

TRASH STUDIO

MADE IN LAUSANNE



MEDIA X DESIGN LABORATORY SPRING 2025

The Spring 2025 atelier “Trash Studio” is a radical design studio that deconstructs Lausanne’s urban landscape, exposing the hidden flows of waste and consumption that underpin capitalist production.

In the realm of architecture, re-use, recycling, upcycling are increasingly addressed, yet often operate in the limited context of materials, structural elements, and furnishings. Though construction is a large contributor to global waste and an important issue to tackle, the question of household waste remains relatively unexplored.

According to averaged statistics, an individual produces around 400 kg of waste per year. This accumulation can lead to a variety of issues, from impacting health and environmental quality, accelerating climate change, and polluting land and water reserves. It will be crucial in the coming years to explore how urban planning and architecture can address this ordinarily invisible underlying flow, inextricable from our urban environment.

What can household waste flows tell us about how we inhabit? How to not only reduce, but reuse what is usually discarded, destroyed, forgotten? How can the architectural project tap into hidden urban flows, and contribute meaningfully to citizen’s futures?

By integrating waste with urban communities, commercial interests, and the ecology of the city, there is potential to radically question how our waste can be reintegrated into the cycles that govern urban life, and move toward a more circular city.

The studio challenges students to (1) critically analyze and map the city’s infrastructure of waste as a reflection of the city’s consumption practices, and (2) design precise, decentralized, architectural interventions in the city, such as strategic trash kitchens and maker kitchens, to confront and subvert the existing structures, creating alternative models for local circular economies.

*

This intense studio will use advanced digital tools, such as software, scripts and plugins for mapping and geodata analysis (Rhino & Grasshopper, QGIS), as well as offer guidance in the exploration of GenAI tools and varied techniques of digital representation (such as Midjourney, Stable Diffusion, Blender, etc.)

No prior programming or software knowledge is required, however, there should be curiosity and strong motivation to learn.



Scheibe & Güntzel
PLASTISPHERE, 2016



Vincent Skoglund
The Waste Management Series, 2015



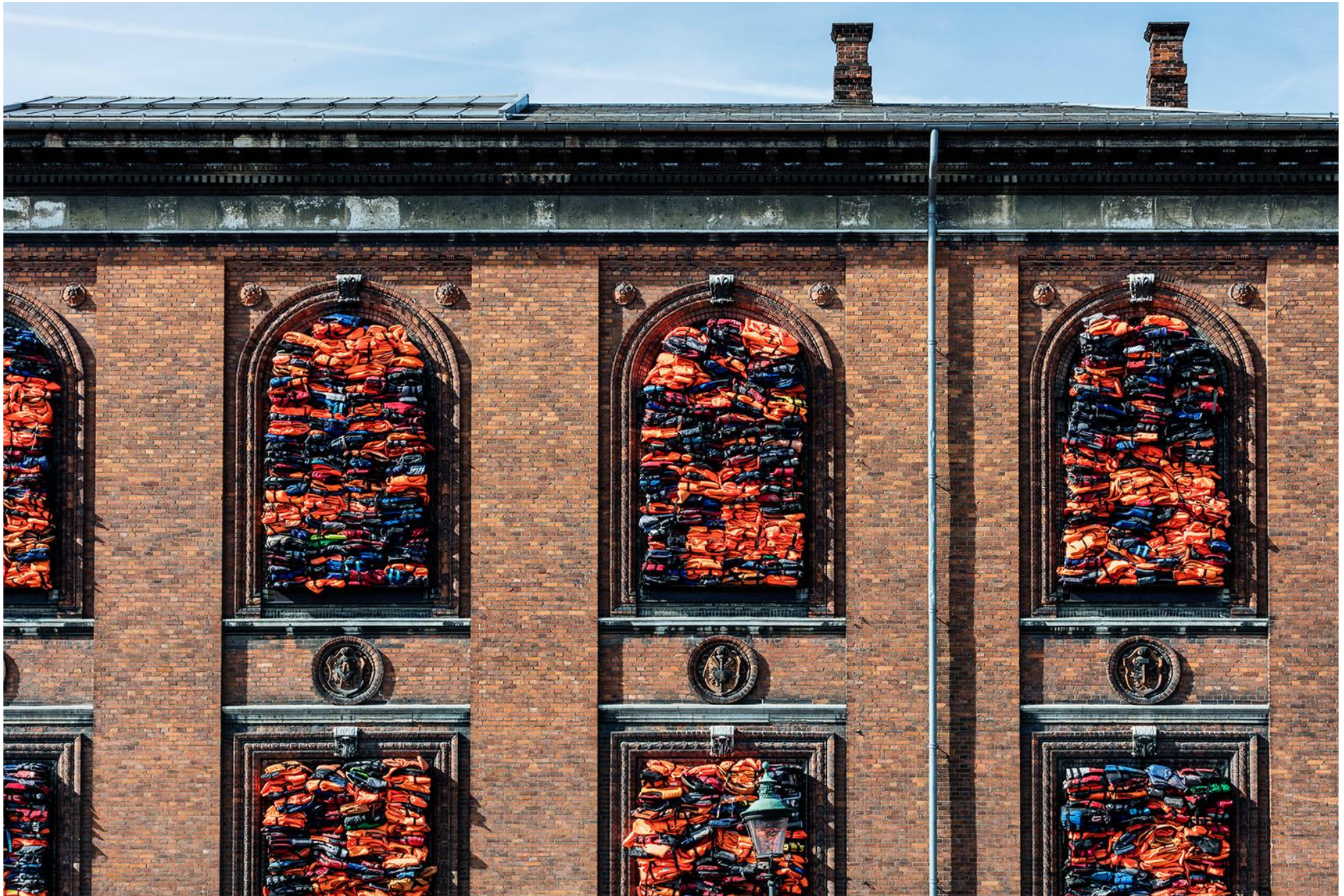
Jan Liesegang, Markus Bader
HOUSE OF CONTAMINATION - 2010



Jan Liesegang, Markus Bader
HOUSE OF CONTAMINATION - 2010



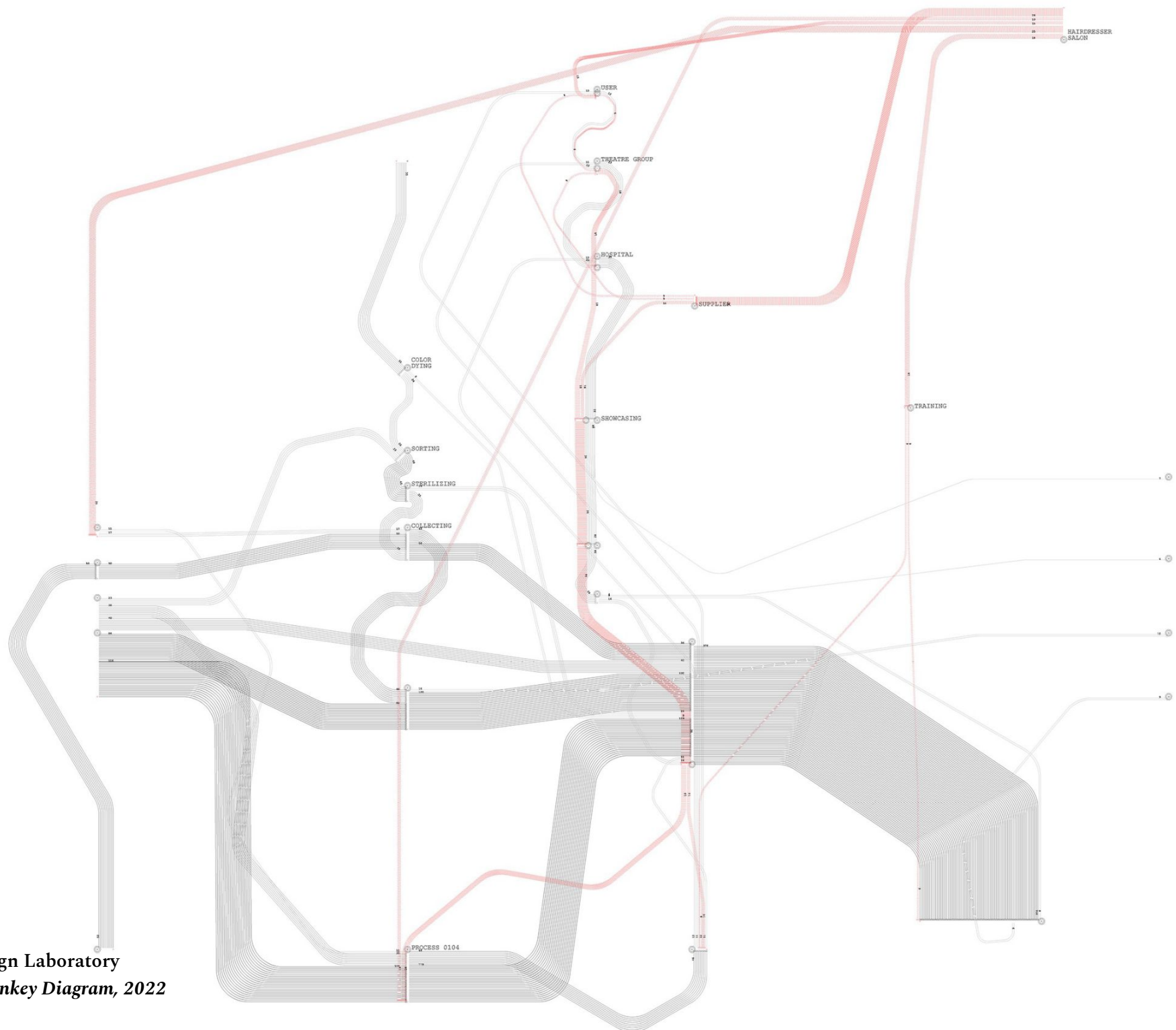
Peter Fattinger, Michael Rieper, Vienna University of Technology
SELFWARE.surface - Graz, 2003



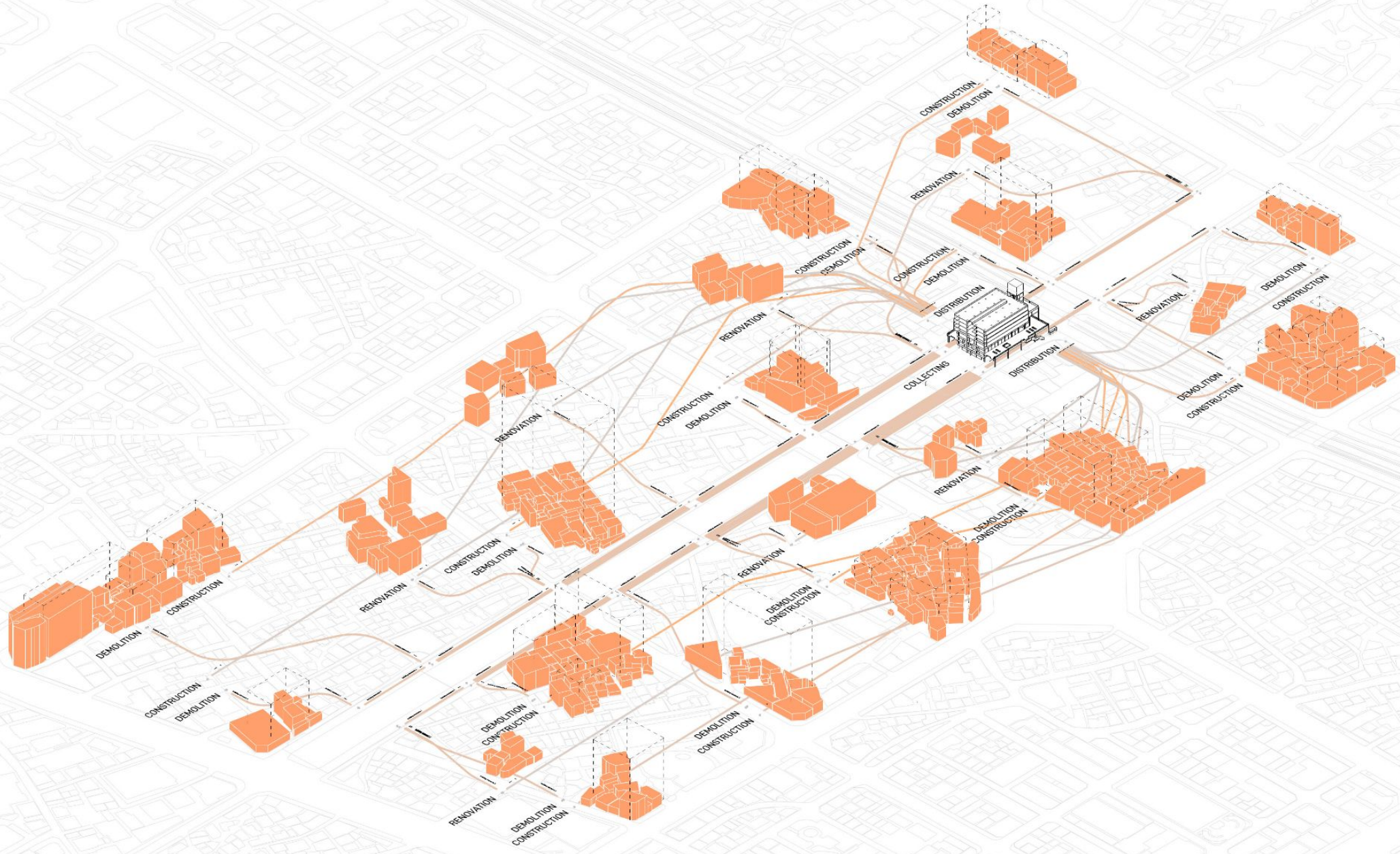
Ai Weiwei
Soleil Levant, Kunsthal Charlottenborg, 2017



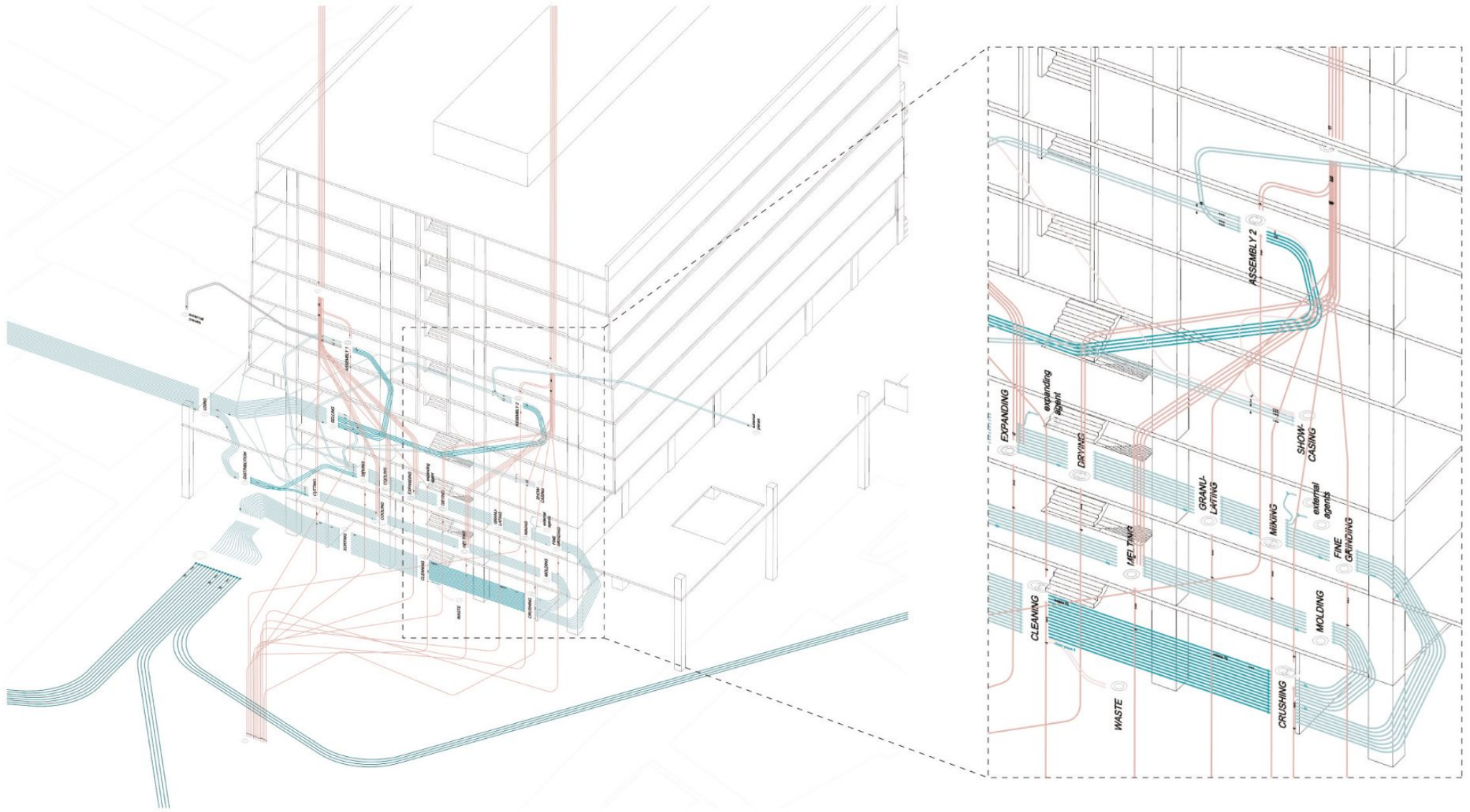
The Telegraph
Re(bi)cycle - Zhuji, 2010



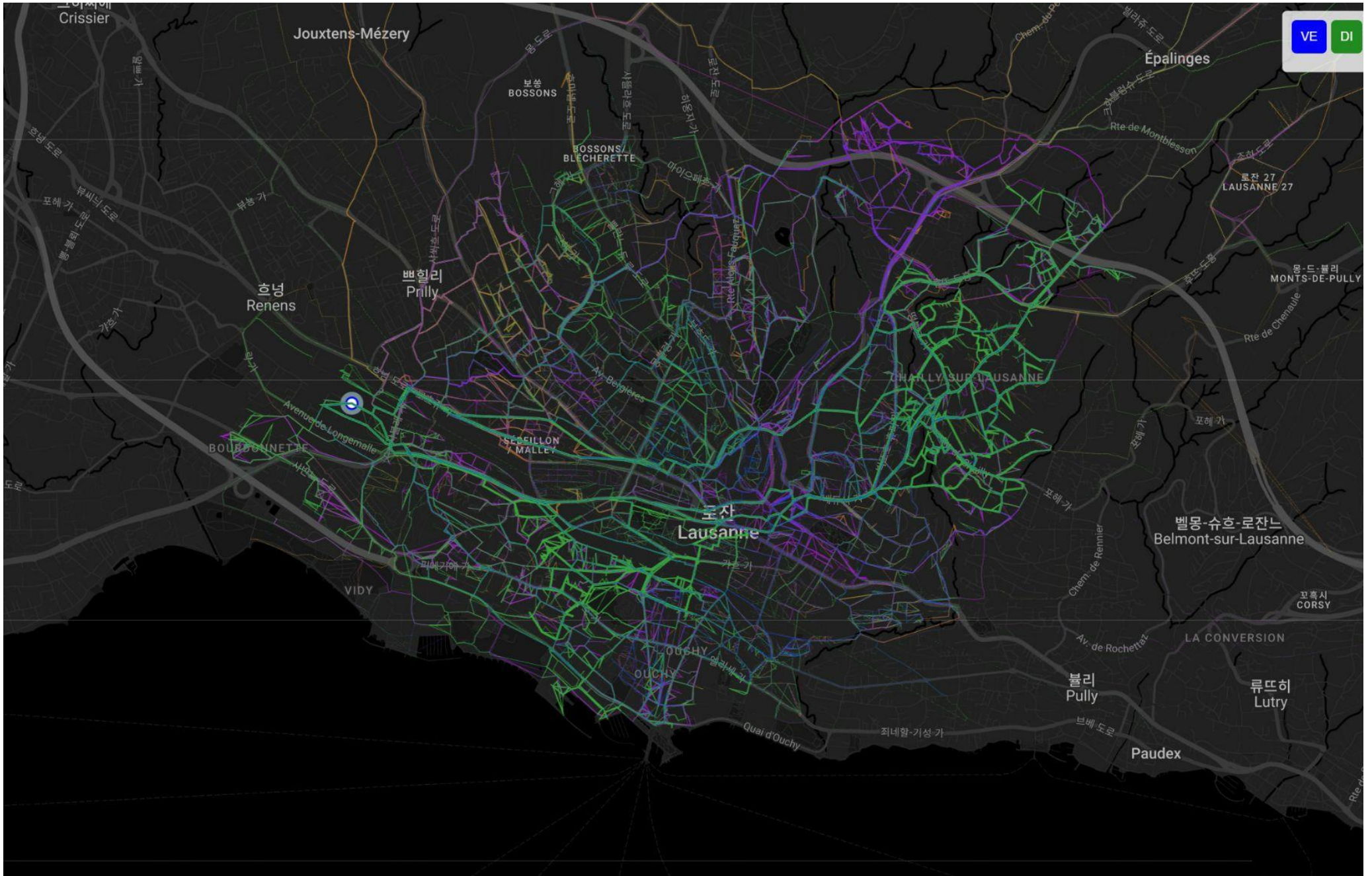
Media x Design Laboratory
Parametric Sankey Diagram, 2022



Media x Design Laboratory
Urban Flow Diagram - Demolition Waste to Construction Materials, 2022



Media x Design Laboratory
 Sectional Flow Diagram, 2022



Media x Design Laboratory
Blue City Project, Waste Flow, 2022-2024



Florian Cella

Lausanne met ses poubelles colorées... à la poubelle - 24 heures - 2021



Ferrari Architectes
Déchetterie de Malley, 2006-2010



Henry Transports
Déchetterie Mobile

[24] VAUD & RÉGIONS 45.90 9.90 la 1ère année Se connecter


Lausanne & Région Riviera-Chablais Nord vaudois-Broye La Côte Histoire vaudoise L'actu

Accueil | Vaud & Régions | Lausanne & Région | Des brocantes gratuites dans les déchetteries mobiles

Des brocantes gratuites dans les déchetteries mobiles

A Lausanne, Récup'action permet d'offrir une seconde vie aux objets inutilisés.

Marie Nicollier
Publié: 07.01.2017, 15h53



Des espaces seront aménagés dans les déchetteries mobiles lausannoises pour l'échange d'objets en bon état.
PHILIPPE MAEDER - A

LE TEMPS

EN CONTINU MONDE SUISSE ÉCONOMIE OPINIONS CULTURE SOCIÉTÉ SCIENCES SPORT CYBER VIDÉOS PODCASTS ARTICLES AUDIO R/ÉVOLUTIONS *Charrette*

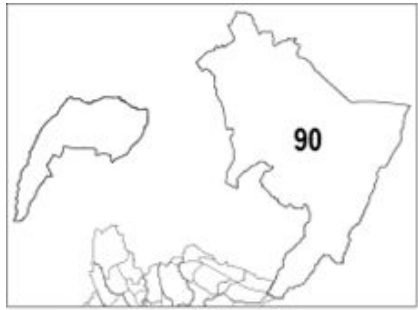
Un gardien de nuit pour les déchetteries

Depuis l'introduction des nouvelles règles en matière de gestion des déchets, la ville constate une hausse des incivilités aux abords des postes de tri



© Keystone

Local Press (24 Heures, Le Temps)
The changing face of waste disposal



- 1 - Centre**
- 2 - Maupas/Valency**
- 3 - Sébeillon/Malley**
- 4 - Montoie/Bourdonnette**
- 5 - Montriond/Cour**
- 6 - Sous-Gare/Ouchy**
- 7 - Montchoisi**
- 8 - Florimont/Chissiez**
- 9 - Mousquines/Bellevue**
- 10 - Vallon/Béthusy**
- 11 - Chailly/Rovéréaz**
- 12 - Sallaz/Vennes/Séchaud**
- 13 - Sauvabelin**
- 14 - Borde/Bellevaux**
- 15 - Vinet/Pontaise**
- 16 - Bossos/Blécherette**
- 17 - Beaulieu/Grey/Boisy**
- 90 - Zones foraines**

Lausanne District Map



Déchets Incinérables / Incinerable

- Sanitary Products
- Dirty Packaging
- VHS Tapes / Vinyls
- Tetra Pak
- Cooked Food + Animal Product
- Porcelain
- Lightbulbs (NB. no neon tubes)
- Composite Materials
- Shoes
- Bedding
- Cigarette butts
- Diapers
- et al.



Verre / Glass

- Glasses
- Bottles
- Jars
- Broken Shards
- etc.



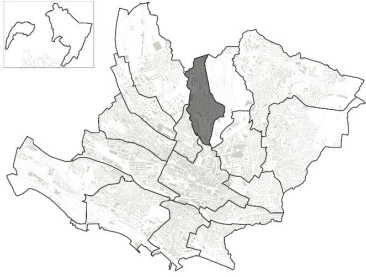
Papier Carton / Paper Cardboard

- Clean Paper
- Clean Cardboard

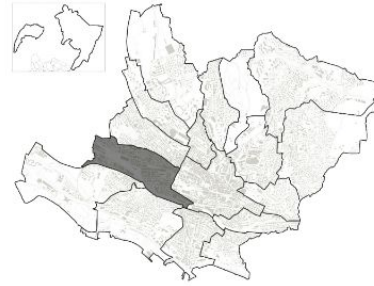
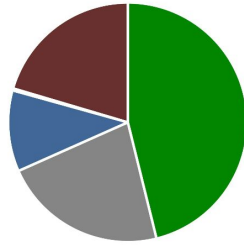


Biodéchets / Bio-Waste

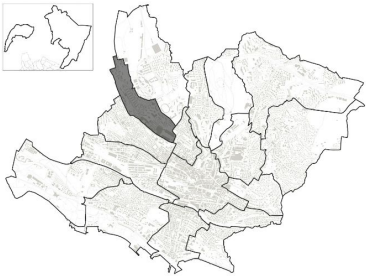
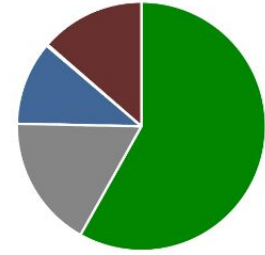
- Raw Veggies and Fruits
- Plants
- Flowers
- Egg Shells
- Coffee Grounds
- Tea
- Bread
- Cork
- etc.



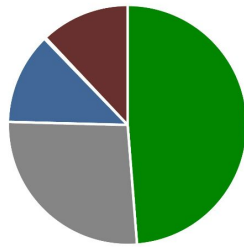
14 - Borde/Bellevaux



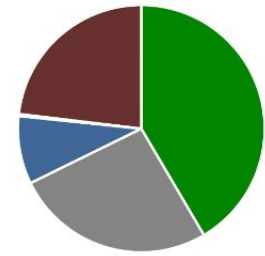
3 - Sébeillon/Malley



17 - Beaulieu/Grey/Boisy



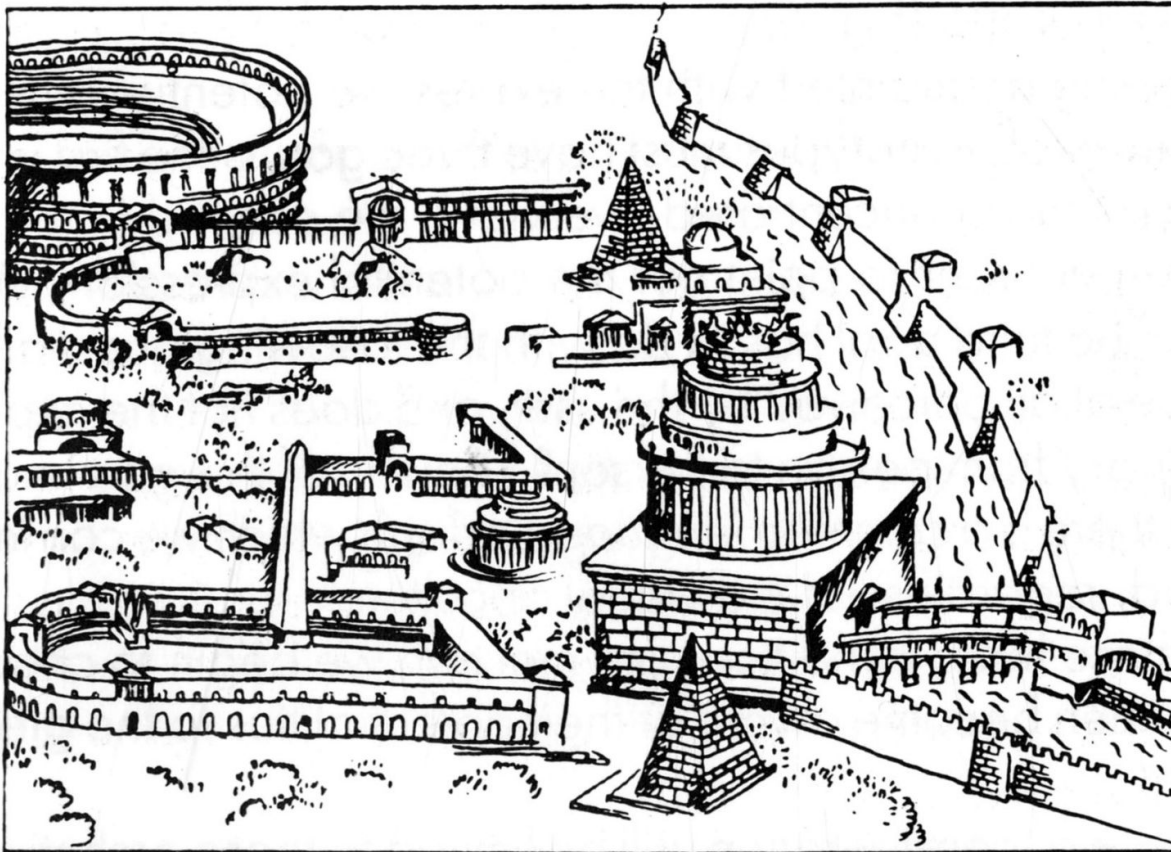
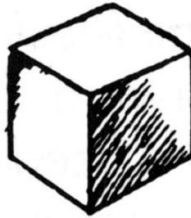
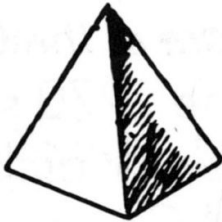
11 - Chailly/Rovéréaz



**HOW CAN WE MAP LAUSANNE'S
COMPLEX FLOWS OF WASTE ?**

**HOW CAN WE REDUCE
NEIGHBORHOOD WASTE
OUTPUTS TOWARD A CIRCULAR
CITY?**

**HOW CAN INVISIBLE FLOWS HELP
DESIGN THE LAUSANNE OF
TOMORROW ?**



Le Corbusier

Volumetric Archetypes, Towards a New Architecture

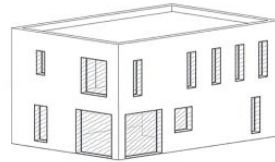
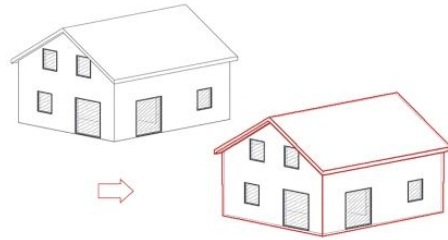
4 RESIDENTIAL ARCHETYPES IN THE SWISS CONTEXT

PERFORMANCE SCENARIOS and CONSTRUCTION / HVAC VARIANTS Influence on both operational and embodied impacts

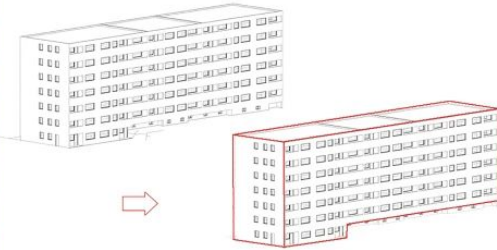
INDUCED DAILY MOBILITY
VARIANTS
Influence on operational impacts

Hypothesis	Location	5 territorial entities
(1) Current performance	Centre	
	Suburban	
(2) Technical improvements	Peri-urban	
	Rurban	
	Rural	

SINGLE-FAMILY HOUSES



MULTI-FAMILY HOUSES



PARKING
VARIANTS
Influence on embodied impacts

Parking Variant	3 types of parking
Individual garage	
Outdoor	
Underground	

	Name	Performance Energy efficiency	Construction				HVAC Fuel + system + RE		
			Type	Structure	Insulation	U-value		Façade	
Retrofit	SFH.r. E0	None		Brick	0 cm	1.21 W/m².K	Roughcast	Oil boiler	
	SFH.r. S0.cp SFH.r. S0.bp	Current regulation	Common practice Best practice	— (built)	12 cm - EPS 12 cm - recycled EPS	0.25 W/m².K	Roughcast Ventilated	Oil boiler + Solar thermal panels	
	SFH.r. S1.cp SFH.r. S1.bp	+	Common practice Best practice	— (built)	25 cm - EPS 25 cm - rec. EPS	0.24 W/m².K	Roughcast Ventilated	Electric heap pump + Photovoltaic panels	
	SFH.r. S2.cp SFH.r. S2.bp	++	Common practice Best practice	— (built)	30 cm - EPS 30 cm - rec. EPS	0.12 W/m².K	Roughcast Ventilated	Electric heap pump + Photovoltaic panels	
	SFH.r. S3.cp SFH.r. S3.bp	+++	Common practice Best practice	— (built)	30 cm - EPS 30 cm - rec. EPS	0.12 W/m².K	Roughcast Ventilated	Electric heap pump + Photovoltaic panels	
	New construction	SFH.n. S0.cp SFH.n. S0.bp	Current regulation	Common practice Best practice	Brick Wood	18 cm - EPS 22 cm - rec. EPS	0.16 W/m².K	Roughcast Ventilated	Oil boiler + Solar thermal panels
SFH.n. S1.cp SFH.n. S1.bp		+	Common practice Best practice	Brick Wood	25 cm - EPS 25 cm - rec. EPS	0.14 W/m².K	Roughcast Ventilated	Electric heap pump + Photovoltaic panels	
SFH.n. S2.cp SFH.n. S2.bp		++	Common practice Best practice	Brick Wood	30 cm - EPS 30 cm - rec. EPS	0.12 W/m².K	Roughcast Ventilated	Electric heap pump + Photovoltaic panels	
SFH.n. S3.cp SFH.n. S3.bp		+++	Common practice Best practice	Brick Wood	35 cm - EPS 35 cm - rec. EPS	0.10 W/m².K	Roughcast Ventilated	Electric heap pump + Photovoltaic panels	
Retrofit		MFH.r. E0	None		Brick	0 cm	1.13 W/m².K	Roughcast	Oil boiler
		MFH.r. S0.cp MFH.r. S0.bp	Current regulation	Common practice Best practice	— (built)	12 cm - EPS 12 cm - recycled EPS	0.25 W/m².K	Roughcast Ventilated	Oil boiler + Solar thermal panels
	MFH.r. S1.cp MFH.r. S1.bp	+	Common practice Best practice	— (built)	16 cm - EPS 16 cm - rec. EPS	0.20 W/m².K	Roughcast Ventilated	Electric heap pump + Photovoltaic panels	
	MFH.r. S2.cp MFH.r. S2.bp	++	Common practice Best practice	— (built)	19 cm - EPS 19 cm - rec. EPS	0.17 W/m².K	Roughcast Ventilated	Electric heap pump + Photovoltaic panels	
	MFH.r. S3.cp MFH.r. S3.bp	+++	Common practice Best practice	— (built)	30 cm - EPS 30 cm - rec. EPS	0.12 W/m².K	Roughcast Ventilated	Electric heap pump + Photovoltaic panels	
	New construction	MFH.n. S0.cp MFH.n. S0.bp	Current regulation	Common practice Best practice	Brick Wood	18 cm - EPS 22 cm - rec. EPS	0.17 W/m².K	Roughcast Ventilated	Oil boiler + Solar thermal panels
MFH.n. S1.cp MFH.n. S1.bp		+	Common practice Best practice	Brick Wood	25 cm - EPS 25 cm - rec. EPS	0.14 W/m².K	Roughcast Ventilated	Electric heap pump + Photovoltaic panels	
MFH.n. S2.cp MFH.n. S2.bp		++	Common practice Best practice	Brick Wood	30 cm - EPS 30 cm - rec. EPS	0.12 W/m².K	Roughcast Ventilated	Electric heap pump + Photovoltaic panels	
MFH.n. S3.cp MFH.n. S3.bp		+++	Common practice Best practice	Brick Wood	35 cm - EPS 35 cm - rec. EPS	0.10 W/m².K	Roughcast Ventilated	Electric heap pump + Photovoltaic panels	

Drouilles, J., Aguacil, S., Hoxha, E. et al.

Environmental impact assessment of Swiss residential archetypes: a comparison of construction and mobility scenarios. Energy Efficiency 12, 1661–1689 (2019).





Benoît Jacques, Rui Filipe Pinto - Photos by Filip Dujardin
Villa urbaine / Urban Villa, l'exemple lausannois / The Lausanne Example, 2021

POPULATION

age - socio economics - mobility

DENSITY

floors - rooms - families

FUNCTION + MIXITY

residential - commercial - public

ECONOMICS

income - commercial use - opening times

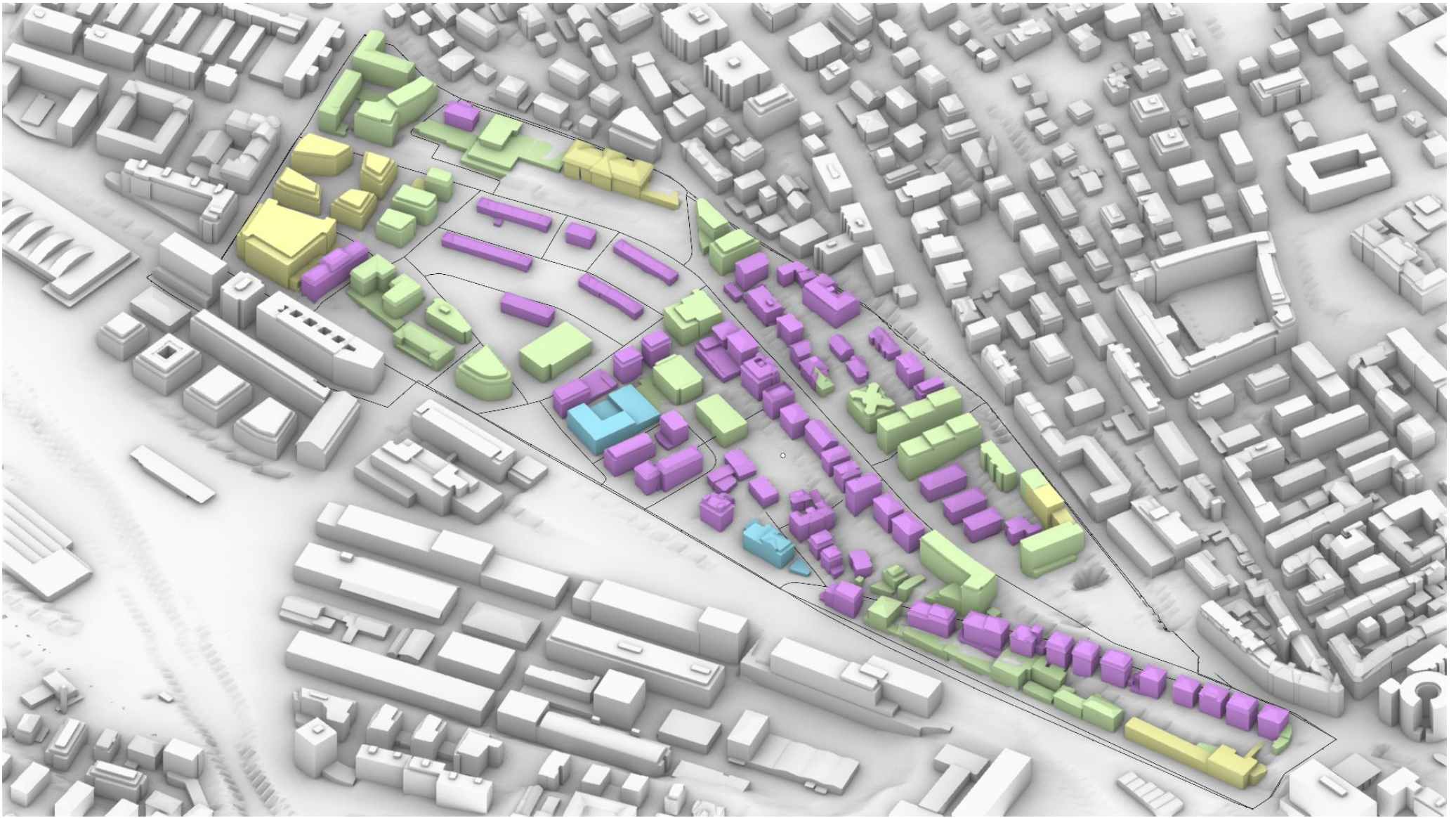
ADJACENCY + PROXIMITY

convenience - transportation - leisure

ARCHITECTURAL PROPERTIES

volume - depth - height - light - age

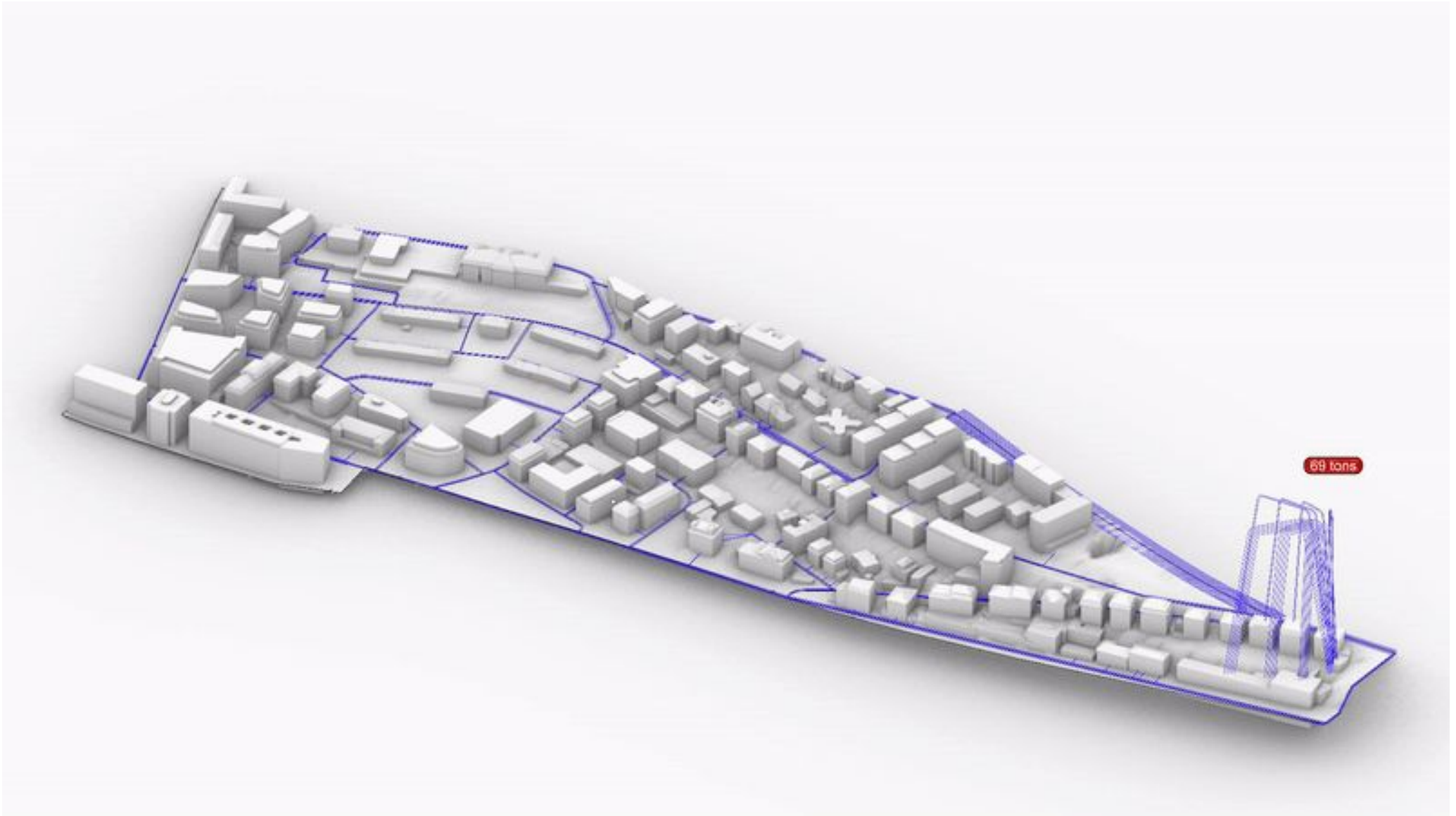
(...)



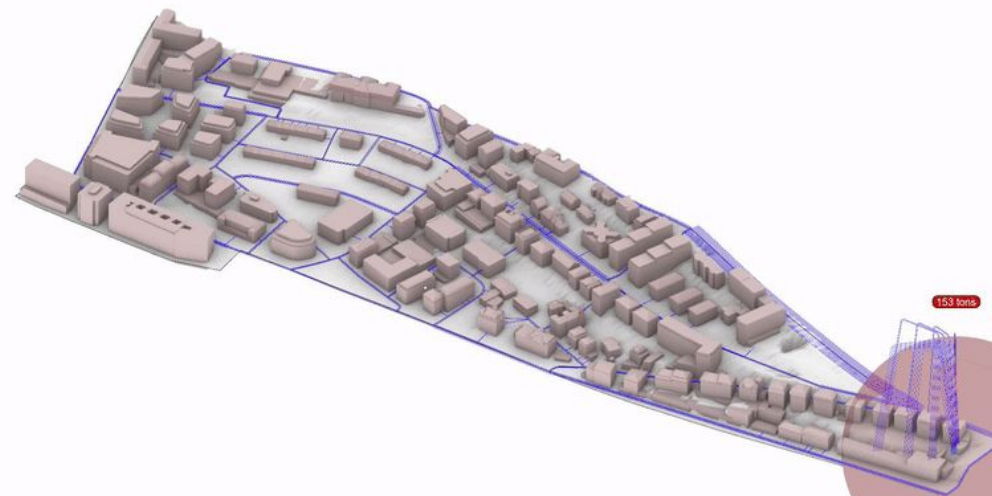
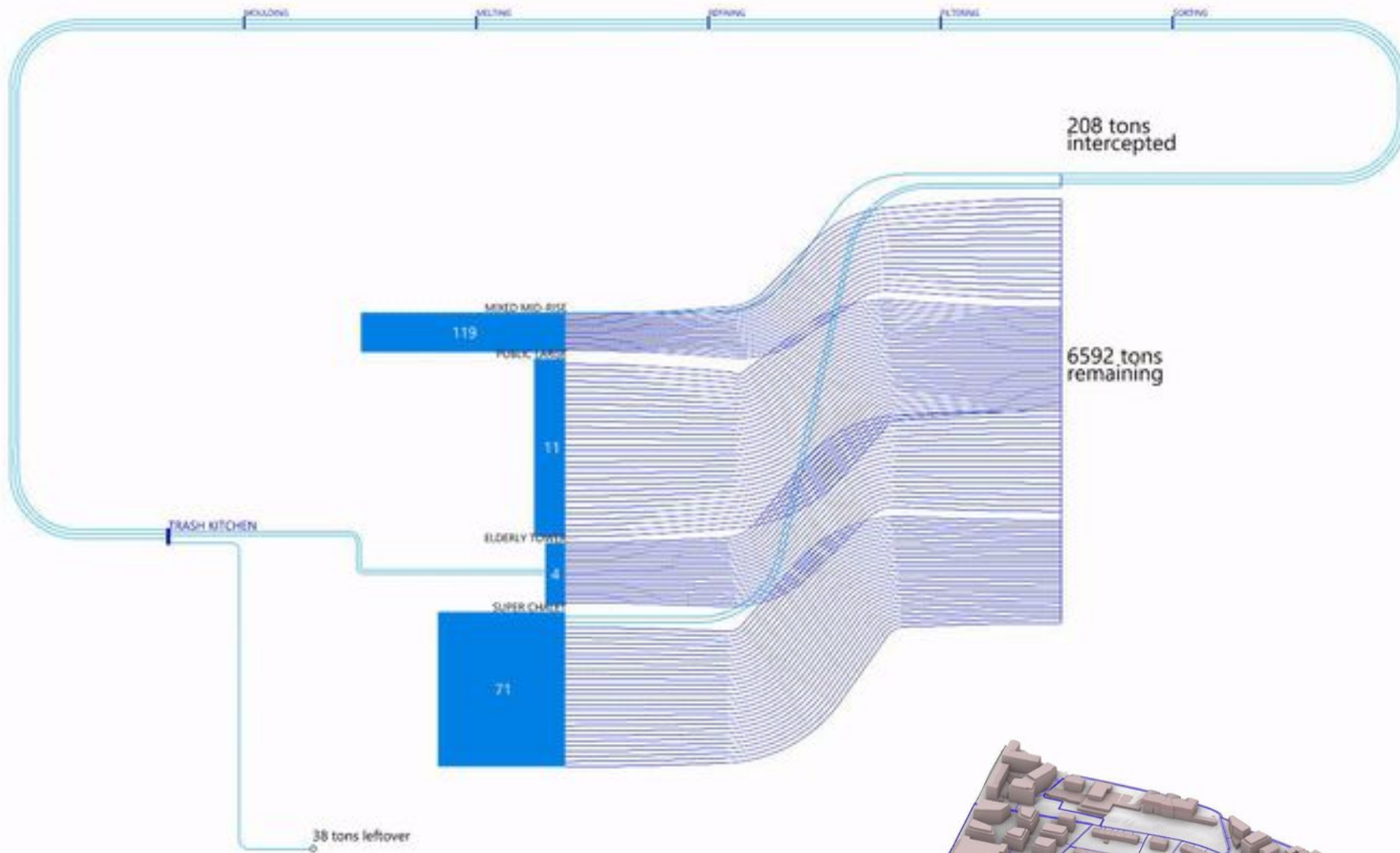
Media x Design Laboratory
Waste-Data-Archetype Classification Prototype - Rue de Morges

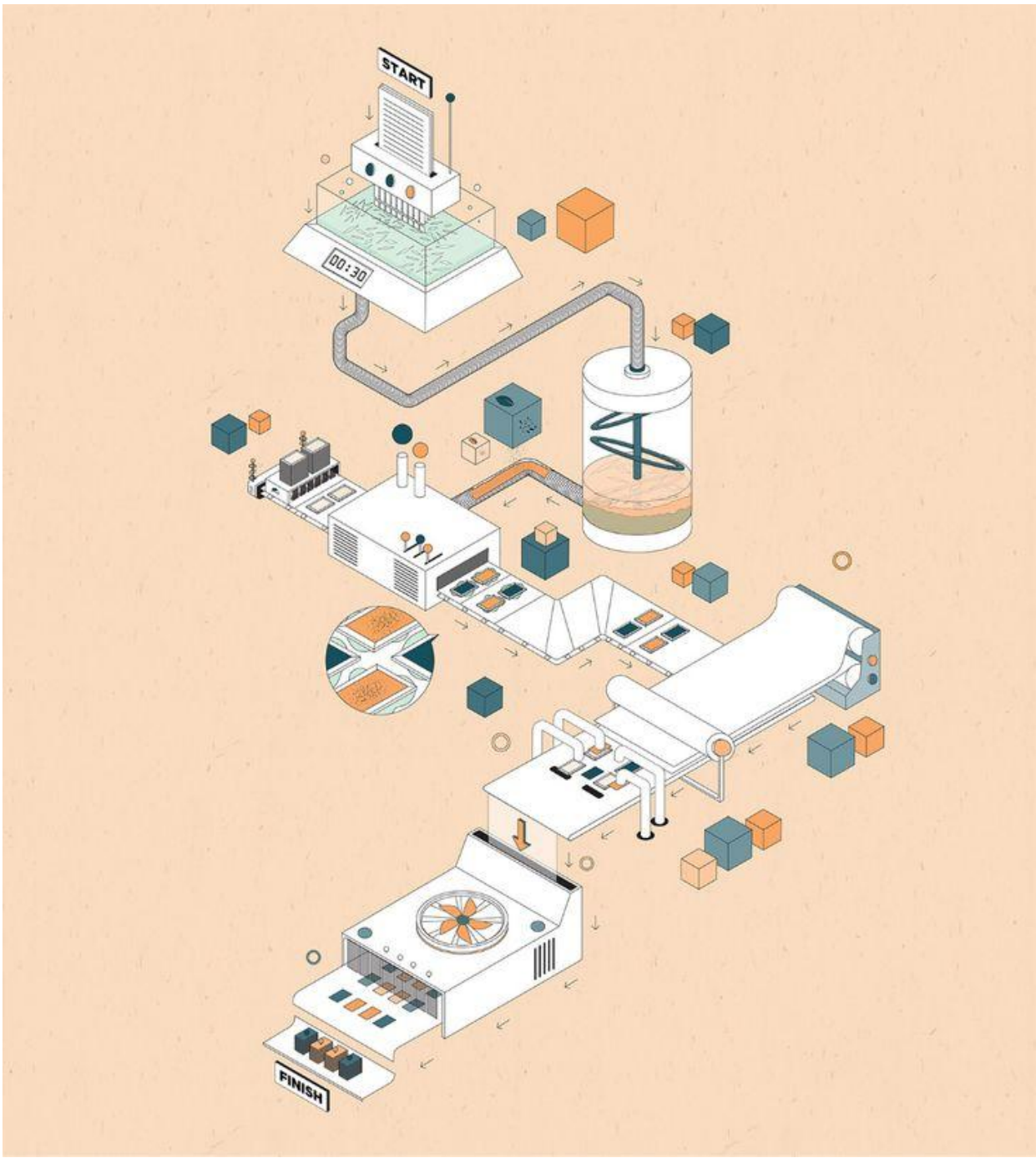


Media x Design Laboratory
Waste Pickup Trips Intensity - Rue de Morges

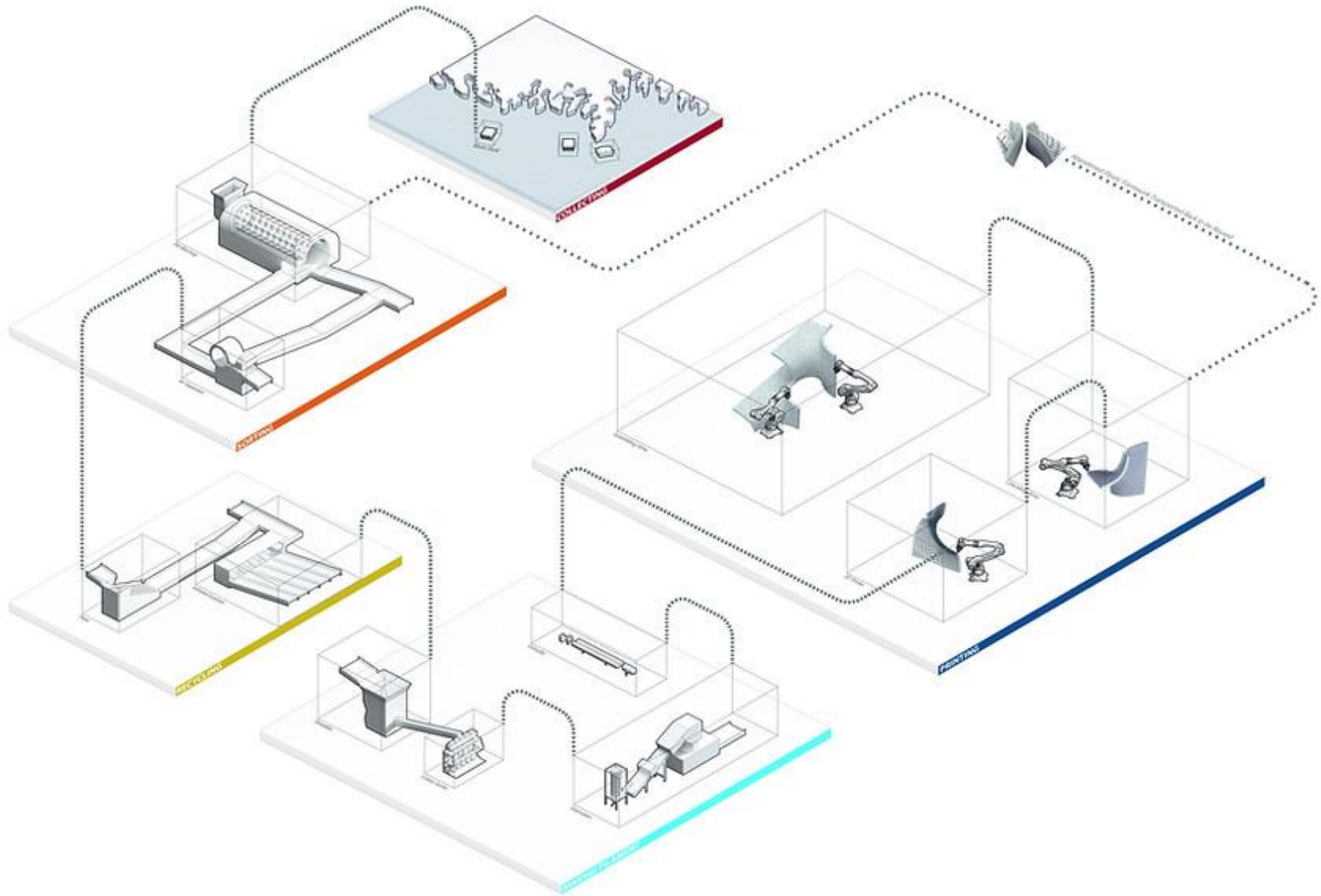


Media x Design Laboratory
Flow Interceptor w/ Tonnage by 100m Proximity - Rue de Morges

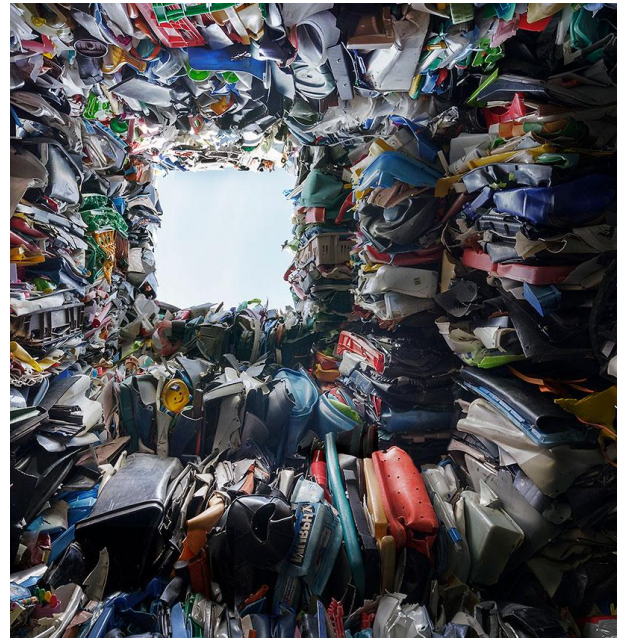




Wennie Lun
The Infographic of Recycling Paper, 2020



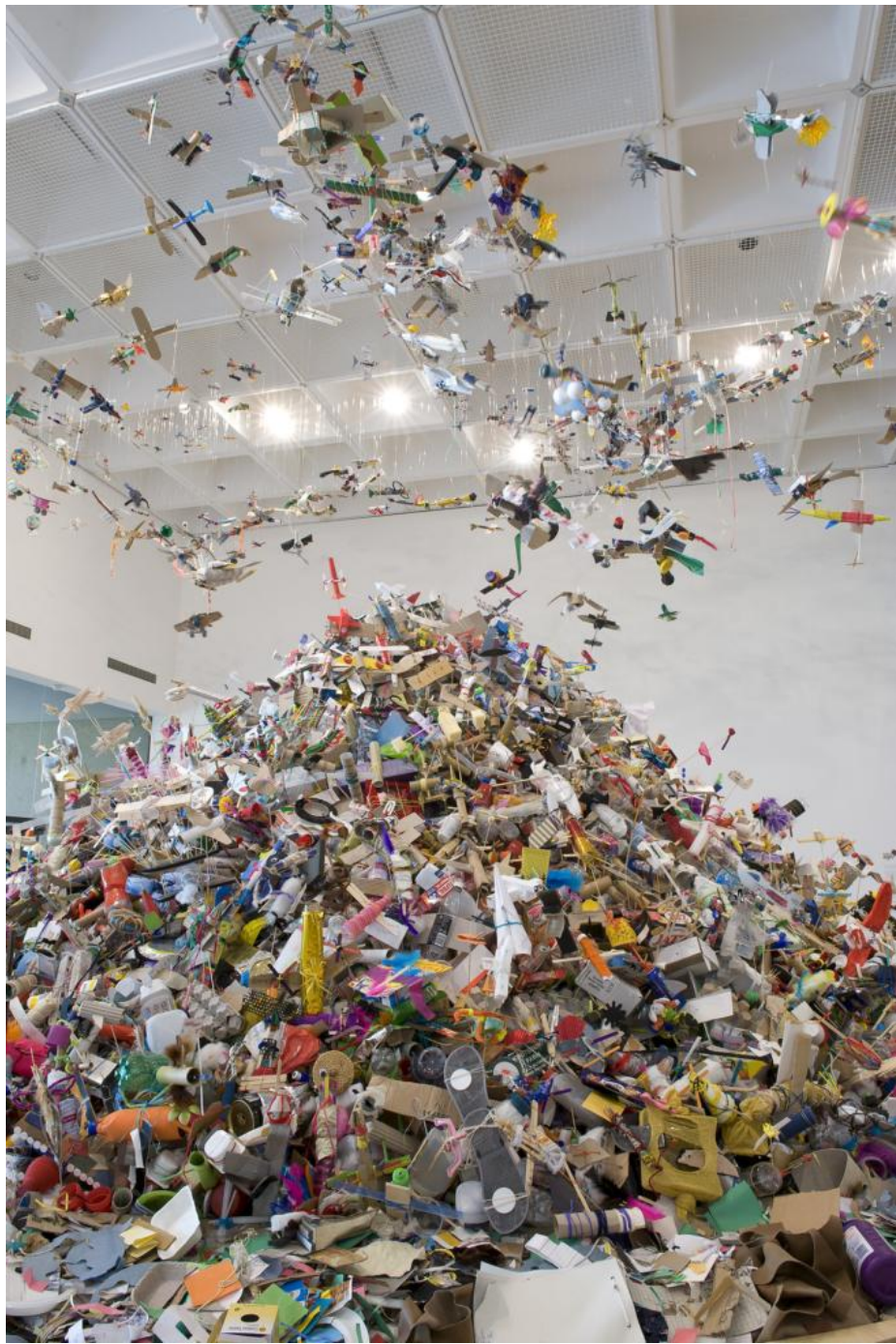
Jialin Xu, Yuxiang Gao, Yitian Zhang, Jianan Zhang
5 Stages of Plastic Recycling, 2019



Raffaello Rosselli Architects
Plastic Palace, 2021

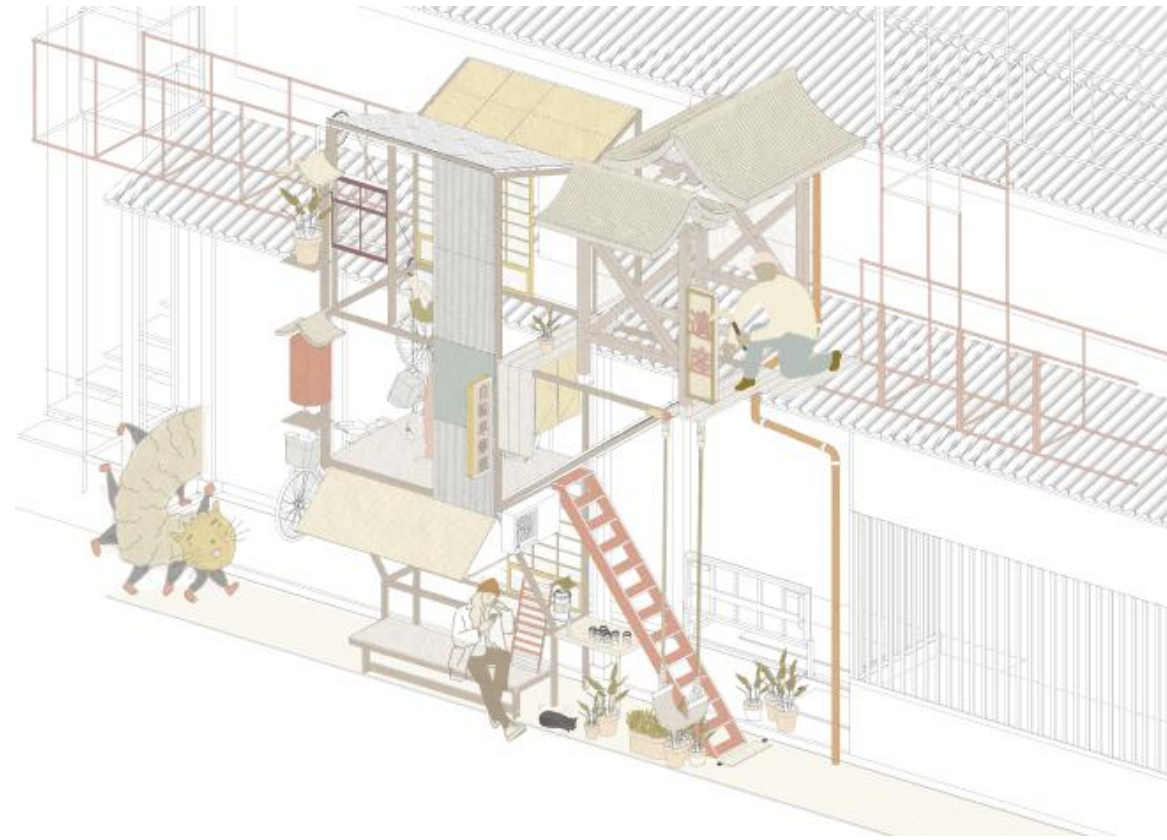
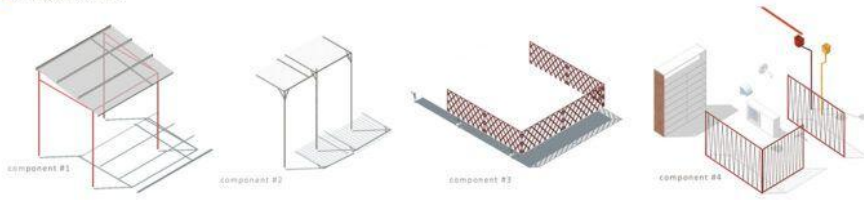


MINIWIZ
TRASH KITCHEN - Taipei, 2023



Isobel & Alfredo aquilizan
In Flight, 2009

disassembly
re-assembly exercise



Karina Armanda
Hypothetical Narratives of Living Structures, Kyoto, 2022



MINIWIZ

TRASHPRESSO - Mobile Plastic and Fabric Recycling Unit, 2017



MINIWIZ

TRASHPRESSO - Mobile Plastic and Fabric Recycling Unit, 2017

Important Dates

Spring 2024

Phase I: Waste Flows (3 weeks)

Feb 17 - Mar 04

Phase II: Flow Mapping (4 weeks)

Mar 10 - April 1

Mid Review

April 7

Phase III: Design Simulation (3 weeks)

April 8 - April 15

Easter Beak

April 21 - April 22

Phase IV: Representation (3 weeks)

May 5 - May 20

Final Review

May 27

Dates are tentative, and subject to change.

Team

Media x Design Laboratory

Prof. Jeffrey Huang

Alexandre Sadeghi, Ga-In Sim

Partners

City of Lausanne

Institute of Design (IDe) - SUPSI

Helvetia Environment