UPCYCLEA

An AI-based Platform & Services to Industrialize Circular Economy in the Built Environment

LEADING CIRCULAR ECONOMY IN THE BUILT ENVIRONMENT

Locations

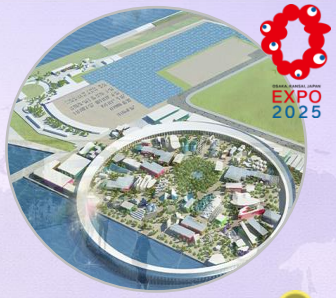
FRANCE
- Paris (HQ)
- Nantes
- Marseille
- Strasbourg

UNITED KINGDOM
- London (Rep)

SPAIN
- Barcelona (Rep)

JAPAN
- Tokyo (Rep)

Singapore
- 61H Paya Lebar Crescent



Global Footprint

+5M SQM MANAGED

OUR SKILLS & SERVICES

Circular Expertise since 2007
- Pioneering sustainable solutions with almost 20 years of hands-on circular economy experience

AI-Powered Circular Resource Management Platform since 2019
- Harnessing smart technology to maximize resource efficiency and close the loop across industries

White label Urban Mining Initiatives since 2023
- Delivering turnkey solutions that transform waste into high-value resources for your organization/city

Certified Cradle to Cradle® Assessor since 2011
- Offering trusted, expert assessments that ensure products meet the highest standards of sustainability

A FRAMEWORK FOR CITY WIDE REUSE

Singapore Urban Mining

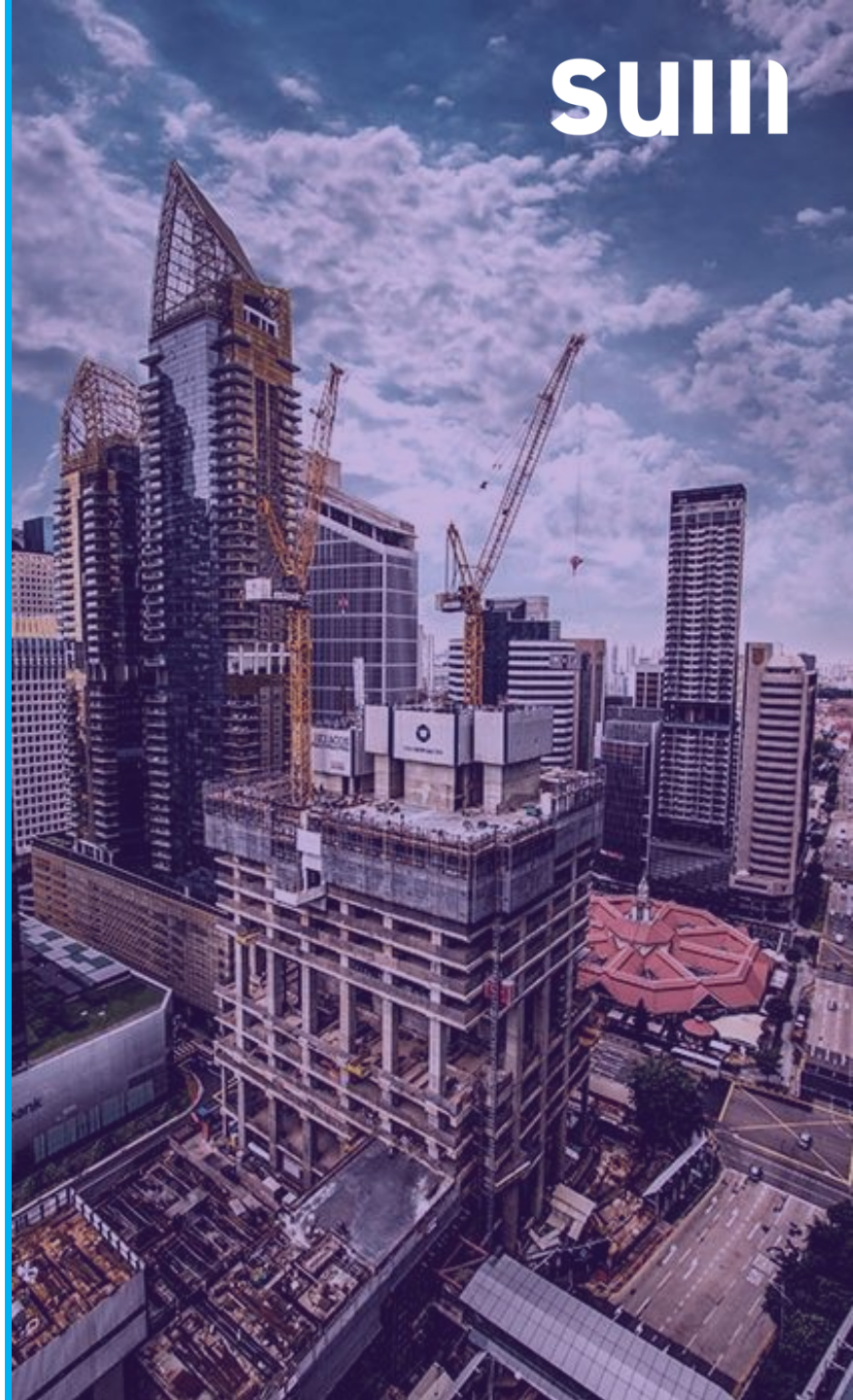
WHY AN URBAN MINING INITIATIVE IN SINGAPORE ?

THE PROBLEM

- Construction industry consumes 60% of all raw materials
- 98% end in low value “end of life” applications
- Built environment contributes to 37% of the world’s emissions and 20% of the Singapore’s emissions (of which 40% of embodied carbon)
- Semakau island of waste management will run out of space in 2035

CHALLENGES TO REUSE

- No transparency on supply of reclaimed products
- Unstructured and dispersed information
- Existing systems emphasize spot trading between strangers
- Unstable and fragmented demand and supply
- Inefficient and unprofitable artisanal approach

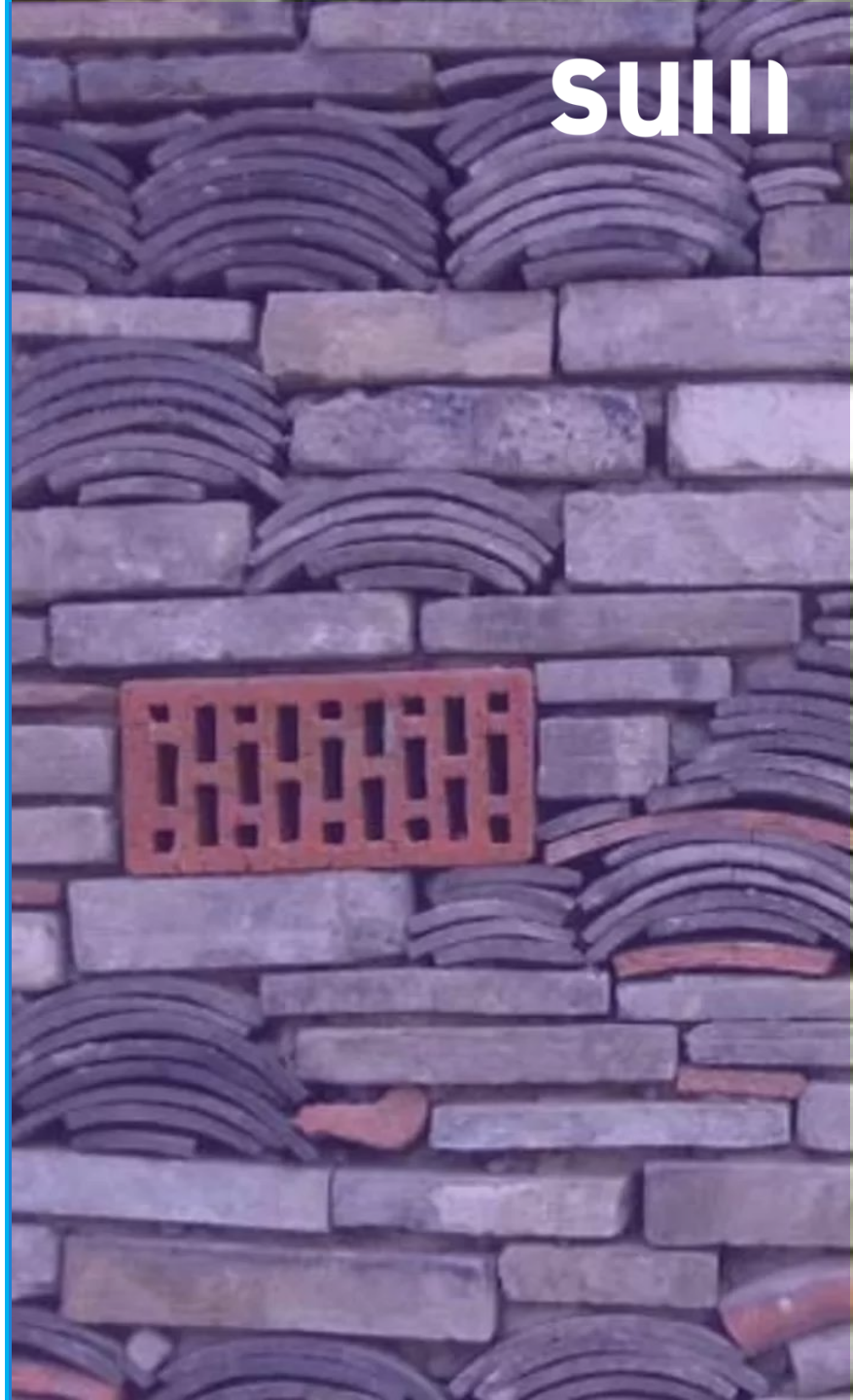


SINGAPORE URBAN MINING

- The SUM Singapore Urban Mining is seeking to create an institutional framework where public and private sector can share information, as well as reduce the total costs of participation in reuse
- Stakeholders share experience to drive best practice, standards and approaches to barriers and challenges
- Provide evidence and insights to drive policy, giving policymakers effective tools to support with targeted interventions.
- Turn information into action and action into policy

THE SUM OBJECTIVES

- Collaborate with Singapore stakeholders to digitize building audits to create transparency
- Use Digital Product Passports to capture and structure product & material data within a common template
- Bring key members of the industry into a forum that builds trust, manages complexity and enables scale
- Create critical mass by using key members to anchor the market while enabling interoperability with other marketplaces
- Automatically generate key impact Indicators (waste and CO2 avoided, water preserved, economic balance)
- Use an AI-based collaborative (white label) platform to maximize reuse



URBAN MINING OVERSEAS

powered by Upcyclea

Urban mining initiatives already active overseas

PIRÉE: French Urban Mining

- Since 2023
- Sponsors: Social Landlords Association, ULI France

Expo2025 : Osaka Urban Mining (temporary)

- April-October 2025
- Sponsor: Obayashi

Romulus: London Urban Mining

- Since 2024
- Sponsors: London boroughs, GLA

PRE-DEMOLITION AUDIT

CONSOLIDATING DATA

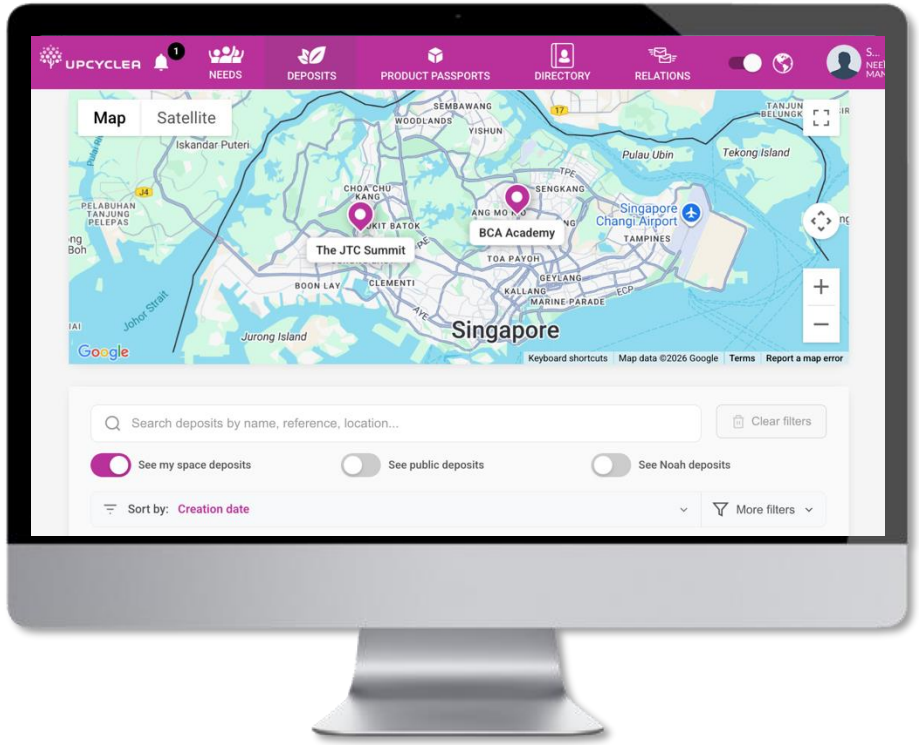
All starts from reliable data ⇢ **Pre-Demolition Audit** for Reuse

Building and Construction Authority

PDA Report

Digital Product Passports

Deposits of Reusable Products & Materials



Pre-Demolition Audit

Characterization & Digitalization in the SUM Platform

PDA FORMAT

Harmonization, Digitalization, Reliability

Product

Quantities, Levels of wear and demountability, Reuse potentials, etc.

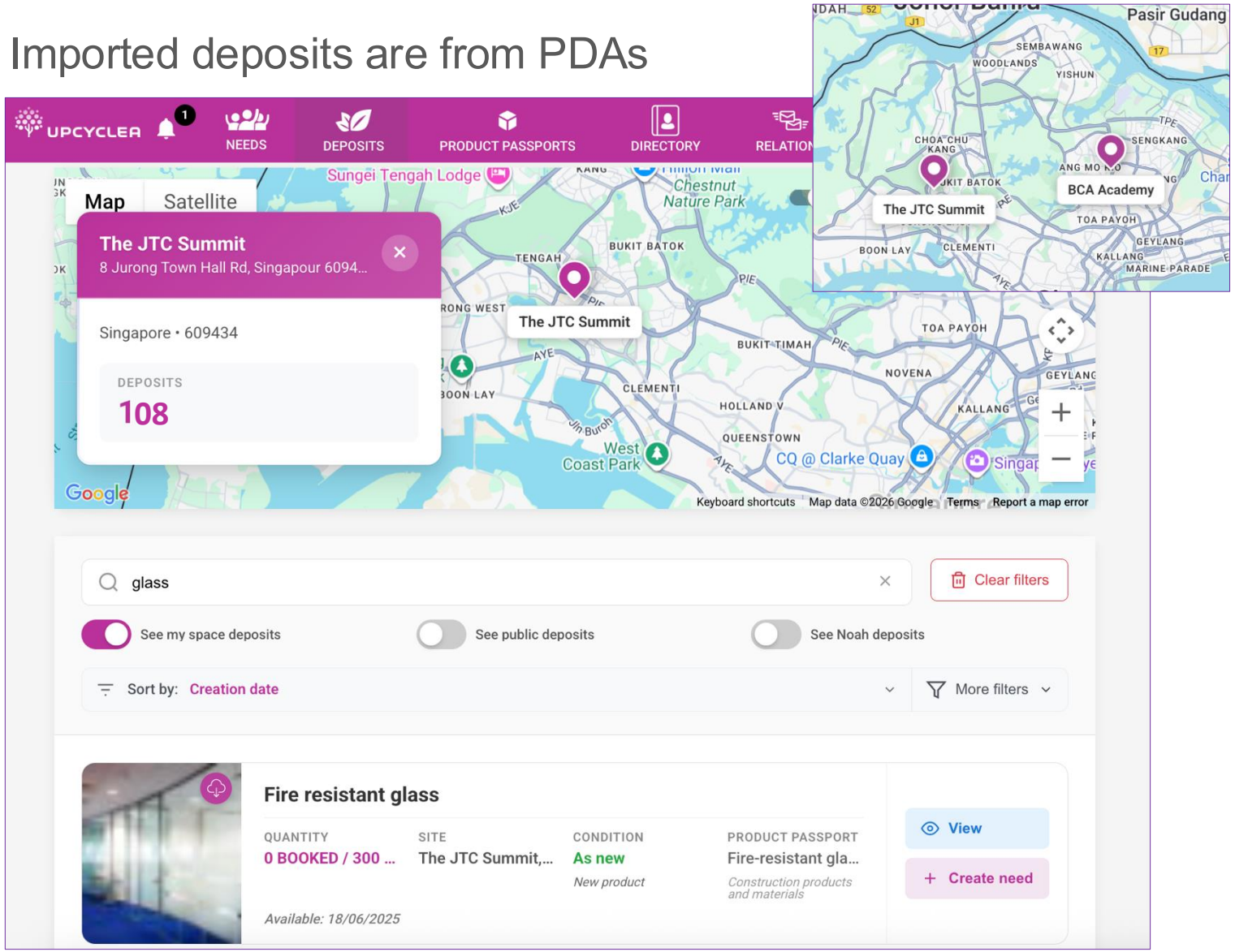
Location, Availability, Pictures, etc.

Passport Id

Product	Manufacturer	Reference / Description	Dimensions	Digital Product Passport ID	Passport Typology	Quantities	Unit	Deposit origin	Wear condition	Demountability	Reuse potential	Site	Auditor Comments	Availability Date	Image URL
Zinc cladding	n/a	Rainscreen cladding		63b69a4316f81	GENERIC	96	m2	4 - From site (removal)	3 - used	2 - easily separable	0 - NO	24		22/01/2025	https://drive.google.com/file/d/1ZDNRx-jRih2e2i_DDcWNQuFn
Aluminium ceiling tiles Type 1	n/a	Perforated acoustic ceiling tiles		608ac1510146f	MANUFACTURER	3423	m2	4 - From site (removal)	3 - used	2 - easily separable	1 - YES	22		23/01/2025	https://drive.google.com/file/d/1ZDNRx-jRih2e2i_DDcNQuFnWNsqwiBe/view?usp=drive_link
Aluminium ceiling tiles Type 2	n/a	Perforated acoustic ceiling tiles		608ac1510146f	GENERIC	1960	m2	4 - From site (removal)	3 - used	2 - easily separable	1 - YES	24		24/01/2025	https://drive.google.com/file/d/ZDNRx-jRih2e2i_DDcWNQuFnWNsqwiBe/view?usp=d
Aluminium shelving units	n/a	Storage		64a3de1223f87	GENERIC	4	piece	4 - From site (removal)	3 - used	2 - easily separable	1 - YES	22		25/01/2025	https://drive.google.com/file/d/1ZDNRx-jRih2e2i_DDcWQuFnWNsqwiBe/view?usp=driv e_link
Asphalt roof	n/a	Asphalt roofing		6076d6cba74f1	GENERIC	125	m2	4 - From site (removal)	3 - used	3 - difficult to separate	0 - NO	24		26/01/2025	https://drive.google.com/file/d/1ZNRx-jRih2e2i_DDcWNQuFnWNsqwiBe/view?usp=d
Basement Retaining Walls	n/a	RC Wall		64632e7680f3c	GENERIC	235	m3	4 - From site (removal)	3 - used	0 - not relevant	1 - YES	22		27/01/2025	https://drive.google.com/file/d/1ZDNRx-jRih2e2i_DDcWNuFnWNsqwiBe/view?usp=driv
Blockwork Walls 1	n/a	Concrete - Structural elements, blockwork		6467633bc48a1	GENERIC	98	m3	4 - From site (removal)	3 - used	4 - inseparable	0 - NO	22		28/01/2025	https://drive.google.com/file/d/1DNRx-jRih2e2i_DDcWNQuFnWNsqwiBe/view?usp=d
Blockwork Walls 1	n/a	Concrete - Structural elements, blockwork		6467633bc48a1	GENERIC	39.2	m3	4 - From site (removal)	3 - used	4 - inseparable	0 - NO	24		29/01/2025	https://drive.google.com/file/d/1ZDNRx-jRih2e2i_DDWNQuFnW
Blockwork Walls 2-6	n/a	Concrete - Structural elements, blockwork		6467633bc48a1	GENERIC	360.15	m3	4 - From site (removal)	3 - used	4 - inseparable	0 - NO	22		30/01/2025	https://drive.google.com/file/d/1ZDNRx-jRih2e2i_DDcNQuFnWN
Blockwork Walls 2-6	n/a	Concrete - Structural elements, blockwork		6467633bc48a2	GENERIC	91.6545	m3	4 - From site (removal)	3 - used	4 - inseparable	0 - NO	24		31/01/2025	https://drive.google.com/file/d/1DNRx-jRih2e2i_DDcWNQuFn

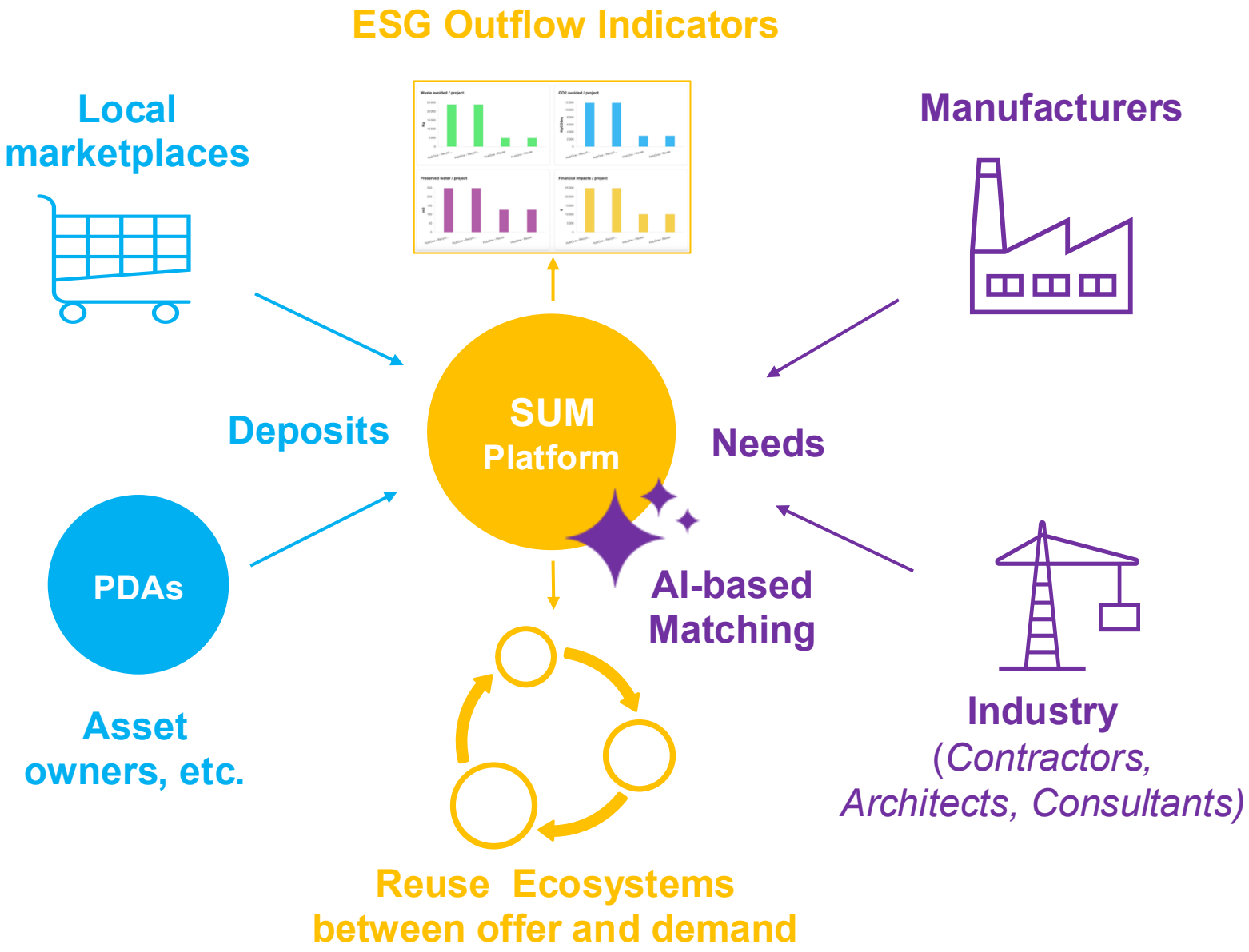
REUSABLE DEPOSITS

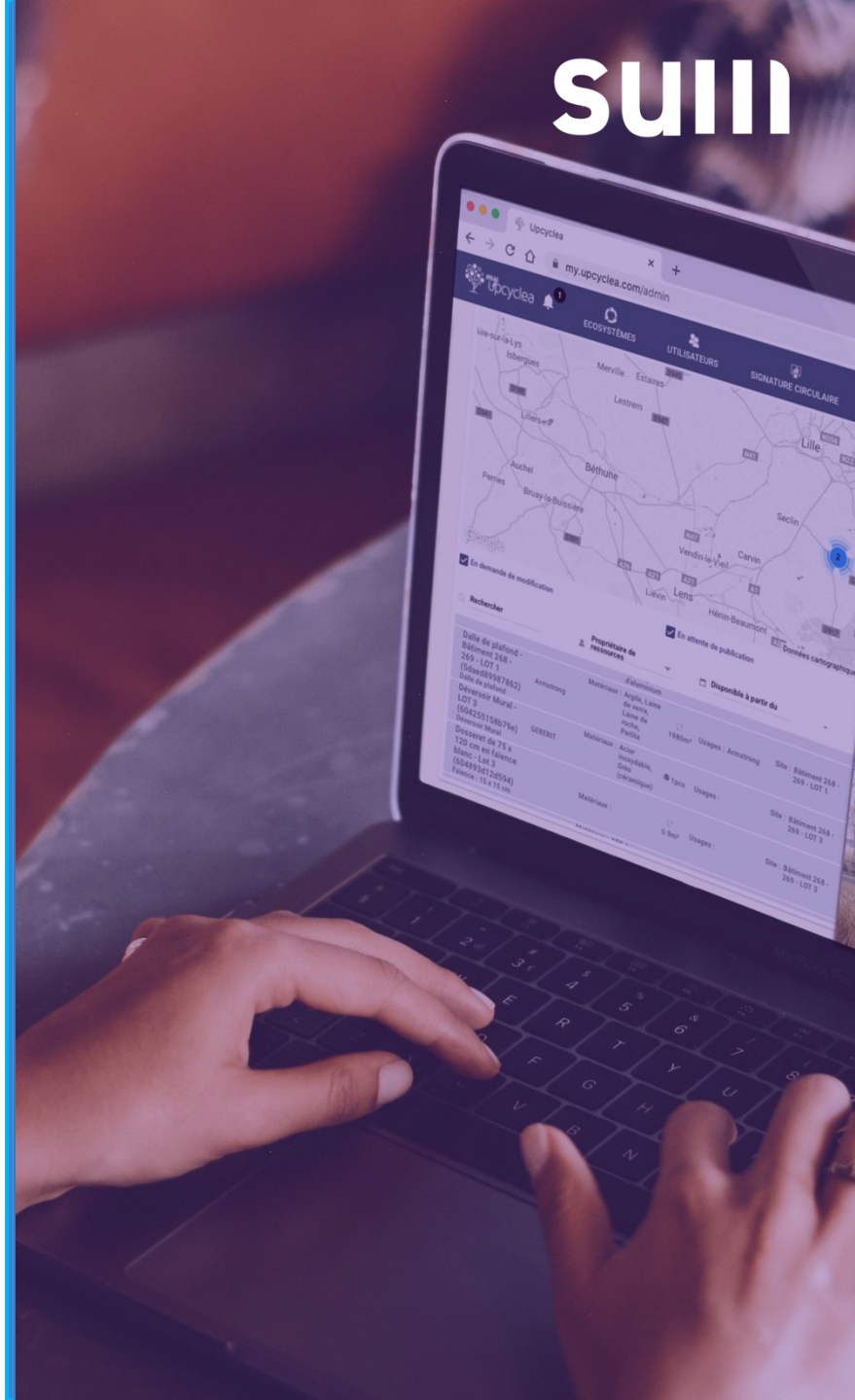
Imported deposits are from PDAs



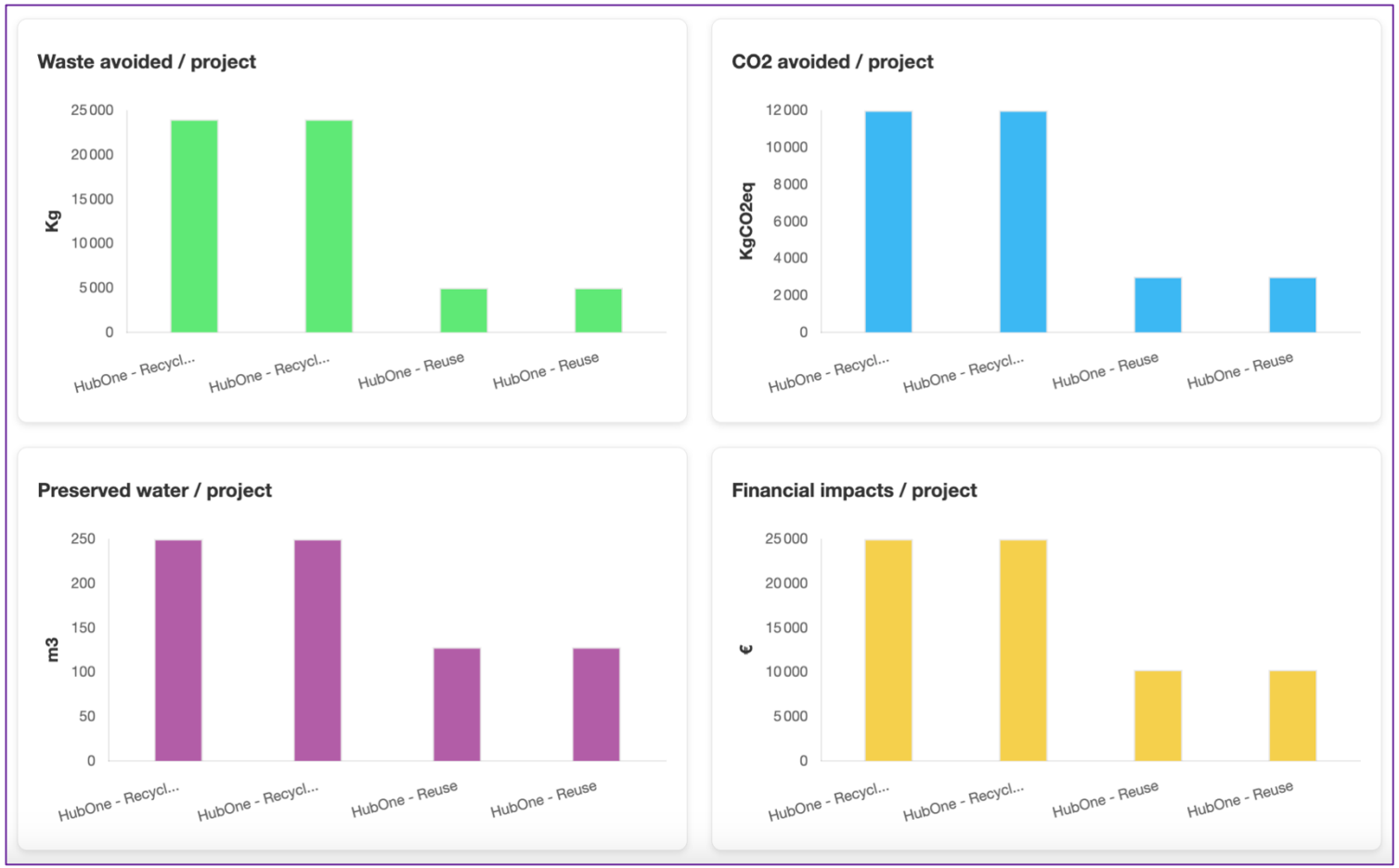
GLOBAL PROCESS

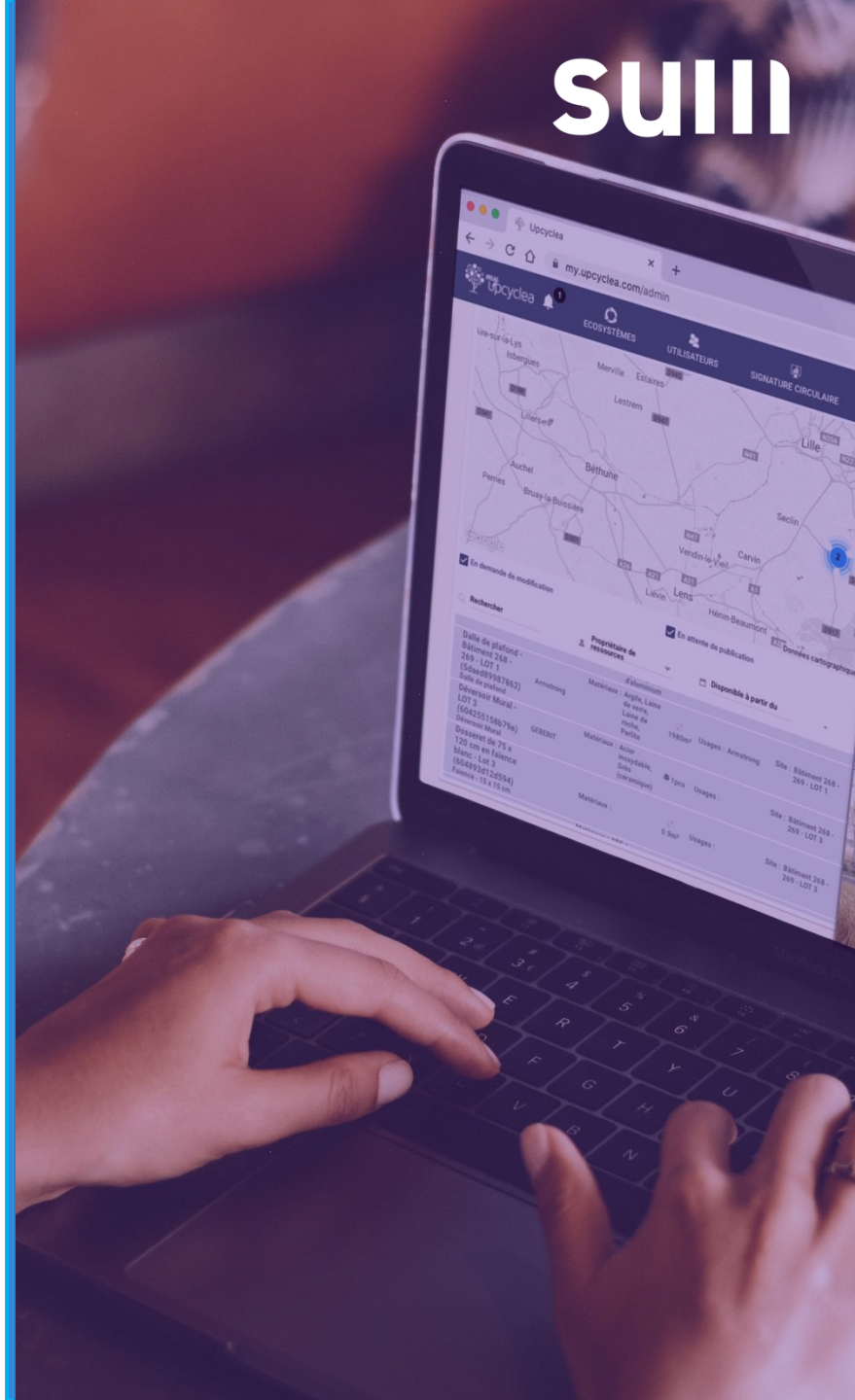
AI-BASED REUSE PROCESS





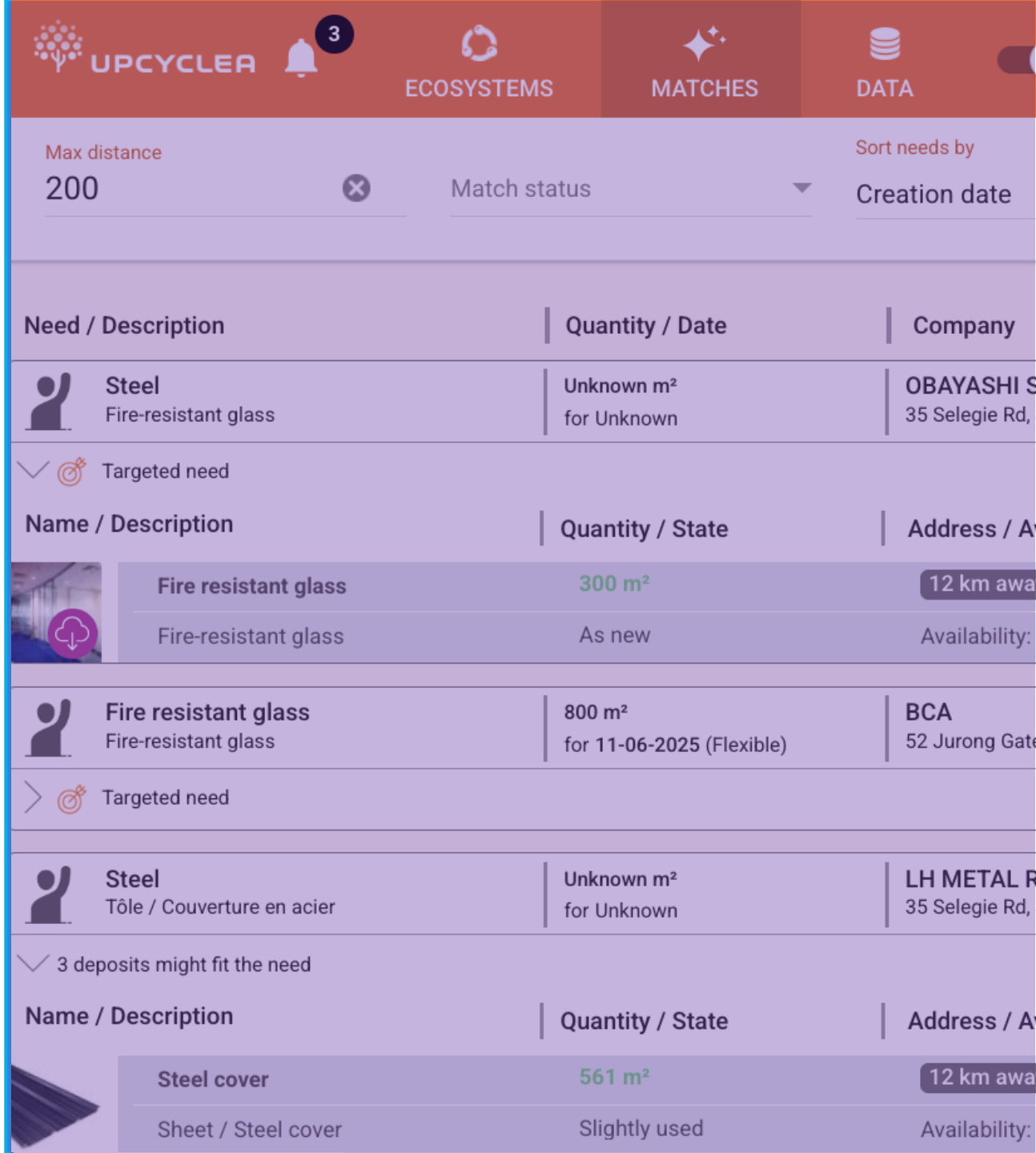
REAL-TIME OUTFLOW INDICATORS





THE SUM PLATFORM

- White label **Upcyclea** Platform
- Bulk import of PDAs
- AI-based Deposits x Needs matching
- Internal Messaging
- Reuse ecosystems
- Real time ESG inflow and outflow indicators
- Trainings
- Processes



THE RESOURCE MANAGER

- The Resource manager is a key part of the system, a ‘supply chain orchestrator’
- Shared between all stakeholders
- Facilitate demand / supply matching and support logistics
- Map the logistics and reverse supply chains to quantify and report material flows
- Train members and facilitate SUM monthly forums

ORGANIZATION

SUM GOVERNANCE

Industry
(needs)

Associations

Manufacturers

Contractors
(Architects, Consultants, etc.)

Steering Committee
(Strategy & Resource Management)

Government Agencies

SUM Platform

Deposit Owners
(deposits)

Academic Institutions

Upcyclea

Asset owners

Industry Sector Representatives

Developers

Builders

SUM GOVERNANCE

Industry
(needs)

Associations

Manufacturers

Contractors
(Architects, Consultants, etc.)

Steering Committee
(Strategy & Resource Management)

SUM Platform

Deposit Owners
(deposits)

Asset owners

Builders

Developers

etc.

MEMBERSHIP MODEL

Industry
(needs)

Free subscription
Including:

- Declaration of needs
- Purchase of used products and materials

Steering Committee
(Strategy &
Resource Management)

SUM Platform

Deposit Owners
(deposits)

Free subscription
Including:

- Strategy
- Trainings
- Methodology
- Resource Management (by Upcyclea)

- **Yearly subscription: S$3,000**
- **Per building: S$200–S$1,000***

Including:

- Buildings' PDAs imports
- AI-based Reuse Proposals
- ESG Outflow Indicators

* according to the number of buildings

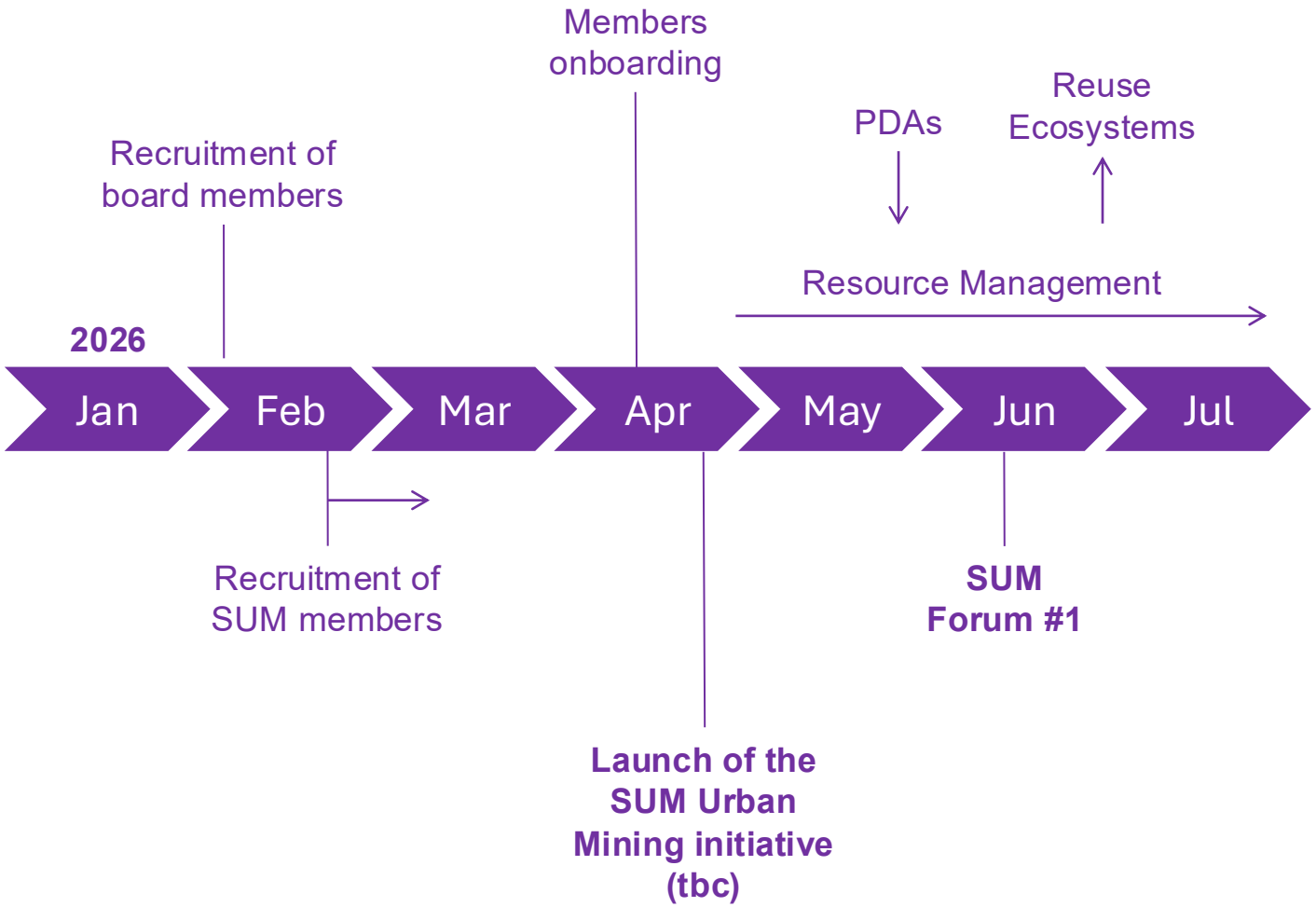
WHY JOIN SUM?

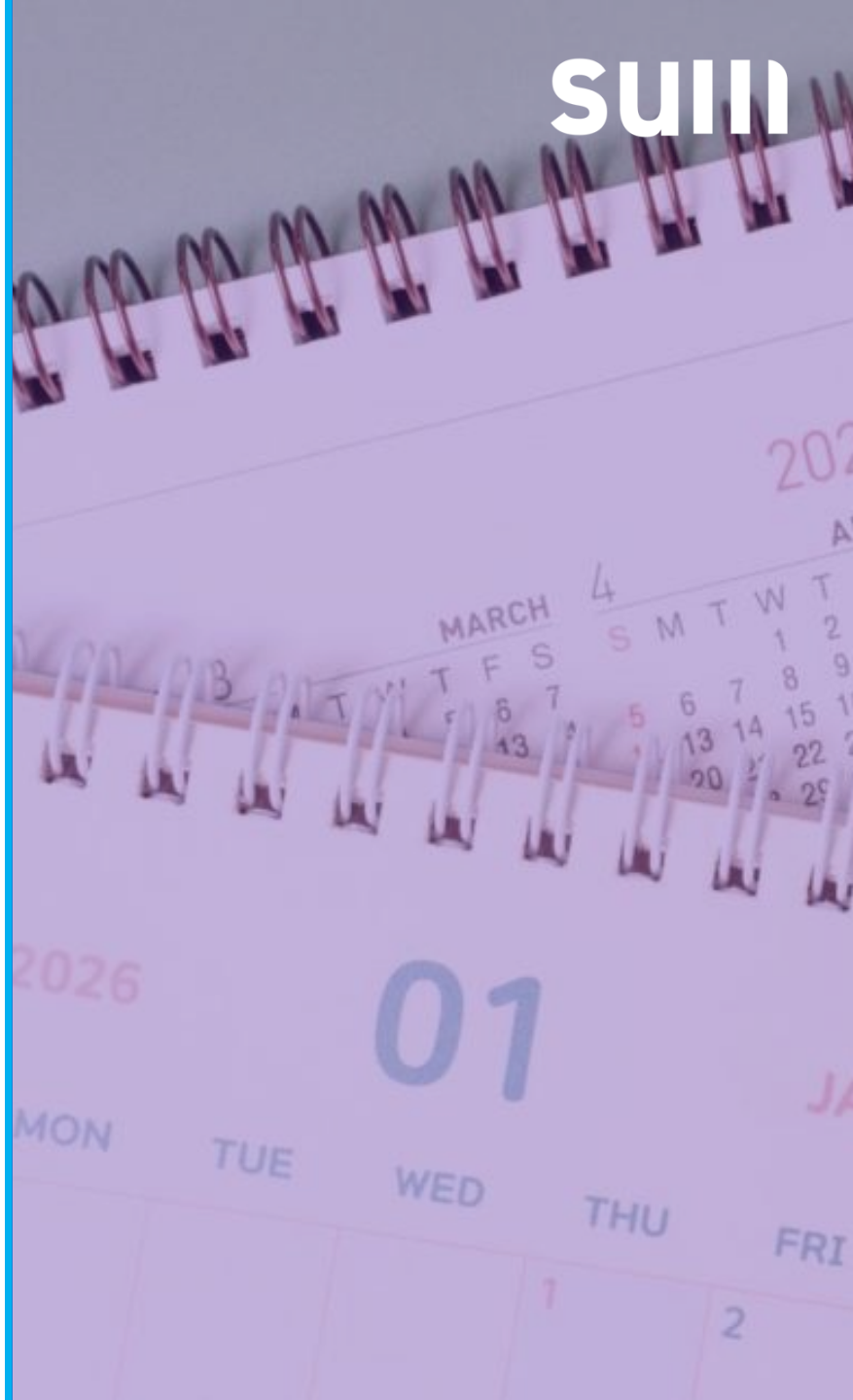
- Reduce risk by working together with industry peers in dynamic forum
- Transparency on sources of demand and supply
- Speed up reuse by engaging a large pool with capability to federate other marketplaces
- Obtain visibility on material flows and market signals
- Access social value opportunities
- Be part of the conversation that will help drive policy
- Make savings, decarbonization and reuse possible

THE SUM FORUM

- Bringing together forum of key stakeholders in monthly meetings
- Dynamic review of opportunities, live projects, to discuss needs and request support with challenges
- Address early warnings and provide solutions
- Held at BCA Academy (?)

NEXT STEPS


Members onboarding
Recruitment of board members
PDAs
Reuse Ecosystems
Resource Management
2026
Jan
Feb
Mar
Apr
May
Jun
Jul
Recruitment of SUM members
Launch of the SUM Urban Mining initiative (tbc)
SUM Forum #1



CIRCULAR CONSTRUCTION

CIRCULAR CONSTRUCTION

Local marketplaces

Digital Product Passports

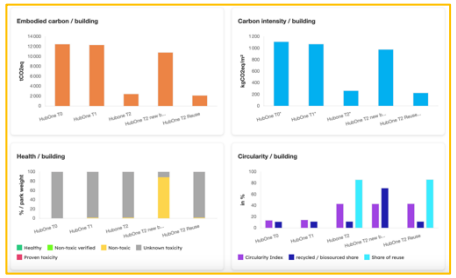
Manufacturers

Reused Products

UPCYCLEA Platform (private)

New Products

Singapore Urban Mining



ESG Inflow Indicators

Industry
(Contractors, Architects, Consultants)

(BIM Objects)

CERTIFIED cradle to cradle PRODUCTS PROGRAM

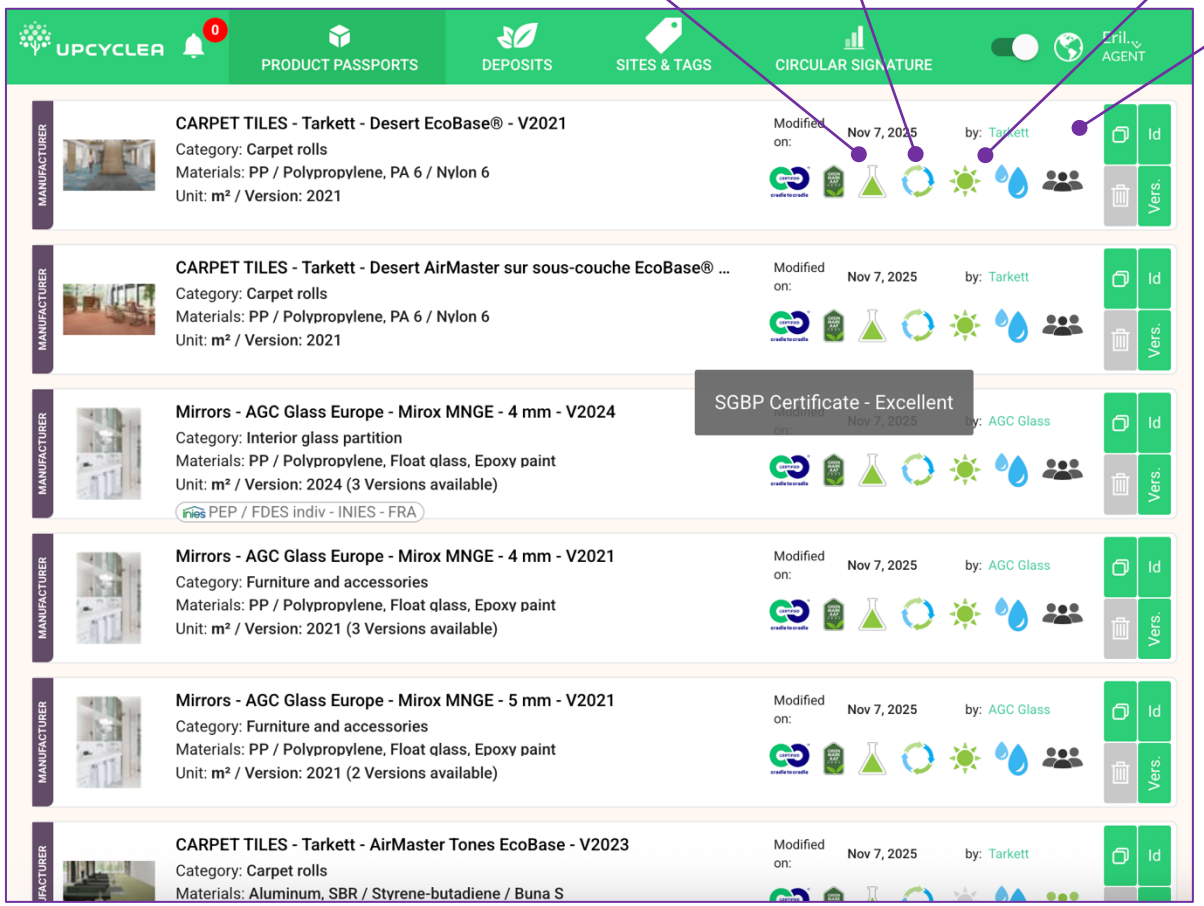
A LIBRARY OF +17,000 DIGITAL PRODUCT PASSPORTS

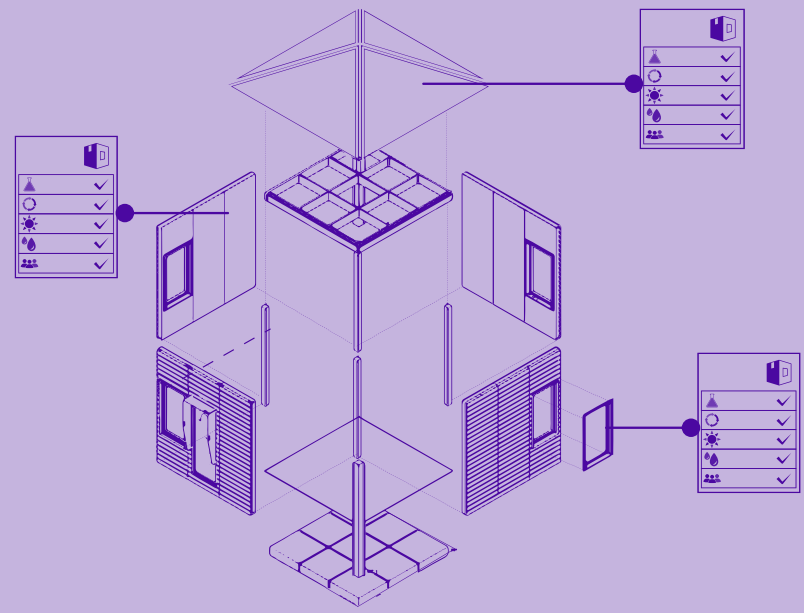
- Product Composition
- Problematic substances?

- % Recycled/bio-based
- Possible Next Lives
- Period of use

- Carbon, Water, Energy Footprints (from EPDs)
- Social Responsibility

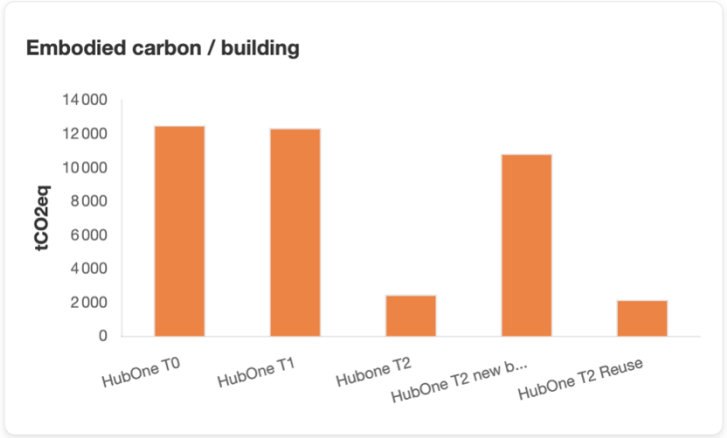
- Production Sites
- Distribution
- Documentation
- Certifications (Cradle to Cradle, SGBP)

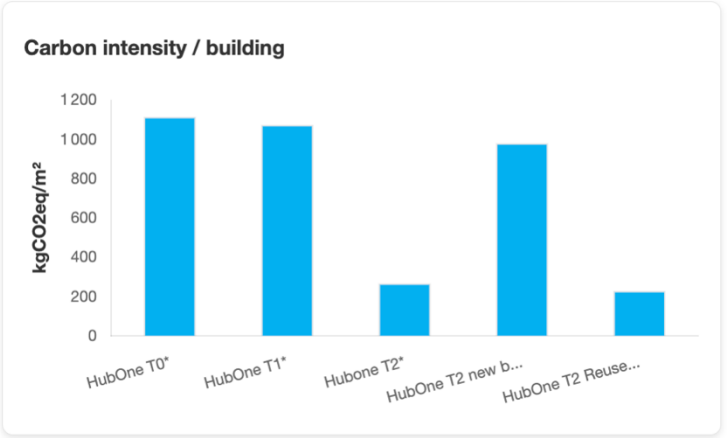


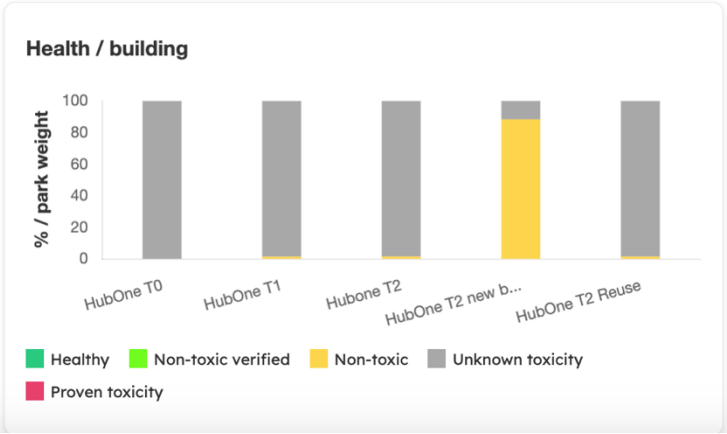


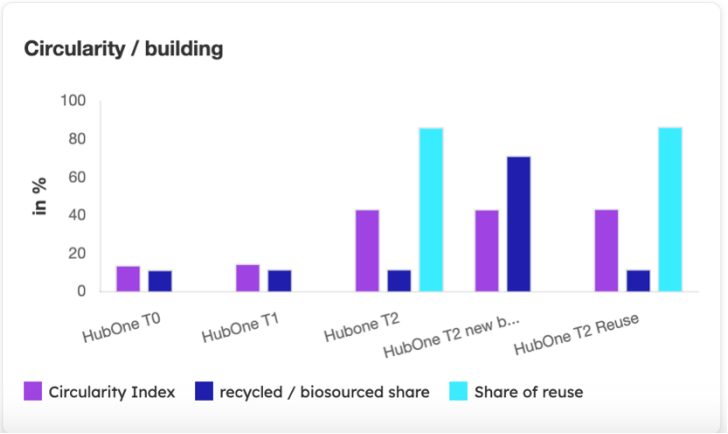
BUILDINGS AS BANKS OF MATERIALS

REAL-TIME ESG INFLOW INDICATORS

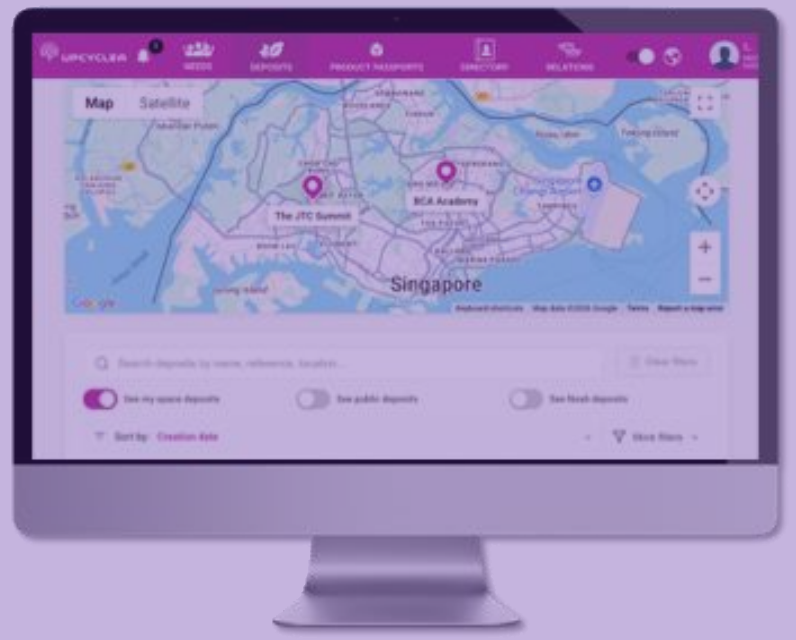








CERTIFIED
cradle to cradle
PRODUCTS PROGRAM



BUILDINGS PASSPORTS

THANK YOU!

Contact: Eric Allodi // CEO Upcyclea
eric@upcyclea.com // +65 8056 1536