX


BALER


BIN COMPACTOR

X 9

RESIDUAL WASTE
PER WEEK

31M3

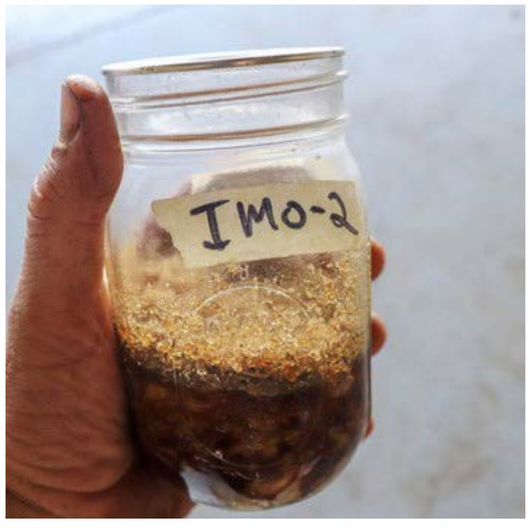
RECYCLING
PER WEEK

# WASTE PROCESSING

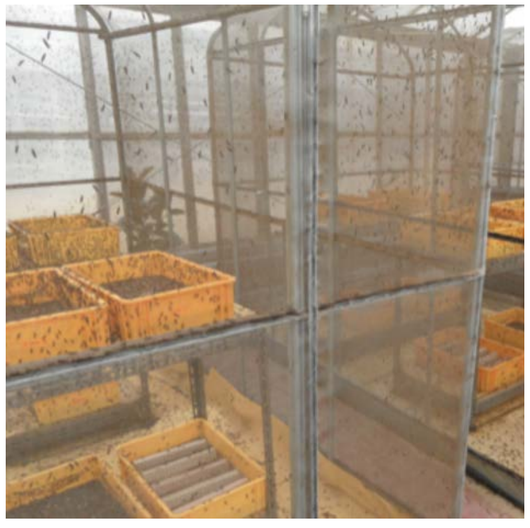
OCEANIX


**DRY AEROBIC BIO-DIGESTER**

**COMMUNITY COMPOSTING**




**CONVERSION TO LIQUID FERTILIZER**



**INSECT FARMING**

# WASTE PROCESSING

## MAINLAND

## CENTRALIZED HUBS WITHIN FLOATING CITY

## TYPICAL MODULE

## LEGEND:

- FOOD
- FOOD WASTE IN PNEUMATIC TUBE (100mm DIA.)
- FOOD WASTE TAKEN BY CART
- REUSABLES CLEAN
- REUSABLES DIRTY (CART? )
- LAUNDRY CLEAN
- LAUNDRY DIRTY, RETURNS AND RESIDUAL MATERIALS - (PNEUMATICS- 400mm)
- COMPOST
- OTHER MATERIALS (APPLIANCES, ELECTRONICS,)

*FOOD GROWN ON ISLAND FOR EXPORT*

*FOOD EXPORTED TO MAINLAND*

**FOOD PROCESSING HUB(S)-** *(BEER BREWING, BREAD BAKING, JUICE MAKING, FISH FILLETING ETC..)*

*FOOD TO BE PROCESSED*

*BULK FOOD (RICE, FLOUR, ALCOHOL, CLEANING PRODUCTS)*

**DISTRIBUTION CENTER** *(BULK GOODS - FOOD, CLEANING PRODUCTS ETC. - GET PACKAGED)*

*PACKAGED FOOD AND GOODS*

*FISH, VEGETABLES TO BE PROCESSED*

*PROCESSED FOOD*

*CLEAN REUSABLE PACKAGING*

*SORTED DISCARDS (RECYLABLES, TEXTILES, UNWANTED ITEMS, TRASH)*

*DISCARDS (RECYCLABLES, TRASH, ITEMS THAT CANNOT BE REPAIRED ON ISLAND)*

**CENTRAL DISCARD CENTER** *(SORTS, AGGREGATES AND MEASURES MATERIALS)*

*MATERIALS THAT CAN BE REMADE INTO NEW THINGS, ITEMS THAT NEED FIXING*

*ITEMS FOR REUSE - CLOTHING, FURNITURE ETC. IN GOOD CONDITION*

*IMPORTED MATERIALS*

*EXPORTED PRODUCTS*

**MAKERS HUB**, *(CAN ALSO FIX CLOTHES, ELECTRONICS, FURNITURE, APPLIANCES ETC)*

*REPAIRED AND MADE ITEMS*

**CENTRAL EXCHANGE HUB** *-(REUSE CENTER - FURNITURE, CLOTHES ETC.)*

*IMPORTED APPLIANCES, FURNITURE, BUILDING MATERIALS*

**CENTRAL LIBRARY FOR APPLIANCES, FURNITURE, ELECTRONICS ETC.**
**DIY OR SERVICE** *(RENT A VACUUM OR DRILL OR PAY FOR CLEANING, OR MAINTENANCE SERVICE)*

*APPLIANCES, ELECTRONICS, FURNITURE ETC.*

*FISH, VEGETABLES*

**GROW & FISH**

**COMPOST**

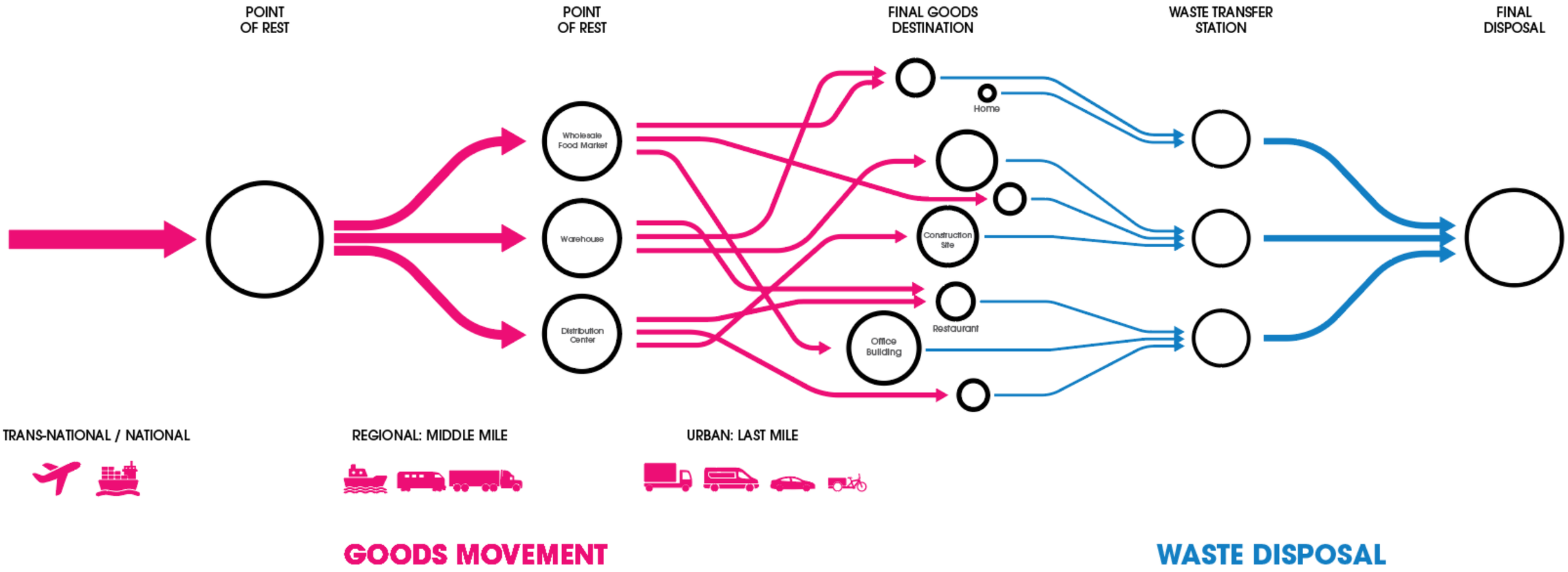
**MODULE SERVICE HUB**
**ANAEROBIC DIGESTION** *(RESTAURANT FOOD WASTE)*
**WASHING CENTER** *(DISHWASHERS FOR CLEANING REUSABLE PACKAGING, USE WASTE HEAT FROM AD AND CHP)*
**DISTRIBUTION CENTER** *((PACKAGED FOOD FROM CENTRAL HUB , FOOD GROWN ON PLATFORM)*
**LAUNDRY**
**DISCARD DROPOFF** *(ANYTHING NOT WANTED - RECYCLABLES, CLOTHING, TRASH)*
**EXCHANGE HUB SATELLITE**

**LIVE** | **LOBBY**
**WORK** | **EAT**

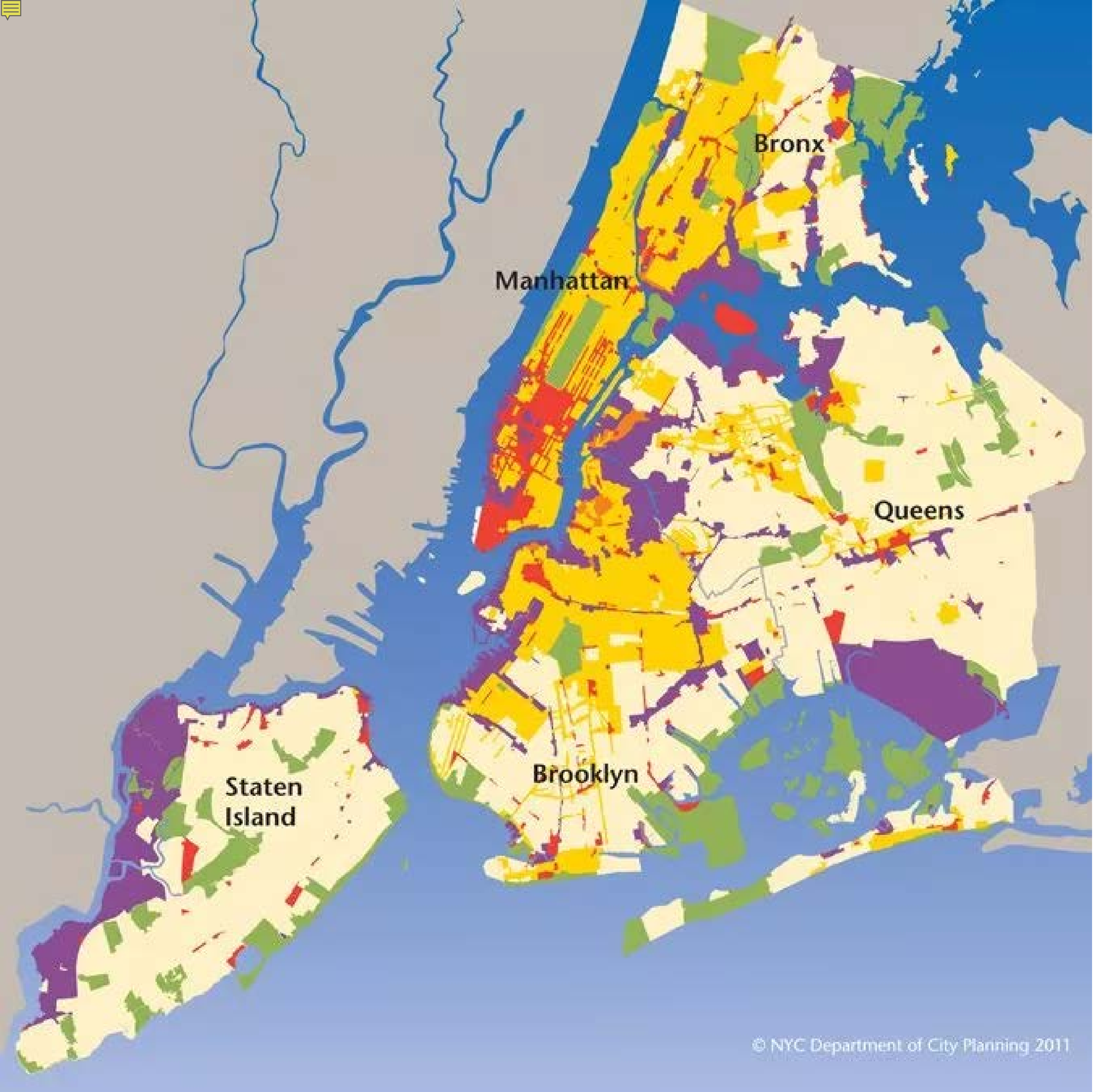
Building (only 1 shown on platform for clarity)

# FLOATING CITY MATERIAL FLOW DIAGRAM

Center for Zero Waste Design




AIANY Freight and Logistics Diagram from “Delivering the Goods”




One & Two Family

Multifamily

Commercial / Office

Manufacturing / Infrastructure

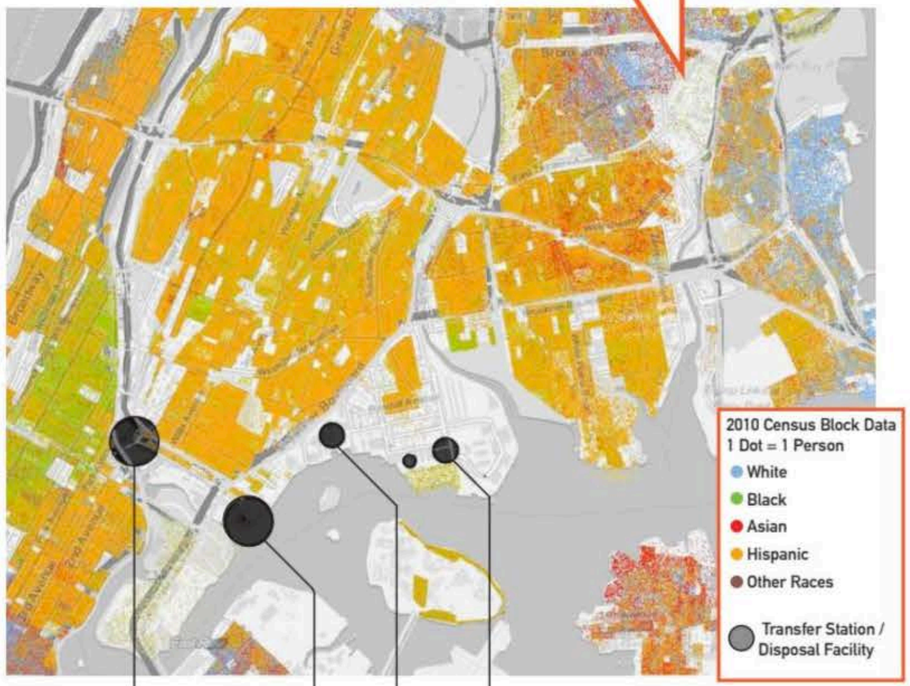
Open Space

# South Bronx

9 Transfer Stations handled 1,778,698 Tons of Solid Waste in 2017, the highest in the city

**South Bronx Area**
Population: 113,075
White: 1,769 (1.6%)
Black: 31,488 (27.9%)
Latino: 77,444 (68.5%)
Asian: 1,312 (1.2%)

Median Income: $22,826
Below Poverty Level: 42.9%
*Source: 2012-16 ACS, NYC DCP*




**WM Harlem River Yard**
**627,749 Tons**

**Action Environmental Services**
**566,402 Tons**

**Metropolitan Transfer Station**
**214,467 Tons**

**Environmental Transload Services**
**213,623 Tons**

*Population by Race Point Map : 2013, Weldon Cooper Center for Public Service, Rector and Visitors of the University of Virginia (Dustin A. Cable, creator) overlaid onto Carto Map by Author*
*Population Statistics by Census Tracts : 2012-2016 American Community Survey, NYC Dept of Planning*

*Figure 21. South Bronx Waste Transfer Stations and Demographics.*

# Atlantic Landfill

## Owned by Waste Management


Slated to receive entire 2019 Bronx MSW stream (approximately 420,000 Tons)

**Waverly, Virginia**
Population : 2,965
White: 899 (30.3%)
Black: 1,972 (66.5%)
Latino: 94 (3.2%)

Median Income: $35,956
Below Poverty Level: 9.8%
*Source: 2010 US Census Data*


*Population by Race Point Map (top): 2013, Weldon Cooper Center for Public Service, Rector and Visitors of the University of Virginia (Dustin A. Cable, creator), Satellite Map (bottom): GoogleMaps screenshot*

*Figure 22. Atlantic Landfill and Demographics.*

From: Exporting Accountability: Injustice in NYC Waste Flows by Tim Nottage

# Put Waste To Work

For Vibrant Streetscapes, Green Jobs and Healthy Neighborhoods

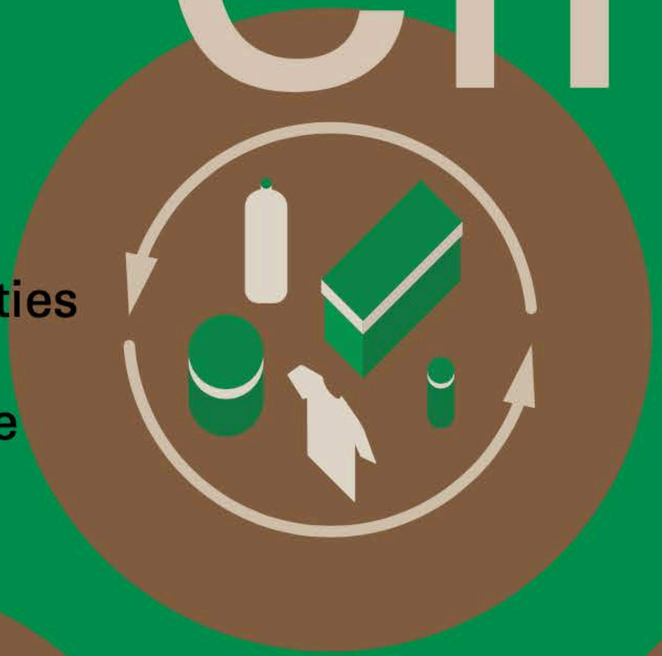
WXY + Center for Zero Waste Design

PutWasteToWork.org

# 1 Circulate

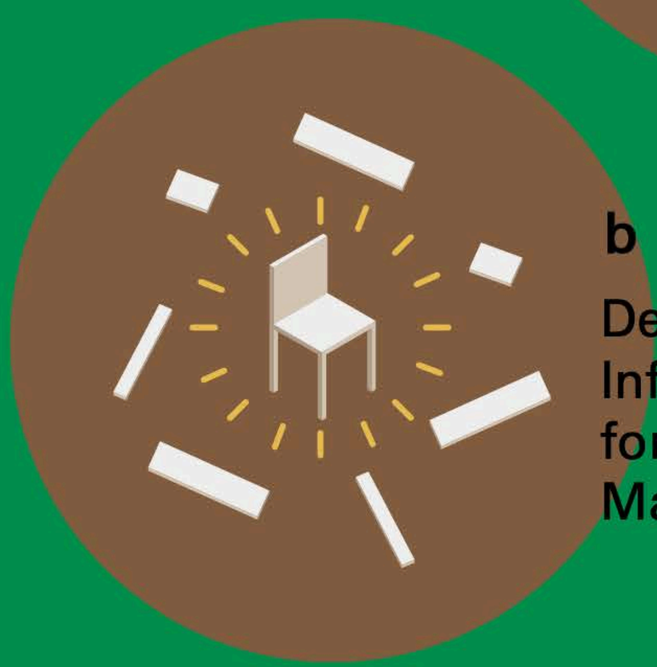
**a**

Promote Facilities for Salvage, Repair & Reuse



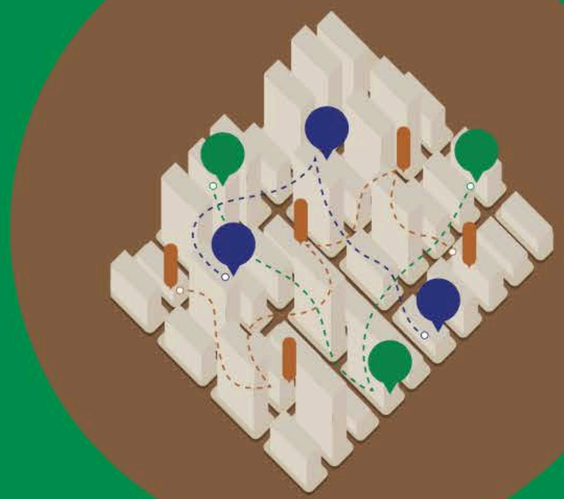
**b**

Develop City Infrastructure for Circular Material Flows



**c**

Integrate Planning for Deliveries And Waste



**d**

Incentivize Waste Reduction Through Policy Changes

# Zoning for circular systems


## USE REGULATIONS FOR GROUND-LEVEL FARMS

| Zoning* | Small (less than 10,000 SF) | Medium (10,000 SF - 1 acre) | Large (greater than 1 acre) |
|---|---|---|---|
| **Residential** (e.g., 1F, 2F, MFR) | Allowed | Allowed | Conditional Use |
| **Commercial** (e.g., L, LC, NS, B, CC, EDA) | Allowed | Allowed | Conditional Use |
| **Industrial** (e.g., I, M, LI) | Allowed | Allowed | Allowed |
| **Institutional** (e.g., IS, NI, CF) | Allowed | Allowed | Conditional Use |

*Zoning categories in this table and following tables are generalized. For specific zoning sub-districts, see Article 89, Appendix C.

# Model Composting Ordinance

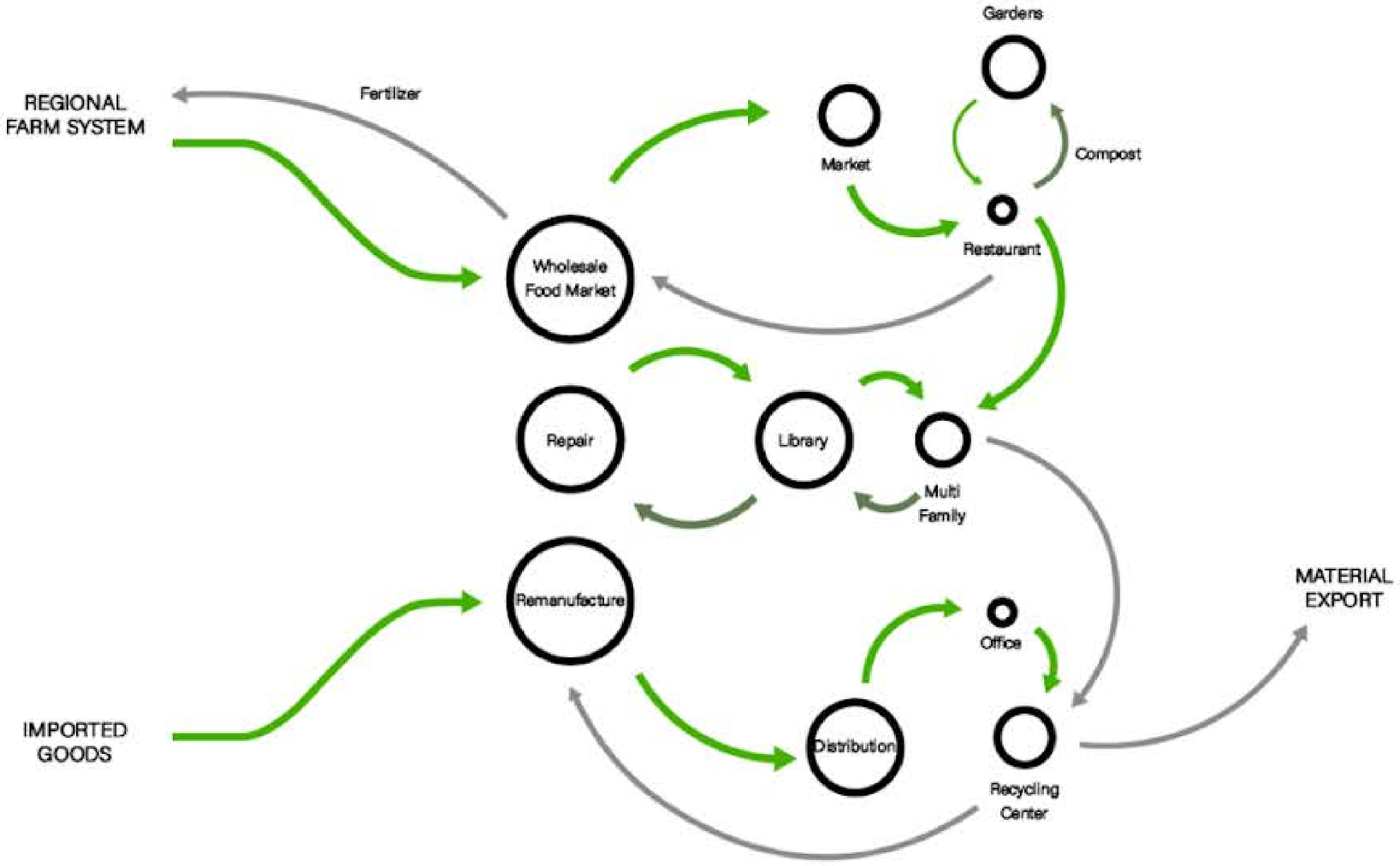
## for Community-Commercial-On Farm compost sites

US Composting Council

**A tool for local governing authorities to assist in determining appropriate regulations for composting**

**Allowable Composting Uses and Permit Requirements**

| Permit Types → | A = Allowed by Right | | | AU = Allowed as Accessory Use | | SP = Special Permit (Conditional Use) | | | N = Use Not Allowed | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Land Use Permit Required by Zoning Classification | | | | | | | |
| Zoning Classification → | | | Industrial | | Residential | | | Agricultural | | Commercial |
| Land Use ↓ | Manufacturing Heavy | Manufacturing Light | | Manufacturing General | Rural | 1-3 Family | Multi-family | Mixed Use | Manufacturing Supplies and Services | Urban Farming | Food Scraps Generating Establishments |
| Large Composting | | | | | | | | | | | |
| Open air - Landscaping residue and similar materials only | A | SP | | SP | N | N | N | N | SP | N | SP |
| Open air - Other materials according to state permit | A | SP | | SP | N | N | N | N | SP | N | SP |
| In-vessel systems (materials according to state permit) | A | SP | | SP | N | N | N | N | SP | N | SP |
| Enclosed building (materials according to state permit) | A | A | | A | N | N | N | N | SP | N | SP |
| Small Composting | | | | | | | | | | | |
| Open air - Landscaping residue and similar materials only | A | A | | A | SP | N | N | N | A | SP | AU |
| Open air - Other materials according to state permit | A | A | | A | SP | SP | SP | SP | A | SP | AU |
| In-vessel systems (materials according to state permit/exemptions) | A | A | | A | SP | SP | SP | SP | A | A | AU |
| Enclosed building (materials according to state permit/exemptions) | A | A | | A | A | SP | SP | SP | A | A | AU |
| On Farm Composting | | | | | | | | | | | |
| Open air, In-vessel systems - Materials according to state environmental regulations | N | N | | N | N | N | N | N | A | A | N |
| Enclosed building - Materials according to state environmental regulations | N | N | | N | N | N | N | N | A | A | N |



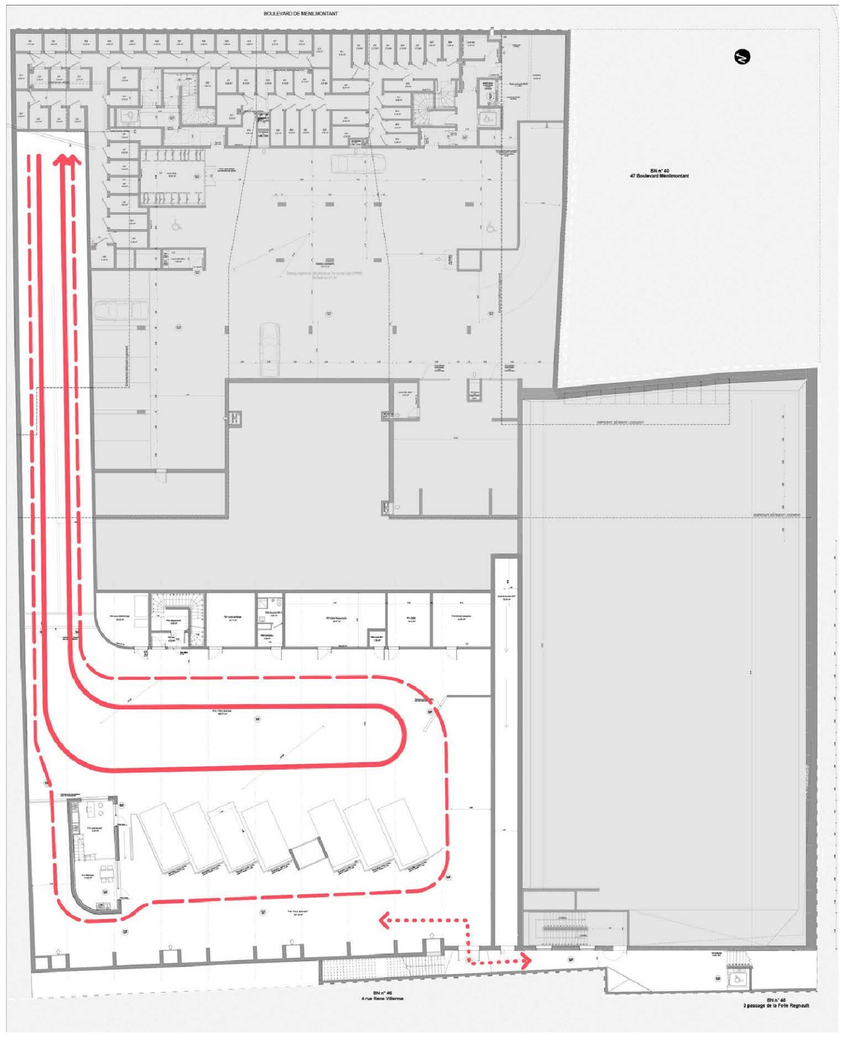

**CIRCULAR MATERIAL MOVEMENT**

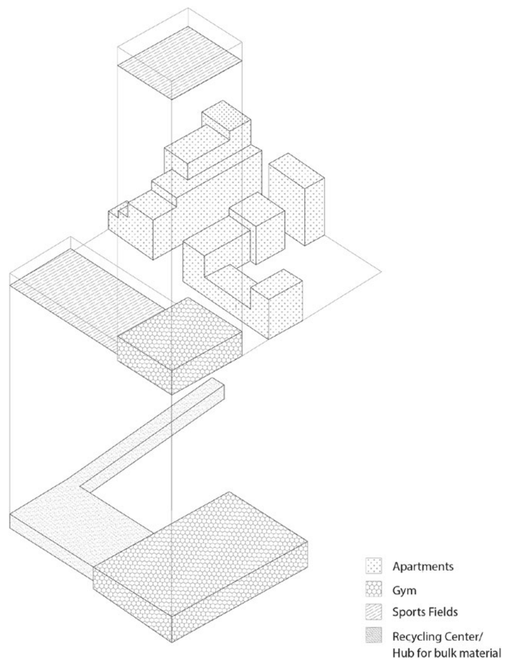
# New buildings to provide facilities

## Ménilmontant, Paris

**Type**

Recycling center and relay point for bulk collection hosted on private property




Clockwise from top: Section perspective showing vehicles driving into the recycling center adjacent to the gym; Diagram showing the various program elements; View showing pedestrian-oriented context

# To repair, grow, make, cook, mend…


# PARTICIPATORY CITY

## EVERY ONE EVERY DAY ECOSYSTEM

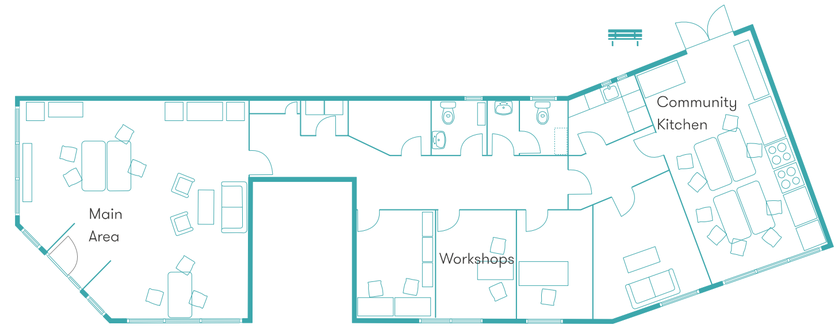
A person-centred approach to learning and development - growing confidence, skills and aspirations.

Coming in to chat in on of the local shops.

Participating in 250+ practical neighbourhood projects.

Initiating new neighbourhood projects.

Developing new livelihoods and creating new Collaborative Business.




250
Square Meters

10
Number of Rooms

Office Space

Main Area

1
Number of Floors

Workshop

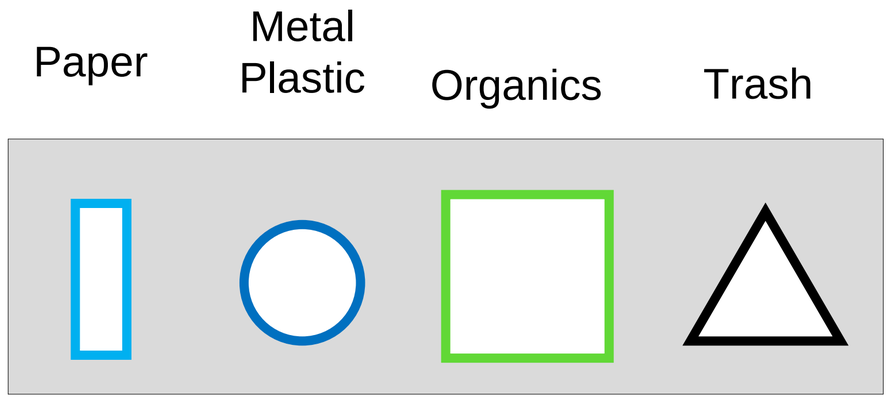
Kitchen

Outside Seating Area

# Borrow


TORONTO'S
Library of Things
The SHARING DEPOT
AND MAKERSPACE
ACCESS. SHARE. INNOVATE.
We Buy Records
1809
1803
TORONTO TOOL LIBRARY

# Redesign waste bins


# What goes where?





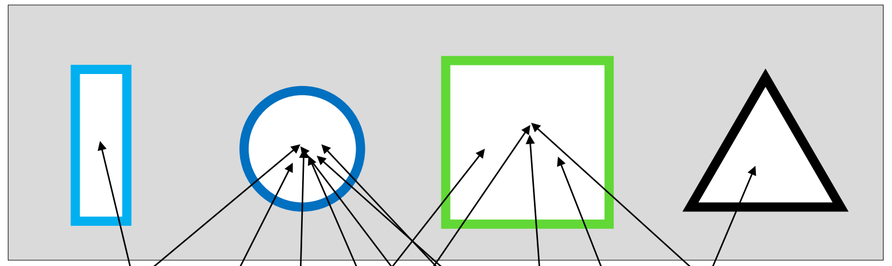



Paper

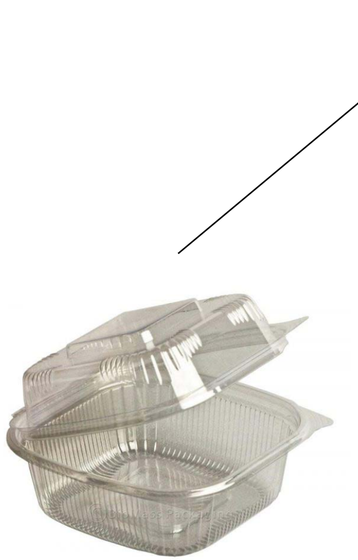
Metal
Plastic

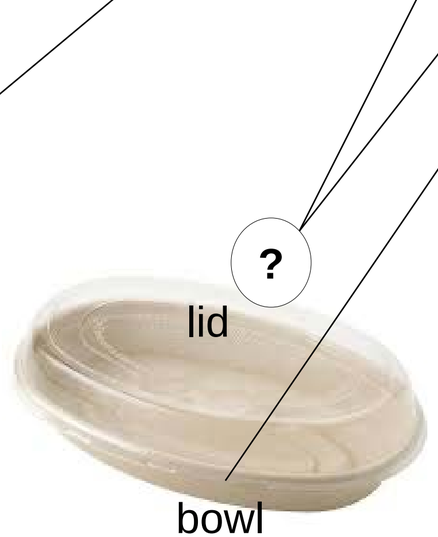
Organics

Trash



? Depends if compostable or plastic





?

lid

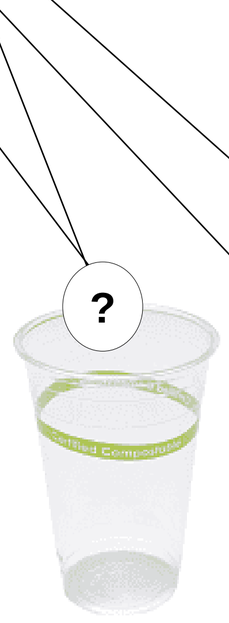
bowl

lid

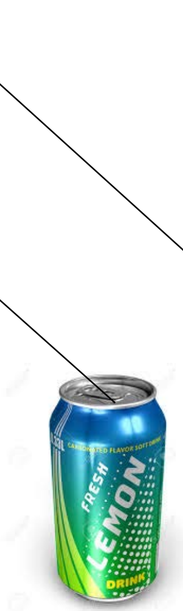
sleeve

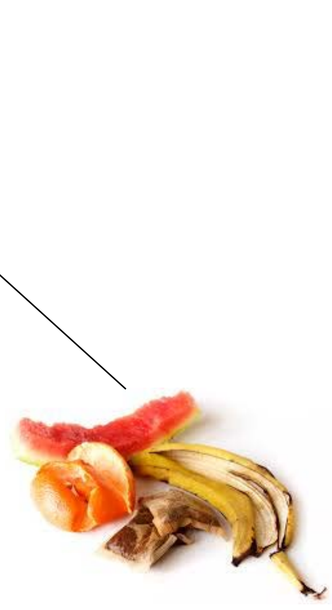
cup

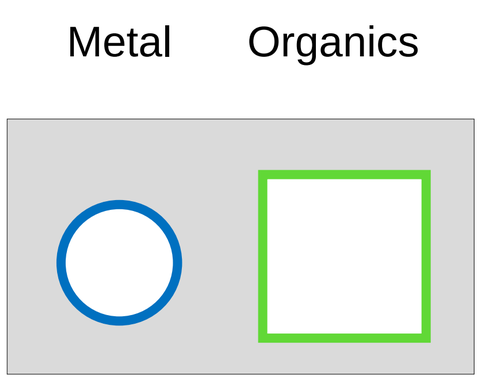
?



?



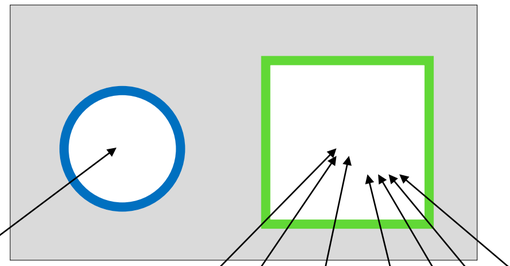



# Control Products – All Compostables





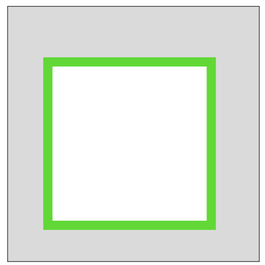

Metal Organics



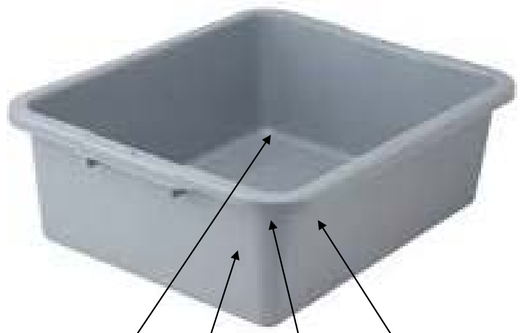


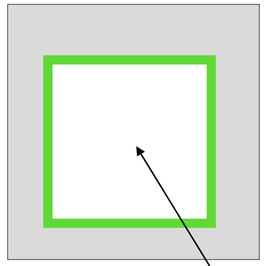


Organics



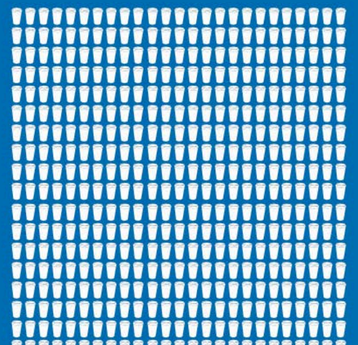
Organics



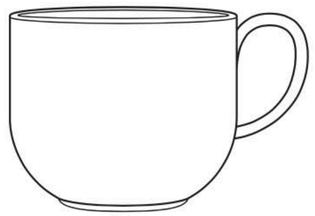


# Reuse Wins

**Using 500 paper cups consumes nearly 370 gallons water**



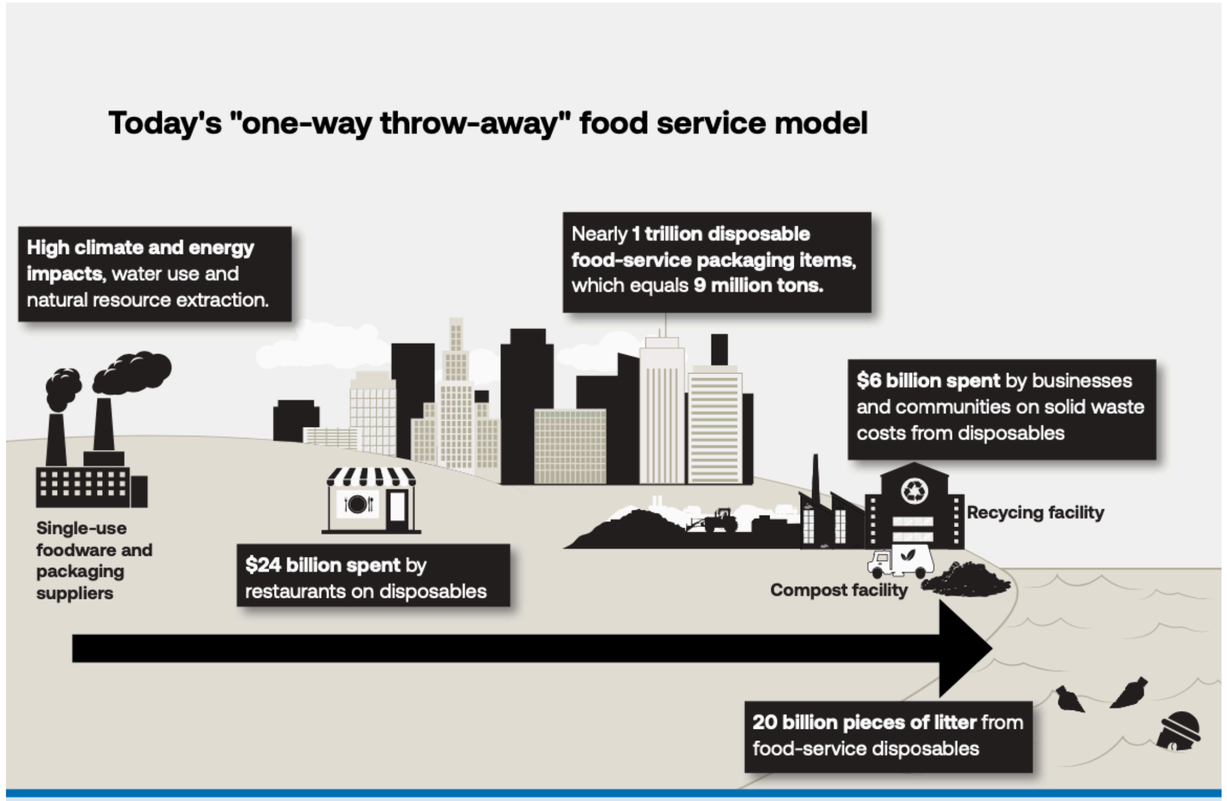
**Using and washing one ceramic cup 500 times consumes only 53 gallons of water.**



**Reuse saves businesses money for on-site dining 100% of the time.**

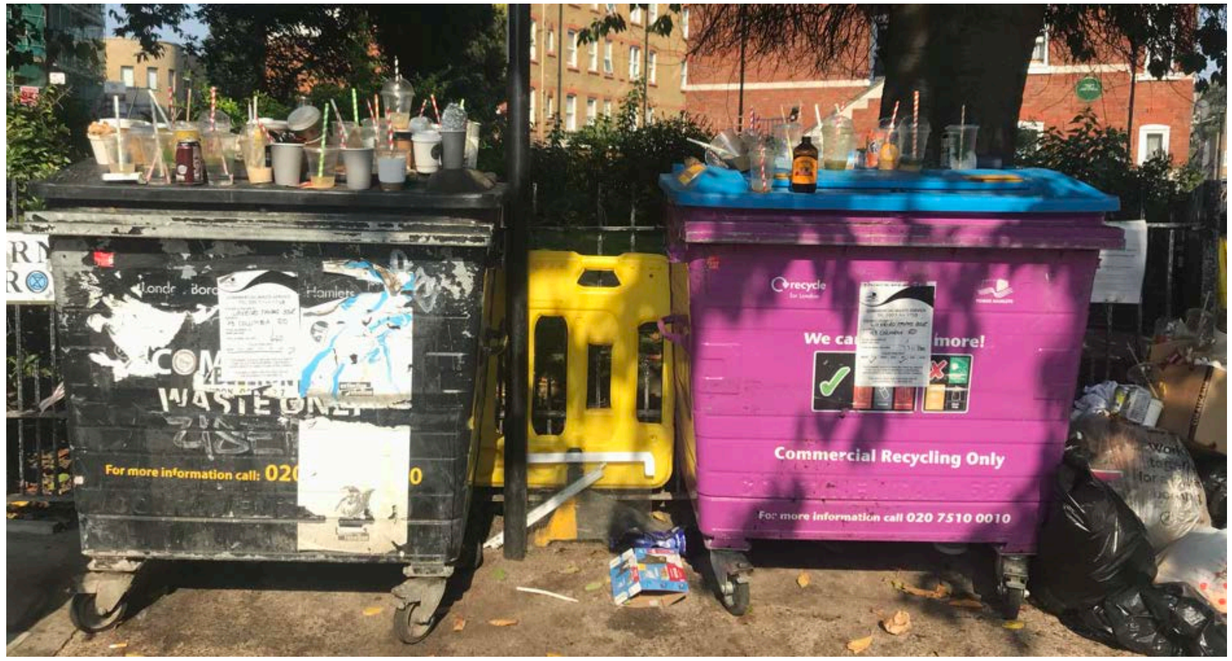
**Average savings for a small business:**

- **$3000 - $22,000 cost savings**
- **1,300-2,200 lbs. of waste eliminated**
- **110,000 to 225,000 packaging items eliminated**





Reuse Wins Report  by Upstream


recycle
We ca more!
Commercial Recycling Only
For more information call 020 7510 0010
For more information call: 020


Keep New York City Clean


Got Trash?
Please deposit trash here. No hot coals.

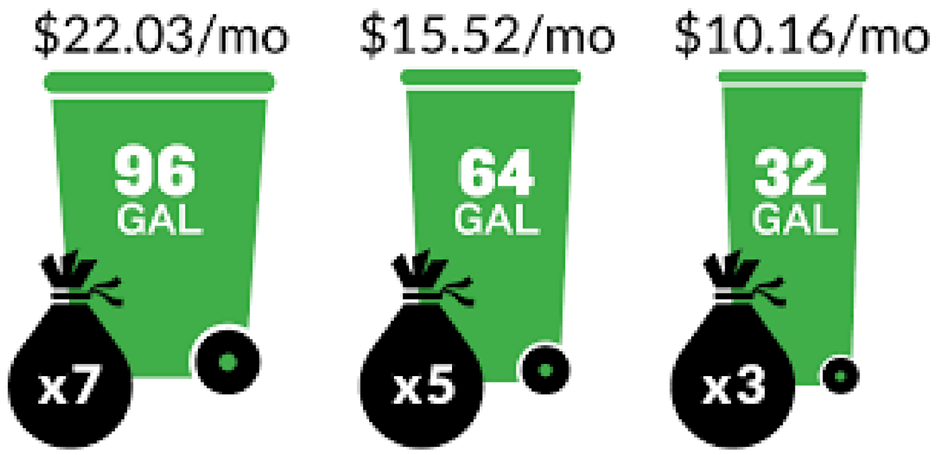
# Reusable Waste Station Design






# Save as you Throw

- **Service cost visibility**
- **Waste reduction and diversion – average 17% reduction after implementation**
- **Independent access to capital**
- **Fairness – save money if less wasteful**



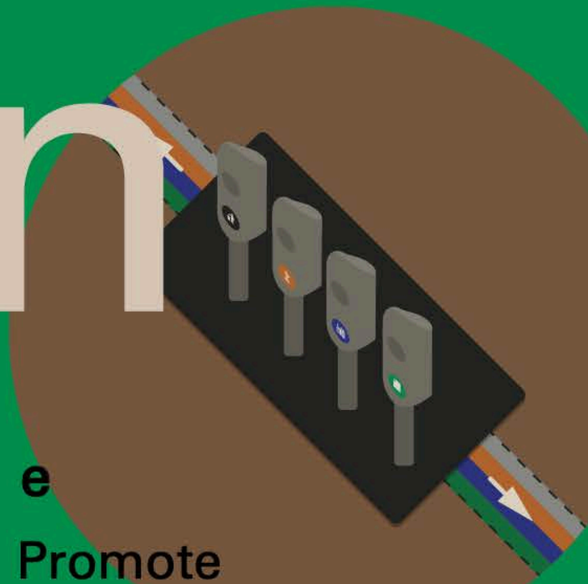

# 2 Contain

**a**

Rationalize Collection Schedules


**c**

Collect Containers of Waste using Semi-Automated Trucks

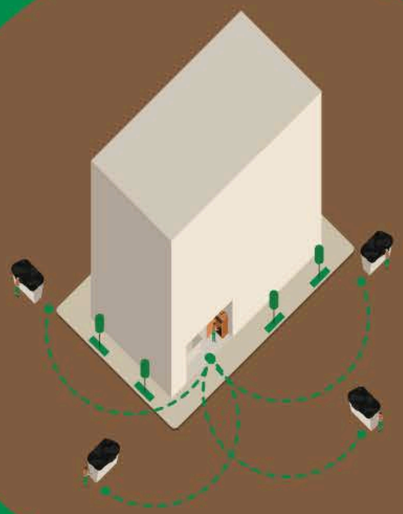


**e**

Promote Pneumatic Tube Networks

**b**

Promote Equipment to Reduce the Volume of Waste

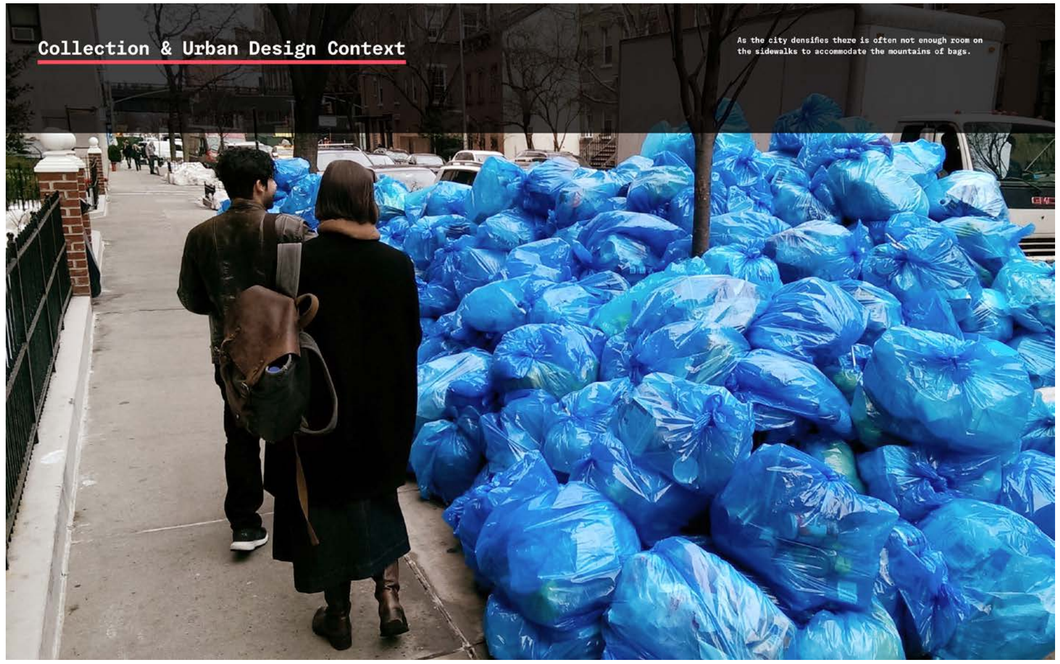


**d**

Provide Neighborhood-Scale Collection


McNeilus
25DN-619
M.1

## Collection & Urban Design Context



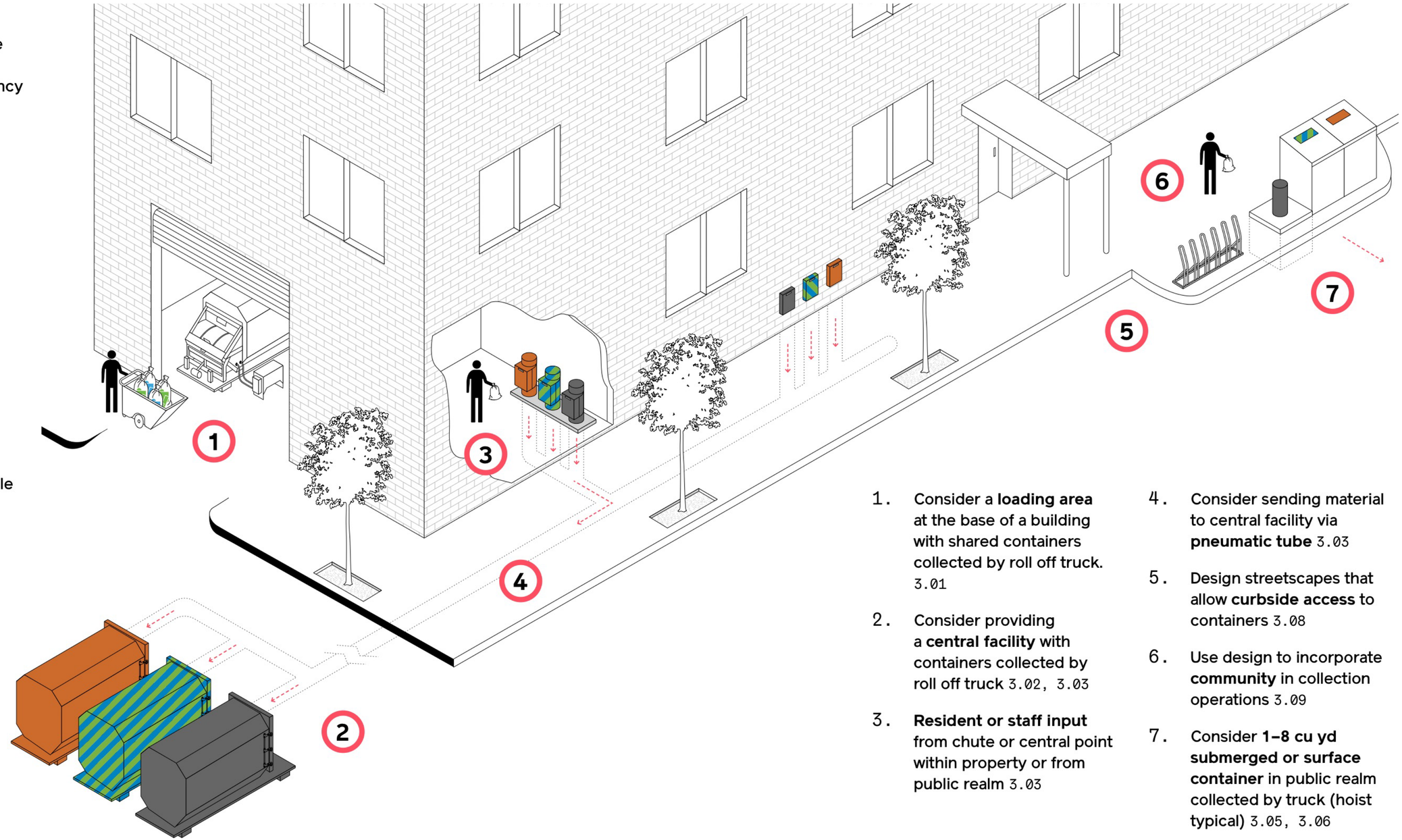
As the city densifies there is often not enough room on the sidewalks to accommodate the mountains of bags.


# Shared collection

### Surface containers
- Least costly and most flexible
- Storage capacity is limited, increasing collection frequency
- Truck access is required

### Submerged containers
- More costly and require coordination with below surface conditions
- Free up space at surface
- Truck access is required

### Pneumatic networks
- Most costly
- Requires coordination with below surface conditions along entire tube path as well as construction of a collection station
- Capacity is highest because inlets may be emptied multiple times in a day
- No truck access needed, except at collection station




1. Consider a **loading area** at the base of a building with shared containers collected by roll off truck. 3.01
2. Consider providing a **central facility** with containers collected by roll off truck 3.02, 3.03
3. **Resident or staff input** from chute or central point within property or from public realm 3.03
4. Consider sending material to central facility via **pneumatic tube** 3.03
5. Design streetscapes that allow **curbside access** to containers 3.08
6. Use design to incorporate **community** in collection operations 3.09
7. Consider **1–8 cu yd submerged or surface container** in public realm collected by truck (hoist typical) 3.05, 3.06

# NYC initiatives


DOT curbside use diagrams includes community waste facilities

sanitation

About | Services | Resources | Our Work | C

Home / Our Work /

## Clean Curbs Pilot Program

## EXCLUSIVE: City Takes Major Steps to Get Garbage off the Sidewalk

By Gersh Kuntzman | Mar 11, 2020 | 35 COMMENTS


This could be the new way garbage is picked up in New York City. Photo: Marvel Architects and Recycle Track Systems, in partnership with Sam Schwartz Engineering and HR&A Advisors

# Paris initiatives


Trash curbside daily

Food scraps 2/week

Trash and food scraps curbside collection


Tri'lib, Paris - Pilot of 40 stations

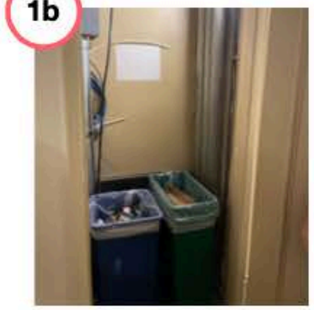

Procurement of 1000 stations

# NYC typical building

1a

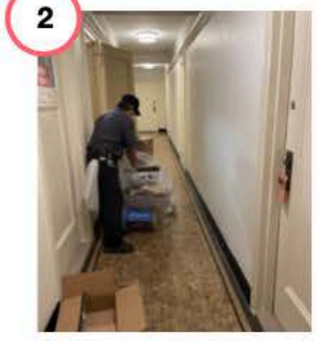
Chute

1b

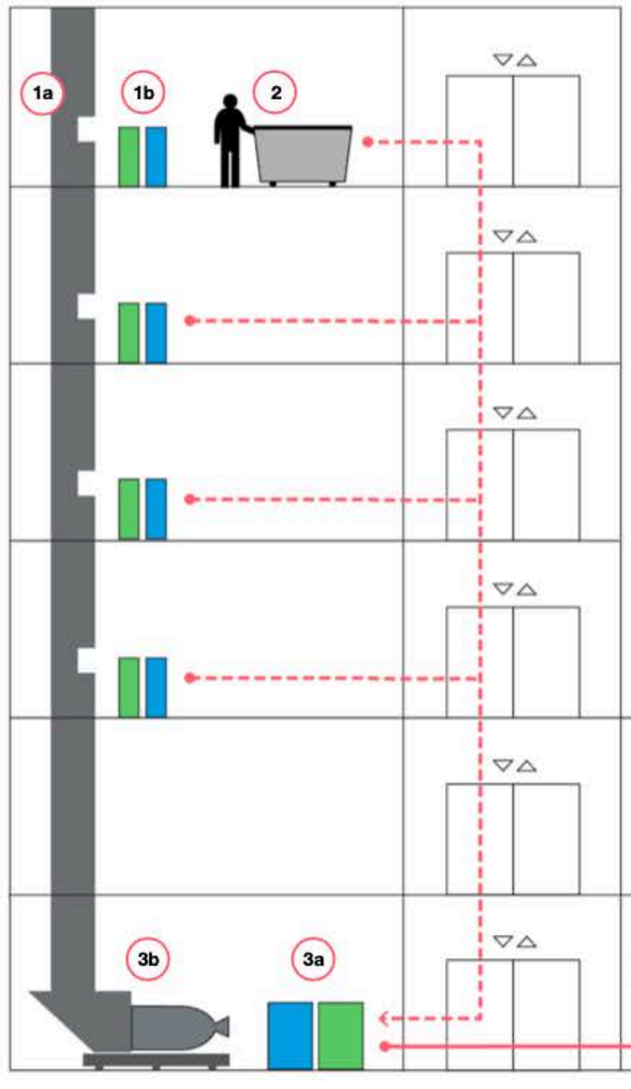


Recycling Closet

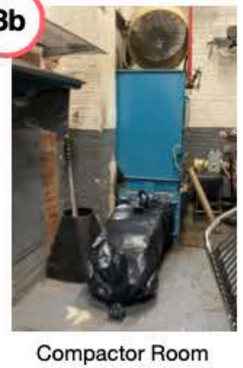
2



Worker collecting recyclables

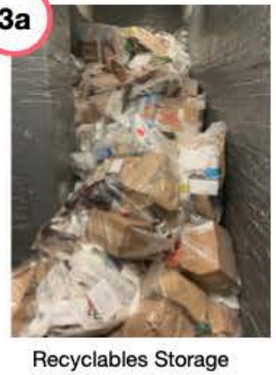



3b



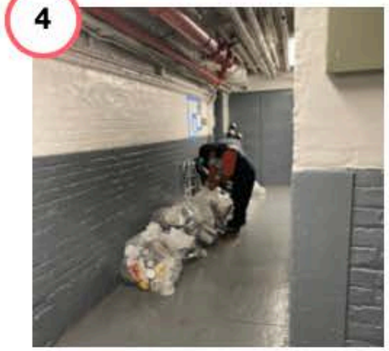
Compactor Room

3a



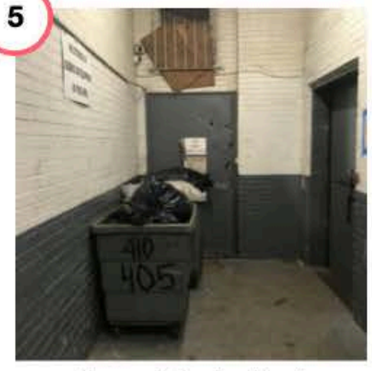
Recyclables Storage

4



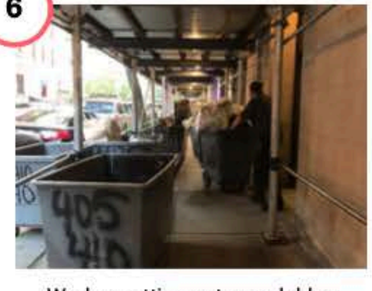
Waste staged in corridor

5



Transport to street level

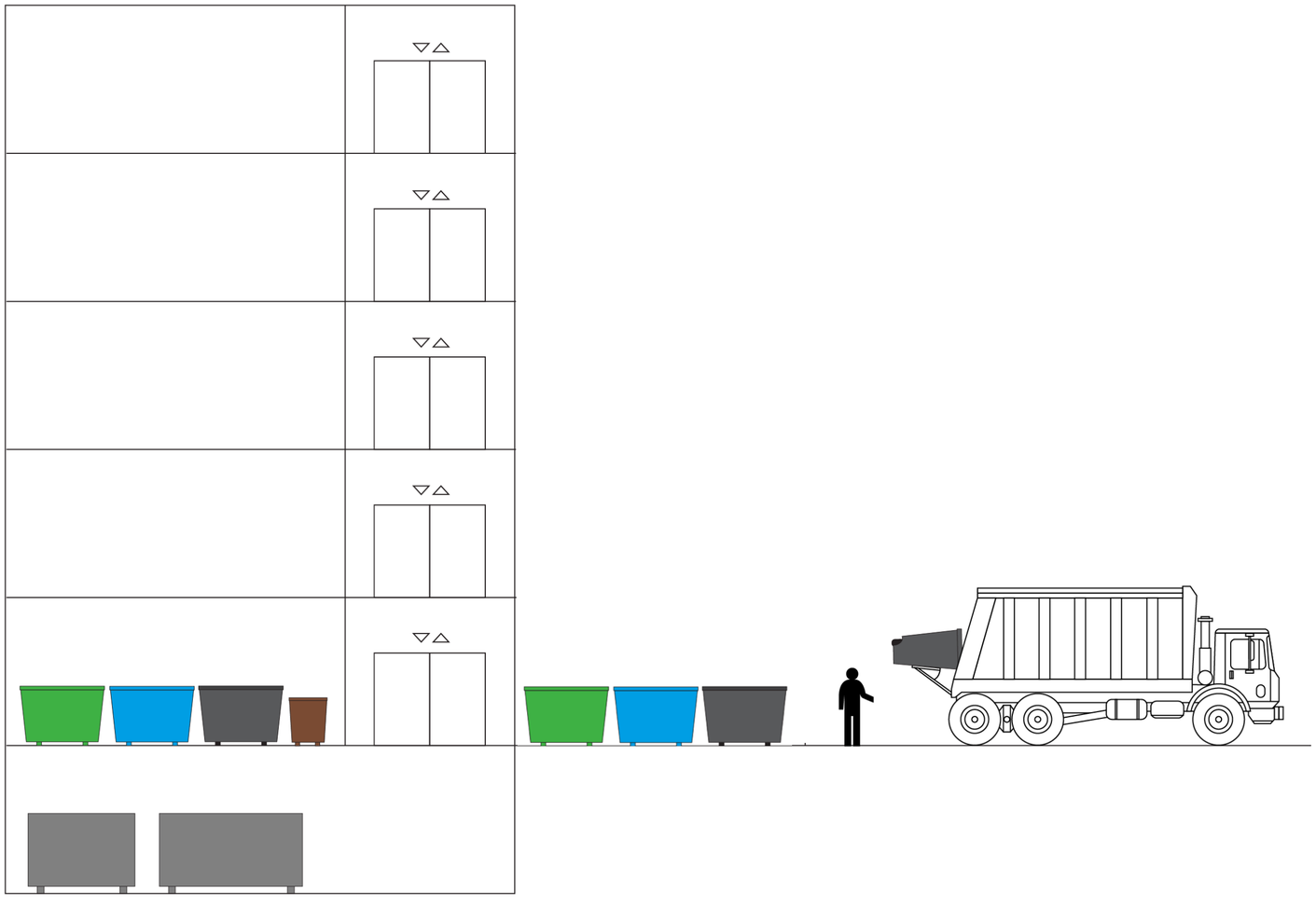
6



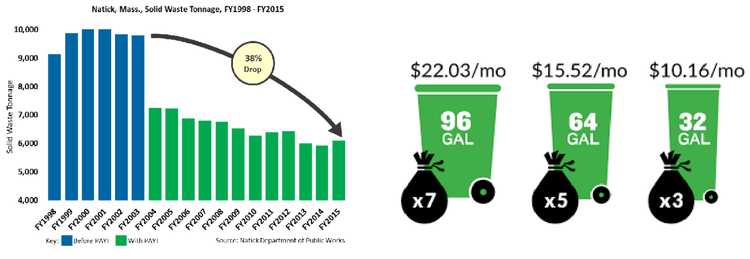
Worker setting out recyclables with tilt trucks and hampers

# Central waste room

- More waste streams accomodated
- Less labor required
- Easier to implement Pay-as-you-throw
- Allows transition to circular material use models – reusable packaging, take-back for repair, loans
- Easier for wheeled containers



**Metering Waste: Pay As You Throw**



# 3 Compost

**a**

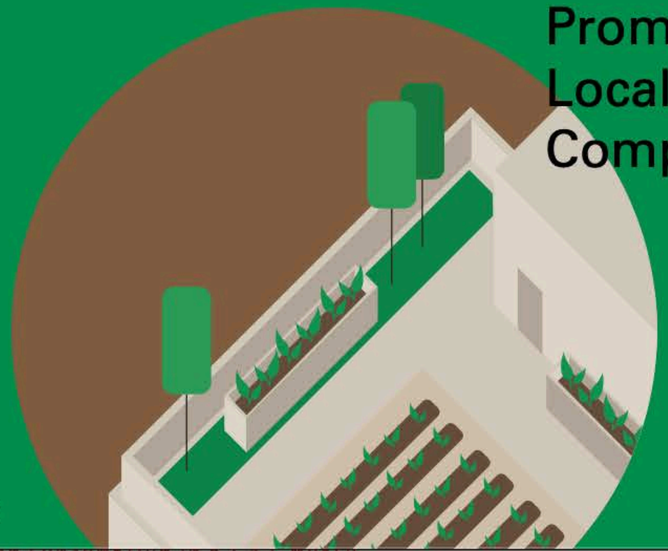
Support Small-Scale Composting to Regenerate City Soils

**c**

Develop a Network of Organic Waste Options

**b**

Promote Local Use of Compost



**d**

Expand Opportunities for Green Space Stewardship

# NYC Compost Project

NYC Compost Project also includes support for onsite composting through Master Gardeners in Brooklyn, Queens & Snug Harbor Botanic Gardens

Thousands of New Yorkers drop off their food scraps at farmers markets and other community sites across all 5 boroughs



Transported to five NYC Compost Project sites

Leaves and landscape waste from city parks

**Composting Sites**

Lower East Side Ecology Center

Big Reuse Queensbridge Park

Big Reuse Gowanus Salt Lot

Earth Matter, Governors Island

Red Hook Community Farm

**3 of the 5 sites are on Parks Dept Land**

The compost is used to make NYC greener, healthier, more sustainable & resilient

Street tree beds

Local parks

Compost give back to community groups

Urban farms

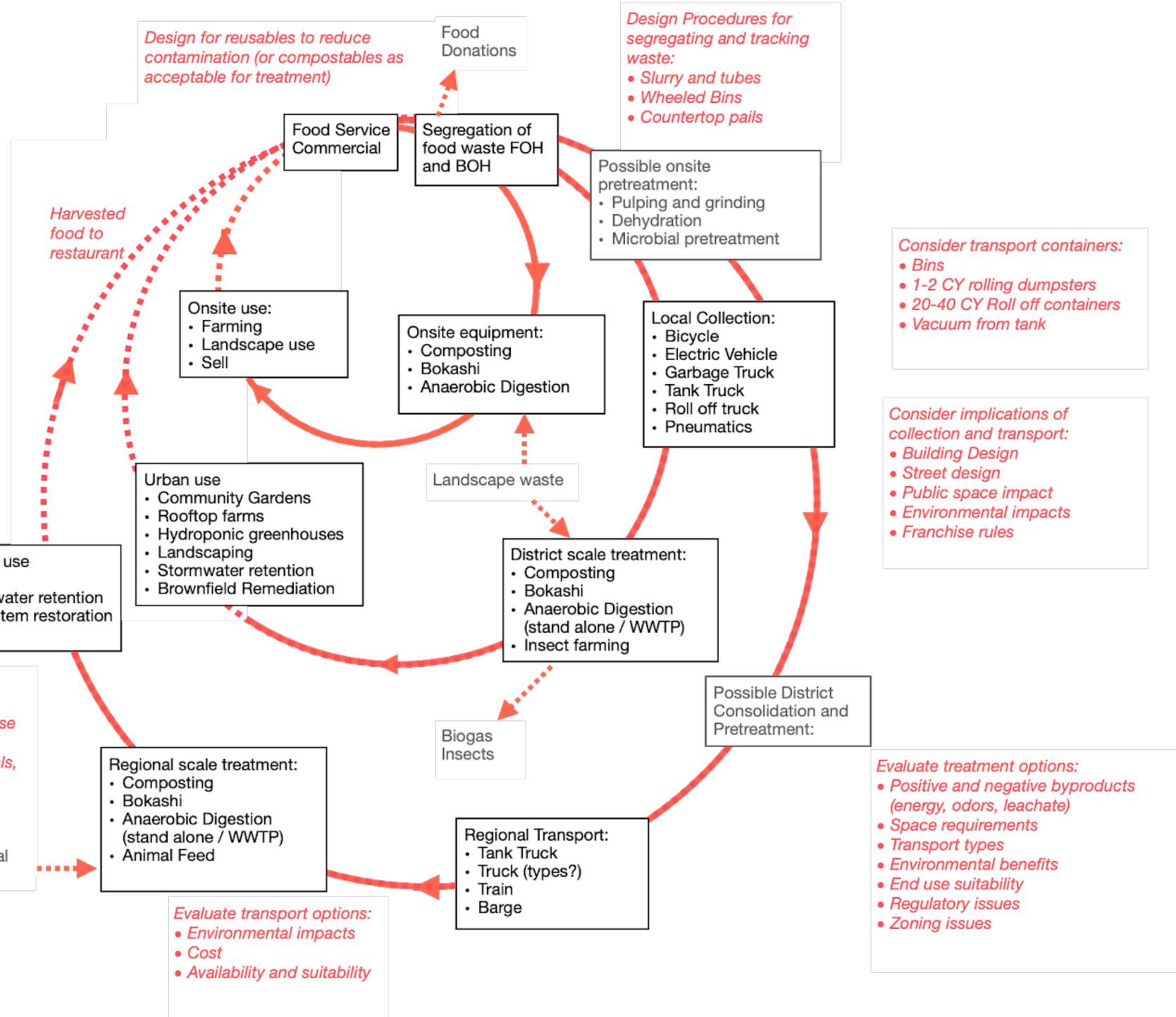
Local produce

# East River Coastal Resilience Park

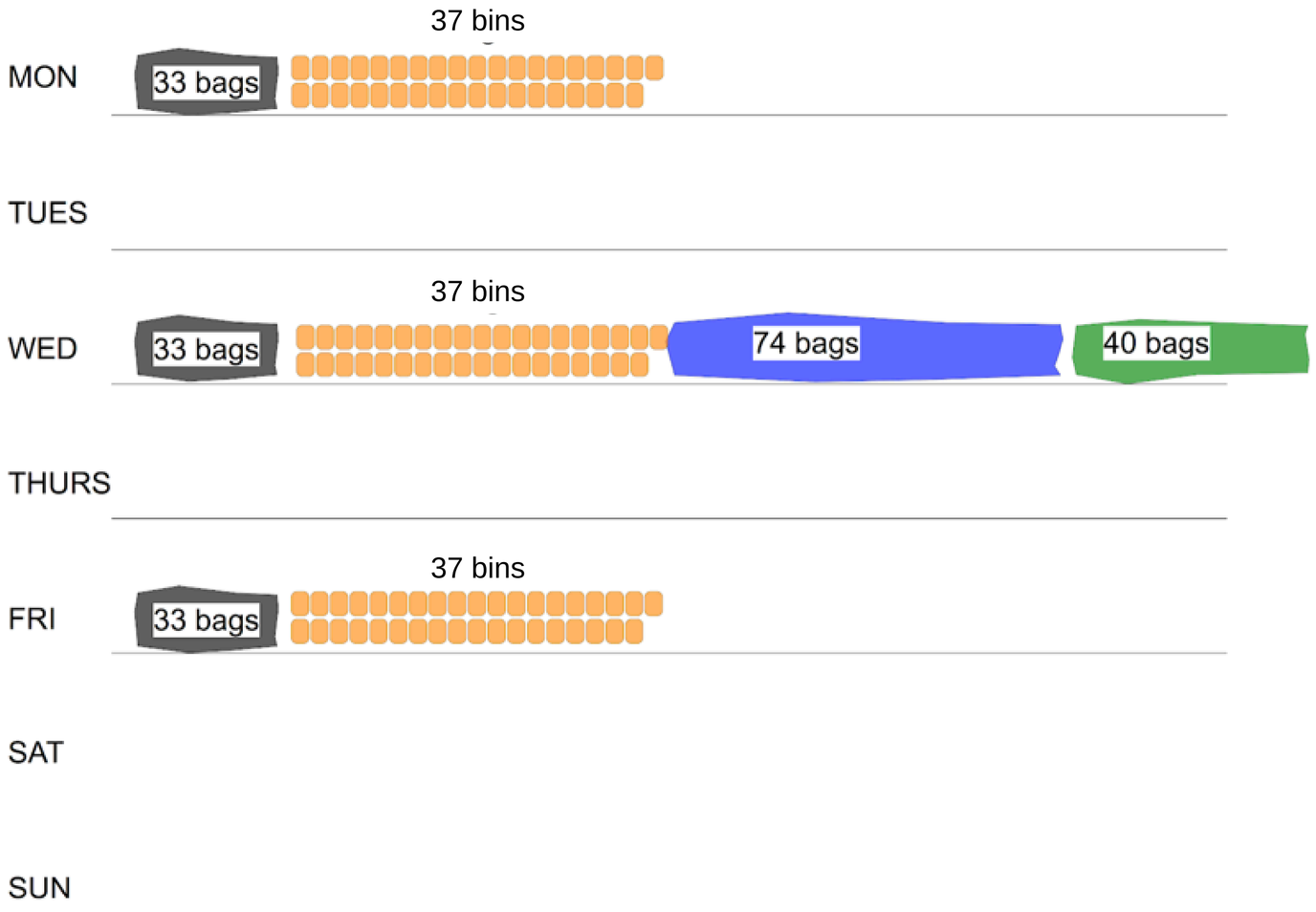


# Biocycles

- Site
- District
- Region

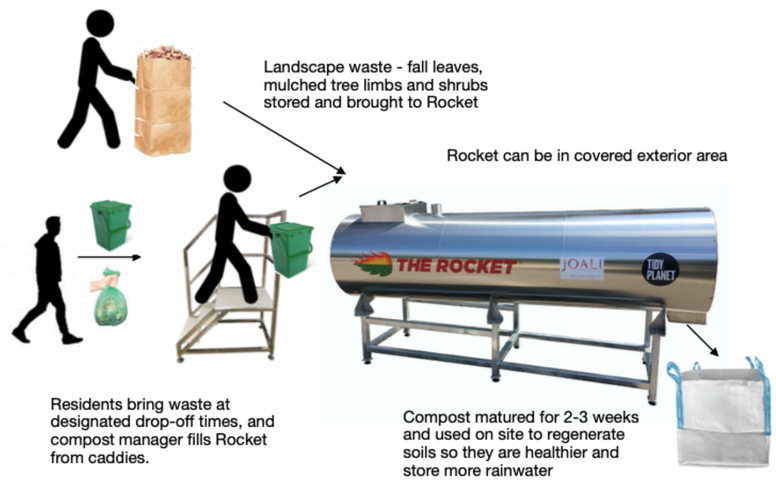


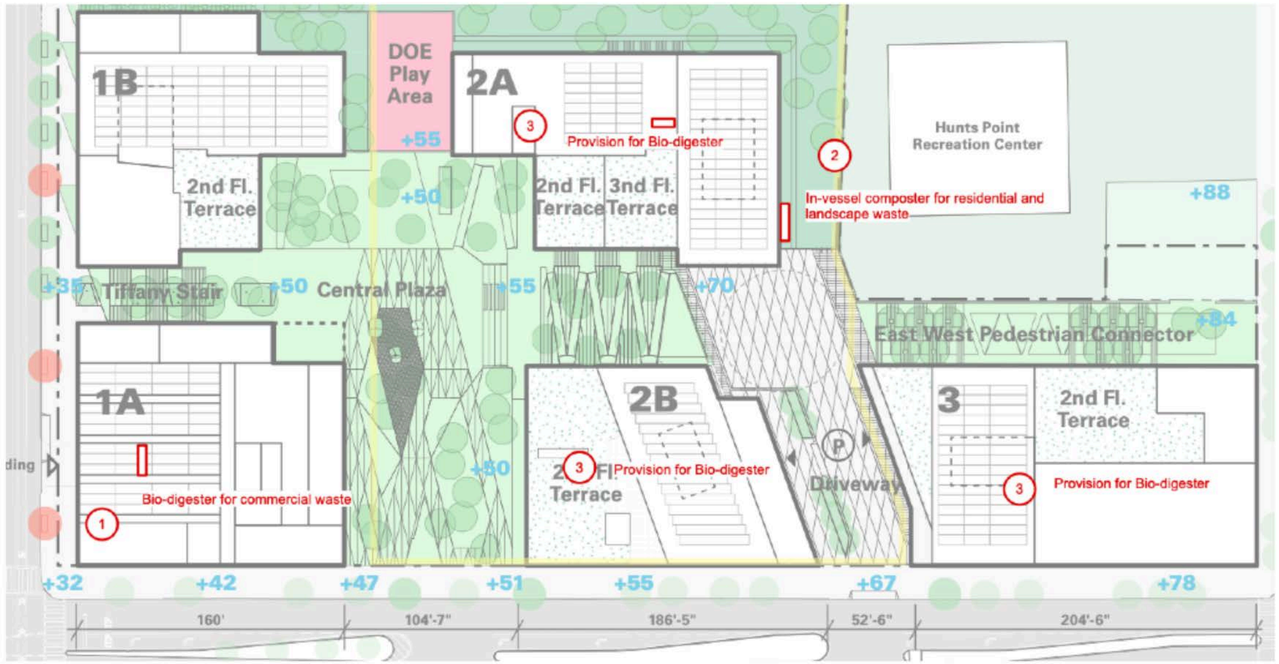
# NYC Curbside Organics Collection



# The Peninsula, Bronx NY

- 734 residential units
- Food incubator, retail, community facilities

# Domino Park, Brooklyn NY



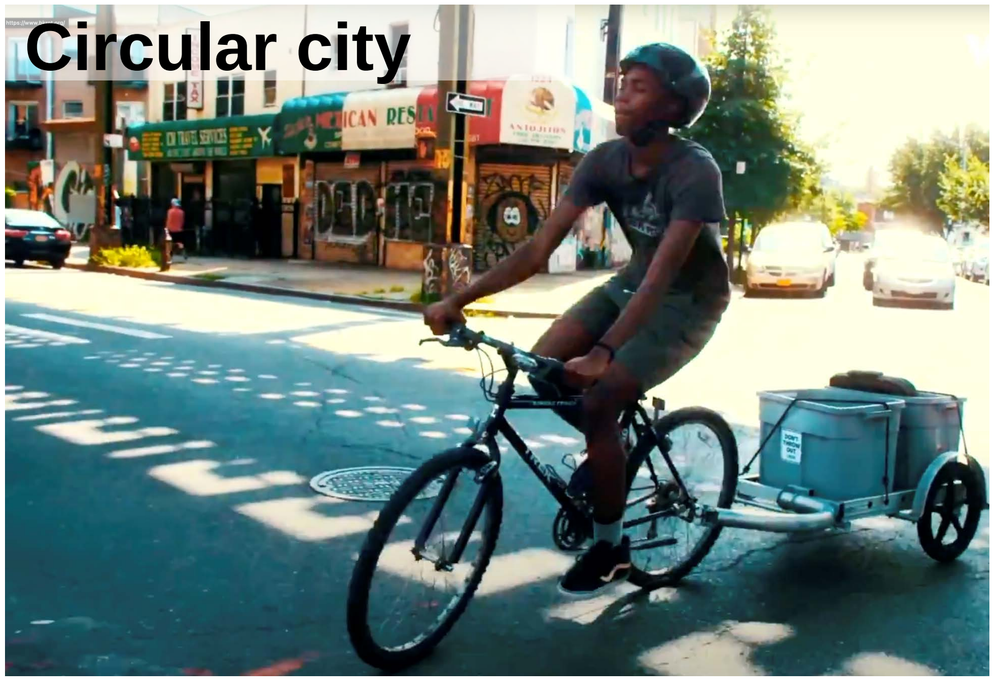
# Linear city


Mini storage facilities




Fulfillment facilities

# Circular city



...helping NYC reduce the costs of waste export and achieve livability, equity, resilience and climate goals.