

Know What Your Buildings Are Made Of — In Real Time



AI-powered Building Passports for Singapore asset owners, developers & contractors · Powered by Upcyclea

80-80-80

BCA target: 80% of buildings Green Mark certified by 2030

40%

of Singapore's emissions from the built environment

2050

Singapore's net-zero target — embodied carbon now critical

THE CHALLENGE

Operational energy efficiency is increasingly regulated in Singapore — but embodied carbon, the carbon locked into building materials from extraction to construction, now represents a growing share of whole-life emissions and is rapidly moving to the centre of Singapore's decarbonisation agenda. BCA's Green Mark 2021 framework introduced Whole-Life Carbon as a mandatory criterion, and the Built Environment Industry Transformation Map sets ambitious targets for all new and existing buildings to reduce their carbon footprint significantly before 2030.

Yet most asset owners, developers and contractors in Singapore cannot answer a fundamental question: what are your buildings actually made of? Without a verified material inventory, Scope 3 carbon calculations are estimates. Green Mark Whole-Life Carbon submissions rely on assumptions. Reuse potential at renovation or demolition goes unquantified. And Singapore's only offshore landfill, Semakau Island, is projected to reach capacity by 2035 — making material recovery an urgent priority, not a future aspiration.

WHAT IS A BUILDING PASSPORT?

A Building Passport is a verified digital inventory of every product and material in a building — structured, ESG-enriched, and connected to real-time carbon calculations. Think of it as a building's material memory: it knows what every element is made of, where it came from, how much carbon it carries, whether it contains hazardous substances, and what its next life could be when the building is renovated or demolished.

Upcyclea pioneered the concept of the Building Passport — within the EU BAMB research programme in 2015 — a decade before it became a regulatory requirement. Today, Upcyclea manages the world's largest library of Digital Product Passports (20,000+) for construction products, recommended by the UK Green Building Council, and deploys Building Passports at portfolio scale for asset managers, developers and contractors in Singapore, London and across Europe. In Singapore, Building Passports feed directly into the SUM Urban Mining platform for city-wide material reuse.

WHY NOW — THE SINGAPORE REGULATORY CONTEXT

- **BCA Green Mark 2021 (GM:2021)**
Introduces Whole-Life Carbon as a mandatory criterion for new buildings above 5,000 sqm. Building Passports provide the verified material-level data foundation for GM:2021 submissions.
- **Singapore Green Plan 2030**
Sets the national sustainability agenda including an 80% Green Mark target for all buildings by 2030. Upcyclea's platform tracks portfolio-wide Green Mark performance in real time.
- **Built Environment Industry Transformation Map**
BCA's decarbonisation roadmap for Singapore's construction sector, targeting significant embodied carbon reductions across new and existing buildings through 2030 and beyond.
- **SGX Climate Reporting & MAS Guidelines**
Singapore Exchange requires listed companies to report Scope 3 emissions. MAS guidelines extend climate disclosure obligations to REITs and real estate funds. Building Passports enable 1-click, audit-ready Scope 3 calculations across entire portfolios.
- **Semakau Landfill Capacity (2035)**
Singapore's only offshore landfill is projected to reach capacity by 2035. Building Passports unlock the reuse potential of demolition materials, feeding directly into SUM — Singapore Urban Mining.

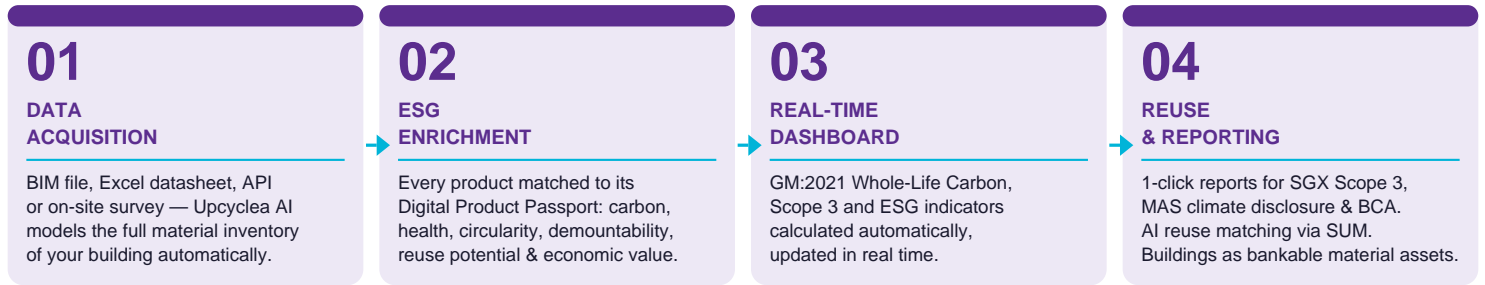
→ [Get your Building Passport — book a free demo today](#)

How It Works & What You Get



From first inventory to real-time ESG reporting — end to end

HOW IT WORKS



WHAT YOU GET — 8 REAL-TIME ESG INDICATORS PER BUILDING

- **Embodied carbon (kgCO₂e)**
Per product, per building, per portfolio. Aligned with GM:2021 & SS EN 15978.
- **Material health score**
% healthy / non-toxic / unknown — aligned with WELL & Cradle to Cradle.
- **Demountability score**
Reversibility rating per product — foundation of reuse planning via SUM.
- **Economic residual value**
Financial value of recoverable materials at end of use.
- **Carbon intensity (kgCO₂e/m²)**
Benchmarkable against BCA Green Mark Whole-Life Carbon thresholds.
- **Circularity Index**
Share of recycled, bio-sourced and demountable materials per building.
- **Reuse share**
% of materials with a verified next life via SUM or other reuse channels.
- **Scope 3 carbon (1-click)**
Audit-ready SGX climate disclosure and MAS output, generated automatically.

USE CASES BY PROFILE

ASSET OWNERS & DEVELOPERS

- GM:2021 Whole-Life Carbon
- SGX Scope 3 compliance
- MAS climate risk disclosure
- Portfolio decarbonisation strategy
- Residual value of materials

CONTRACTORS & ARCHITECTS

- BCA Green Mark submissions
- Eco-design from DPP library
- Pre-demolition reuse planning
- SUM deposit creation
- Whole-life carbon at design stage

PUBLIC SECTOR & POLICYMAKERS

- BCA Built Environment ITM KPIs
- Singapore Green Plan 2030 data
- Semakau waste diversion evidence
- SUM urban mining policy base
- Portfolio carbon dashboard

WHY UPCYCLEA?

- **10 years ahead**
We invented the Building Passport concept in 2015 — before it was regulation.
- **SUM-connected**
Building Passports feed directly into Singapore's SUM urban mining platform.
- **Portfolio scale**
From a single building to thousands — same platform, same data standard.
- **20,000+ DPPs**
The world's largest verified ESG library for construction products.
- **GM:2021 ready**
Pre-configured for BCA Green Mark Whole-Life Carbon submissions.
- **Proven results**
96% material recovery · 25% reuse by operation · Domofrance, Chanel, Obay

→ [Get your Building Passport — book a free demo today](#)