A Building Owner, Architect, and Builder Walk into a Speakeasy…

Let's Talk Glass Recycling!

GFAB™
NGA Glass Fabricator Conference
NGA
NATIONAL GLASS ASSOCIATION with GANA

Owner/Operator

Sydney Mainster
AIA, LEED AP

VP of Sustainability & Design Management

The Durst Organization

Builder

Nelson Russom
LEED GA, WELL AP, TRUE Advisor

Waste and Circularity Program Manager

Turner Construction Company

Architect

Stephen Katz
AIA, NCARB, LEED AP BD+C

Principal, Technical Director

Gensler

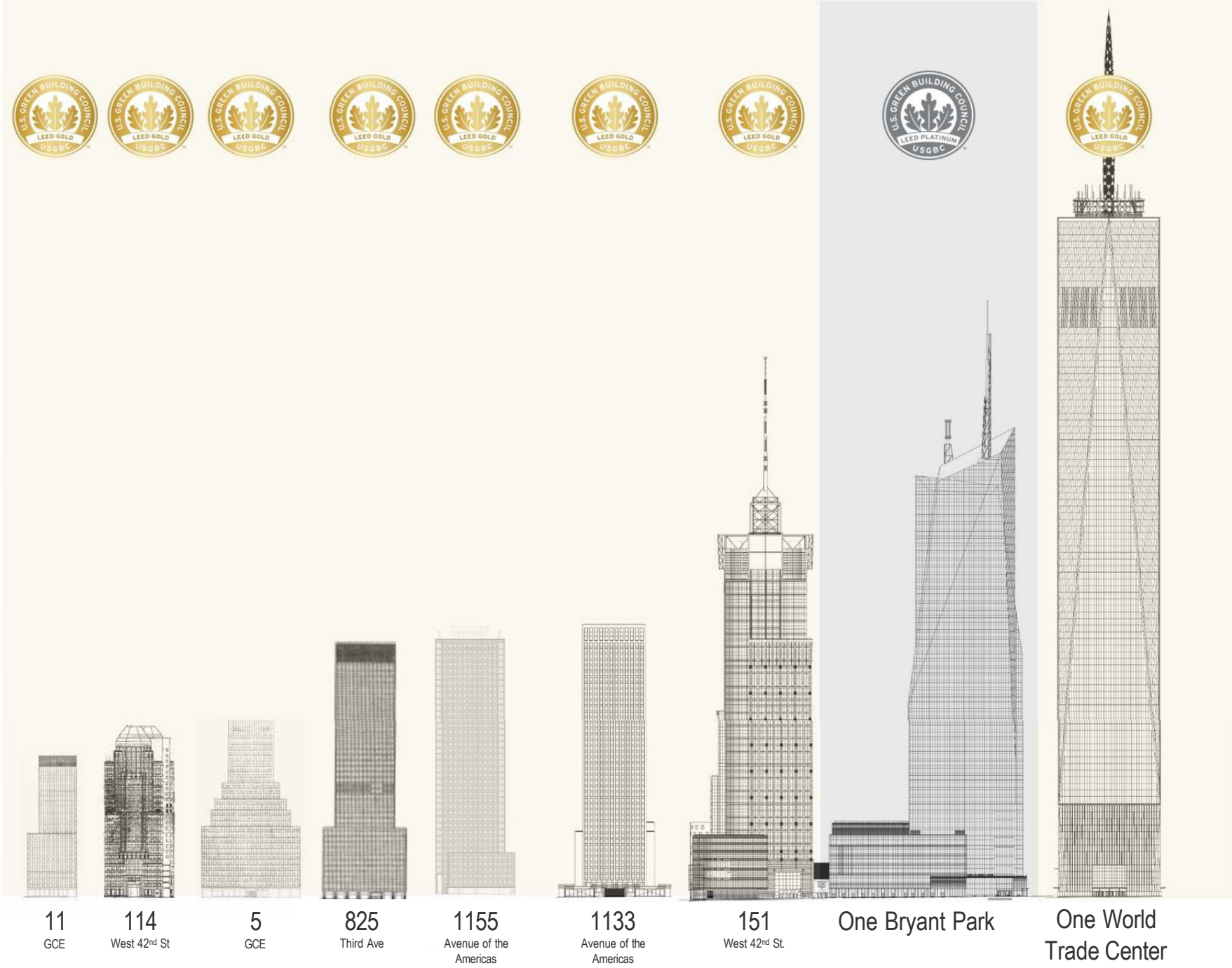
Moderator

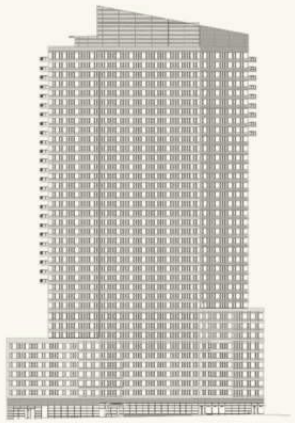
Georgia Oehler

Senior Manager, Technical Services Sustainability

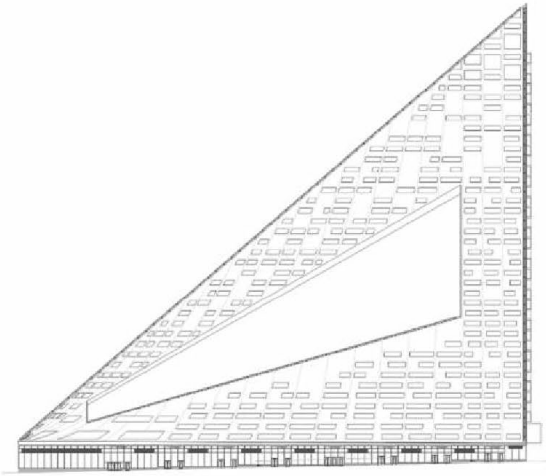
National Glass Association

Commercial Properties



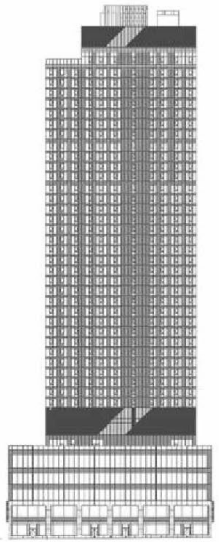


HELENA 57 WEST



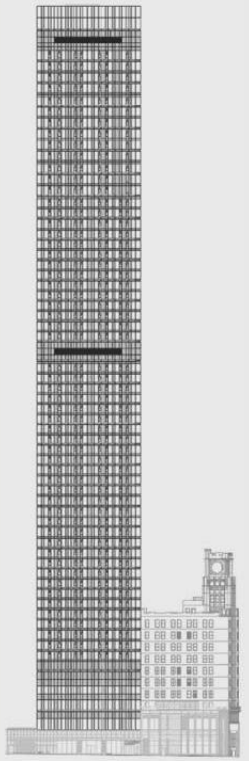
VIA 57 WEST

FRANK 57 WEST

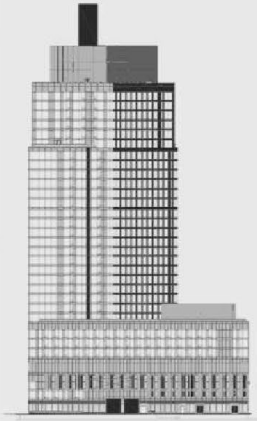


EOS

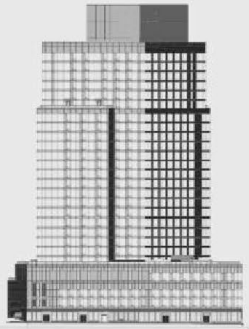
10 HALLETTS POINT



SVEN



30 HALLETTS POINT



20 HALLETTS POINT

Durst

Residential Properties

49th Floor, One Bryant Park BoA Tower

Commercial Office Reclamation

Building Product Recovery and Recycling

49th Floor, One Bryant Park BoA Tower

Interior Commercial Office Glass Pilot at One Bryant Park

Architectural Glass Recovery and Recycling

49th Floor, One Bryant Park BoA Tower

Interior Commercial Office Glass Pilot at One Bryant Park

Architectural Glass Recovery and Recycling

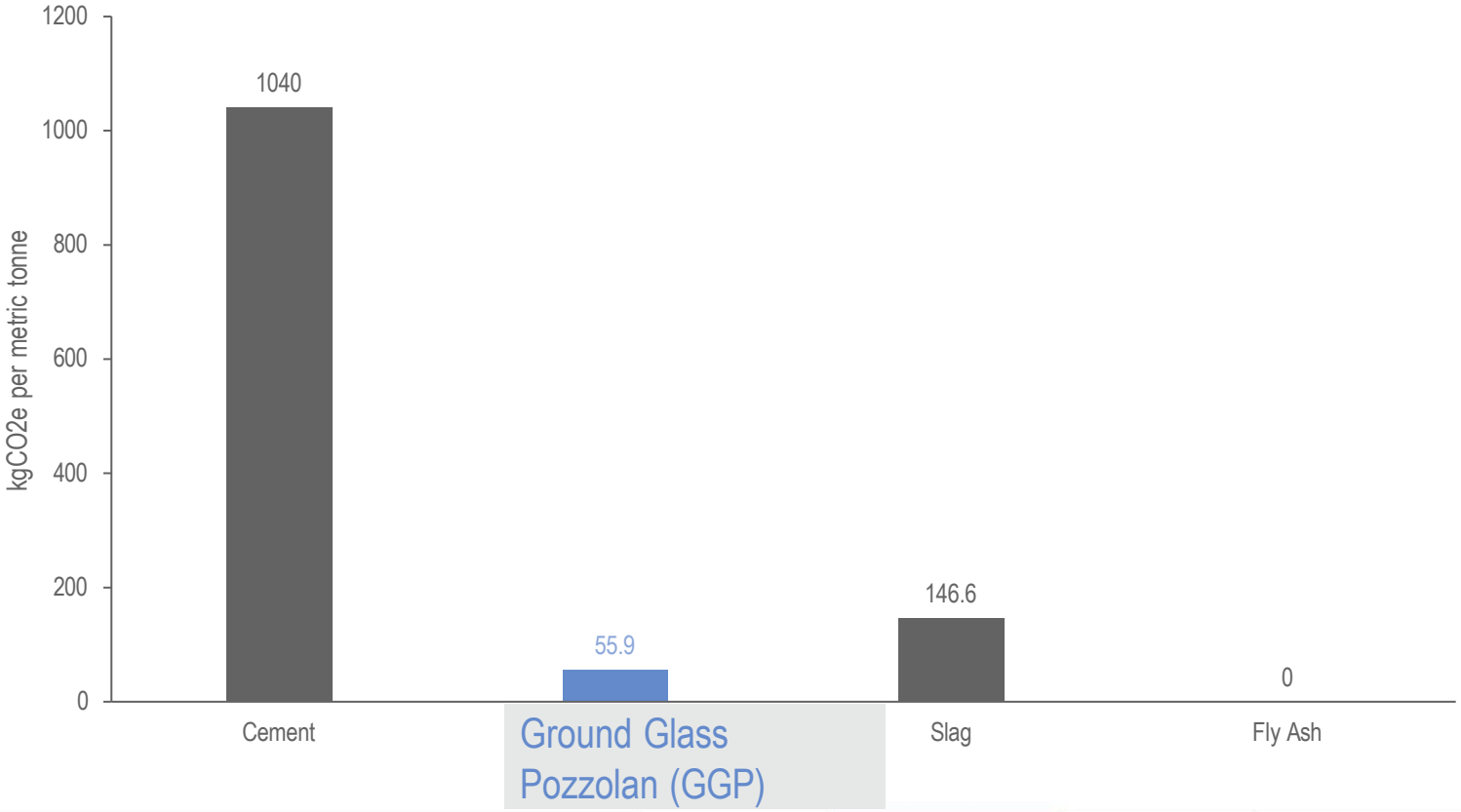
Loading Dock, One Bryant Park BoA Tower

Demolished Glass for Removal at One Bryant Park

Float Glass Recovery and Recycling

Stakeholder Ecosystem

Architectural Glass Recovery and Recycling



GWP Impacts (kg CO2e) of Cement + SCMs [1] per 1 metric tonne	Cement	GGP	Slag	Fly Ash
	1,040	55.9	146.6	0[2]

[1] Cement, Slag, + Fly Ash GWP Impacts are all Industry Average. Ground-Glass Pozzolan (GGP) Impact is Product-Specific to Pozzotive made @ Urban Mining's Beacon Falls facility. No GWP impacts factor in transport to US Concrete batch plants.

[2] Includes no processing of stored fly ash, which is increasingly necessary due to changes in availability/supply.

Lower Embodied Carbon Concrete

Recycled Ground Glass Pozzolan (GGP) Replacing Cement in High-Performance Concrete

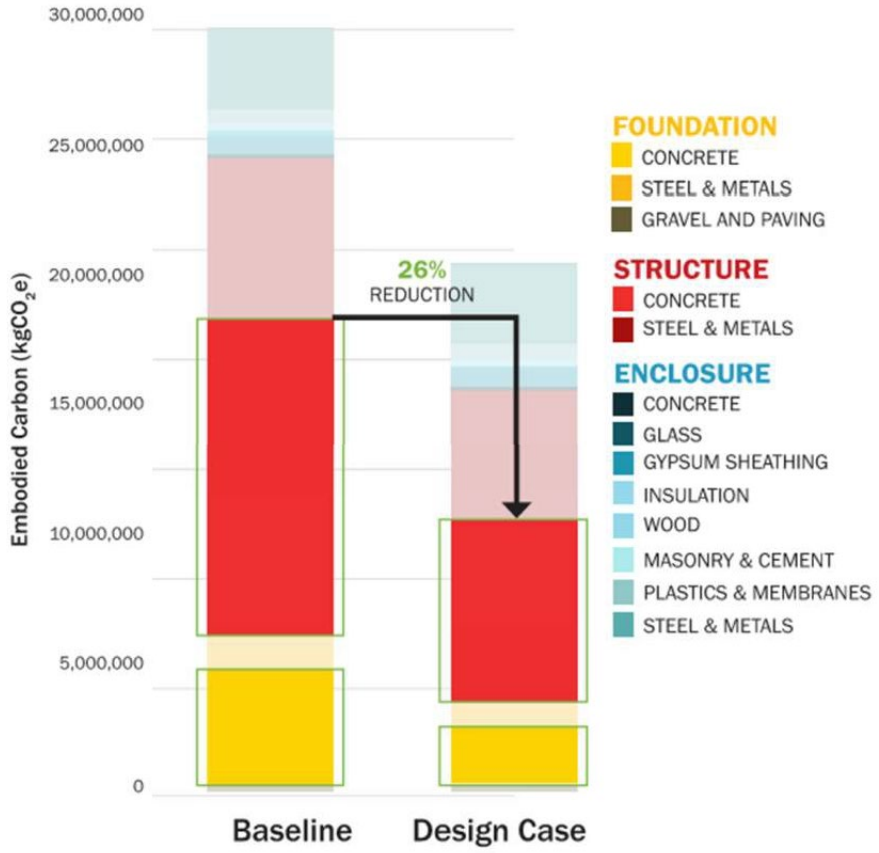


FIGURE 9 - CONCRETE GWP REDUCTION

Concrete w. GGP	Concrete w.o. GGP	Total Concrete
18290.5 CY	25854.5 CY	44145 CY
41.43%	58.57%	


20-30 Halletts Point
Credit: Field Condition

Lower Embodied Carbon Concrete

Recycled Ground Glass Pozzolan (GGP) as SCM at 20-30 Halletts Point

CONTRACTOR - UAG
Oversees drywall installation; Site separates construction waste

NEW GYPSUM WALLBOARD

BUILDING PRODUCT MANUFACTURER – CertainTeed/Saint-Gobain

paper

gypsum

RECYCLER – CertainTeed/Saint-Gobain processes materials

NEW WALLBOARD TRIM SCRAP

HAULER - Cardella transports materials

NEW WALLBOARD TRIM SCRAP

SORTING FACILITY – Cooper Tank receives and stockpiles materials

NEW WALLBOARD TRIM SCRAP


VIA 57 West

Closed Loop Gypsum Wallboard

Trim scrap site separation, recycling, manufacturing at 20-30 Halletts Point

Introductions

Builder

Scan to Access

Introductions

Architect

Circularity in Practice at Gensler

NGA Glass Fabricator Conference

06.16.2026

Stephen Katz, AIA, LEED AP BD+C
Principal - Technical Director

OUR FIRM

57 Offices Worldwide
6000+ Professionals
32 Practice Areas
100% Employee Owned

OFFICE LOCATIONS

NORTH AMERICA
Atlanta
Austin
Baltimore
Boston
Charlotte
Chicago
Columbus
Dallas
Denver
Detroit
Houston
Kansas City
La Crosse
Las Vegas
Los Angeles
Miami
Minneapolis
Morristown
Nashville
New York
Newport Beach
Oakland
Philadelphia
Phoenix
Raleigh
San Antonio
San Diego
San Francisco
San Jose
Seattle
Tampa
Toronto
Vancouver
Washington, D.C.

LATIN AMERICA
Bogotá
Mexico City
Monterrey
San José
Dominican Republic

EUROPE
Berlin
Birmingham
London
Munich
Paris

MIDDLE EAST
Abu Dhabi
Dubai
Riyadh

GREATER CHINA
Beijing
Hong Kong
Shanghai

ASIA PACIFIC
Bangalore
Bangkok
Delhi NCR
Mumbai
Singapore
Sydney
Tokyo

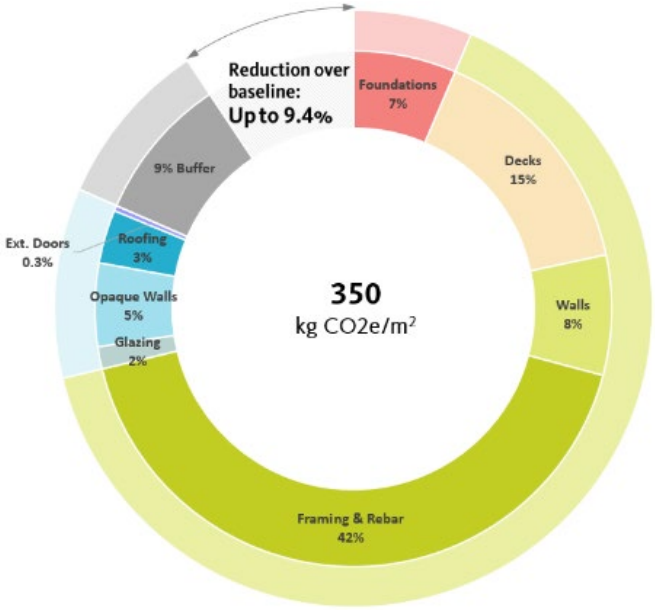
Gensler

OUR RESPONSIBILITY

Gensler designs ~1 Billion sf annually,
40% is workplace

On average, workplace materials have
a 10-year life before going to landfill

Our Approach



A “whole-lifecycle” view of materials (including glass)

Gensler focuses on the full lifecycle impact of building materials – from manufacturing through reuse.

Our **Gensler Product Sustainability (GPS) Standards** set criteria for materials (including architectural glass) based on:
- embodied carbon
- recycled content
- health/toxicity
- lifecycle transparency

The standards explicitly push manufacturers toward:
- higher recycled content
- better environmental product declarations (EPDs)
- alignment with certifications

For glass, this means encouraging lower-carbon production and products.

Gensler

Material Standards (GPS)

18

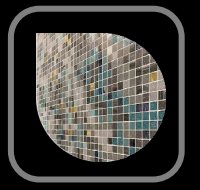
Establishes sustainability performance criteria for the top 18 most commonly used, high-impact product categories selected for interior projects.


Access Flooring

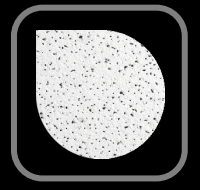

Broadloom Carpet

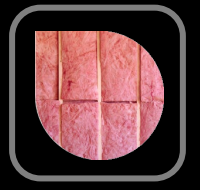

HM Doors + Frames

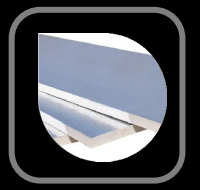

Textiles


Tile


Wallcovering

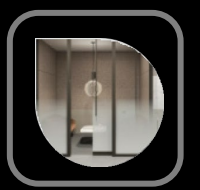

ACTs, Panels + Grids


Batt Insulation

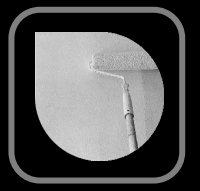

Board Insulation


Carpet Tile


Decorative Glass


Demountable Partitions


Gypsum Board


Interior Latex Paint


Non-Structural Metal Framing


Resilient Flooring + Base


Systems Furniture


Task Chairs

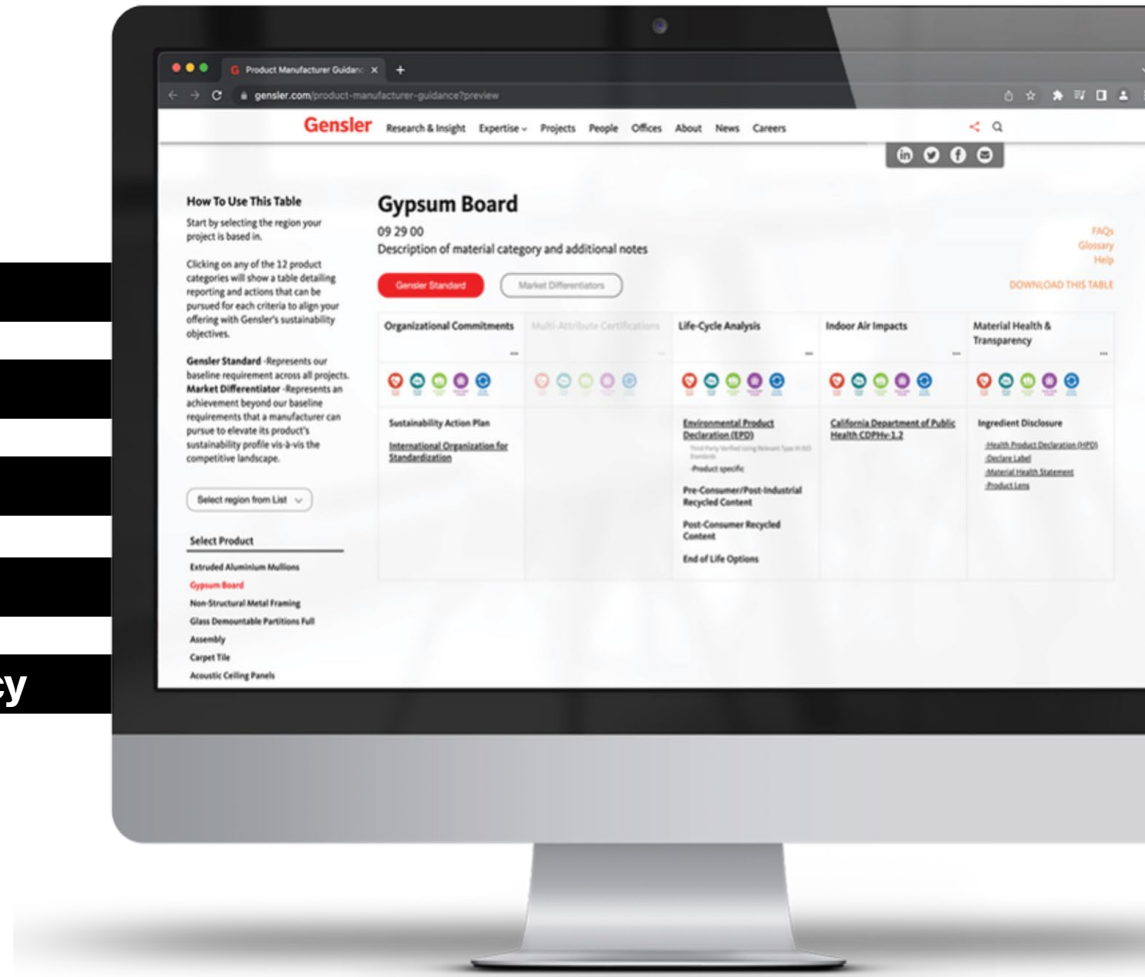
Gensler

Material Standards (GPS)

5

Impact Areas

- Organizational Commitments
- Multi-Attribute Certifications
- Life-Cycle Impacts
- Indoor Air Impacts
- Material Health & Transparency



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Our Approach

Circular economy mindset: reuse and recycling aspects

The most sustainable material is the one you don’t have to manufacture again.

We prioritize:
- adaptive reuse of buildings
- salvaging and repurposing materials
- designing for future flexibility and disassembly

Deconstruction instead of demolition can preserve significant material volume.

For glass:
- Reusing existing façade systems and possibly glazing (when possible) is preferred over recycling.
- When reuse isn’t feasible, materials are selected to be recyclable and compatible with circular supply chains.

Our Approach

Performance-first glass design (reducing operational carbon)

Glass is also treated as a performance system, not just a material.

Glass assemblies are specified glass to:
- improve daylight which reduces artificial lighting demand
- controls solar heat gain which reduces HVAC energy
- supports occupant wellbeing (views, natural light)

This aligns with a major sustainability principle of reducing operational carbon over a building's lifetime.

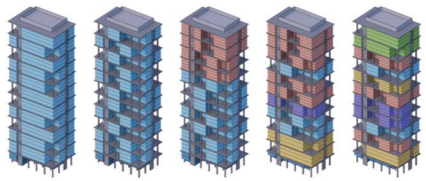
Research

CASE STUDY I RESEARCH GRANT

The 600-Year Office

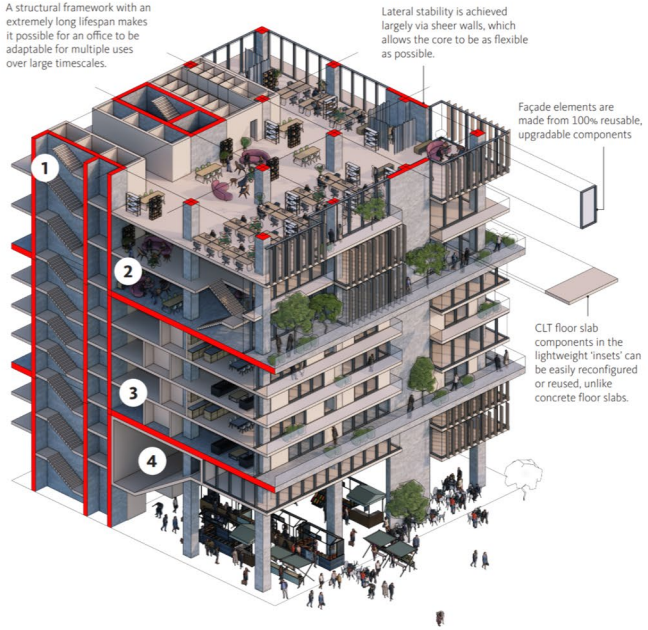
Instead of planning only 60 years in advance, what would it look like if we designed an office building to thrive for 600 years?

The 600-Year Office is a progressive vision that pushes building lifespans to the extreme by asking how we can design for long-term use. With today's technology and infrastructure, it is possible to construct buildings that extend the lifespan of their carbon-intensive structure, while being adaptable enough to thrive in an uncertain future. By investigating future scenarios and developing a framework with a long lifespan capable of supporting changing needs, we can design buildings that are far more resilient than those of the past. On day one, the 600-Year Office is single-use, but contains the potential for multiple future adaptations. By 2090, the building is prepared to reconfigure some or all levels as residential and amenities as needed. In 2330, the building has several strategies, including a more flood-resistant ground floor. The initial design is flexible enough to accommodate future climate resilience strategies, and the ground floor can be upgraded as needed. By 2630, significant portions of the building are dedicated to improving a city's biodiversity and enhancing human experience through biophilia.



Planning for the far future

A structural framework with an extremely long lifespan makes it possible for an office to be adaptable for multiple uses over large timescales.

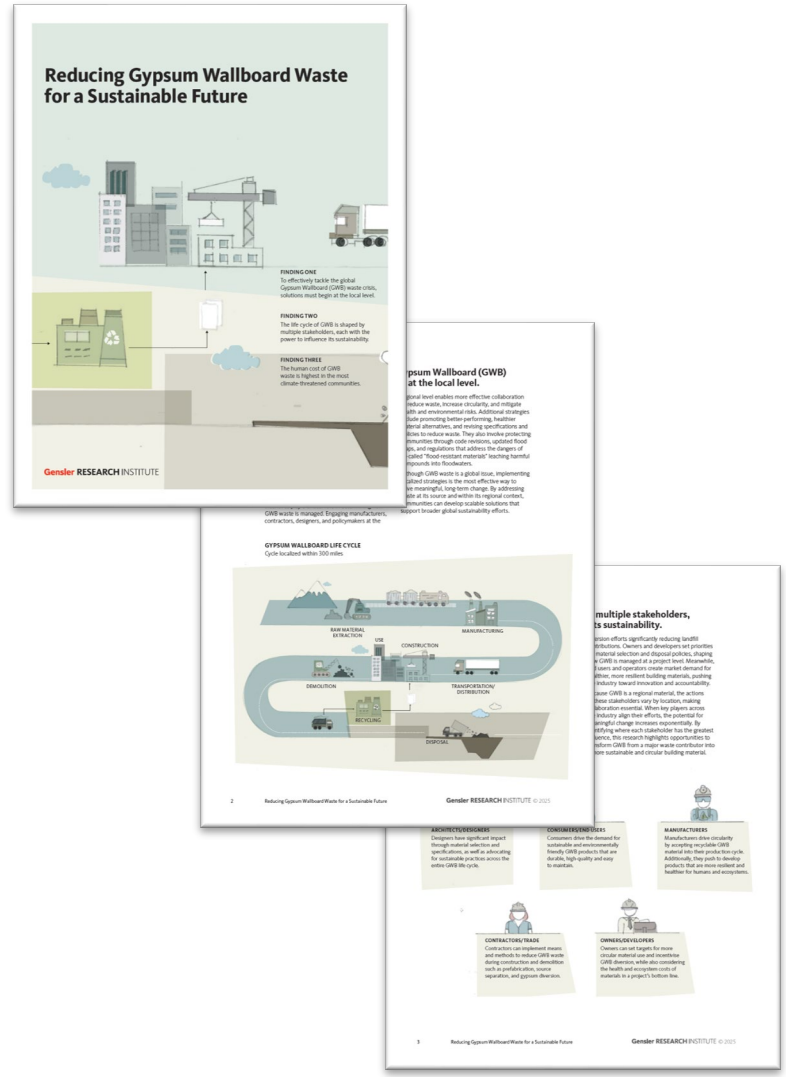


1 Framework
A structural framework with an extremely long lifespan makes it possible for the rest of the building to be constructed from lightweight, reusable components and materials.

2 Office
On day one, the building is primarily office use—the 12m high modules of the framework are divided into three office levels with a 4m floor-to-floor height.

3 Residential
Future residential uses can be accomodated at higher density by dividing the 12m height into four 3m levels.

4 Residential
The 12m floor-to-floor height of the fundamental framework allows almost any amenity or other use.



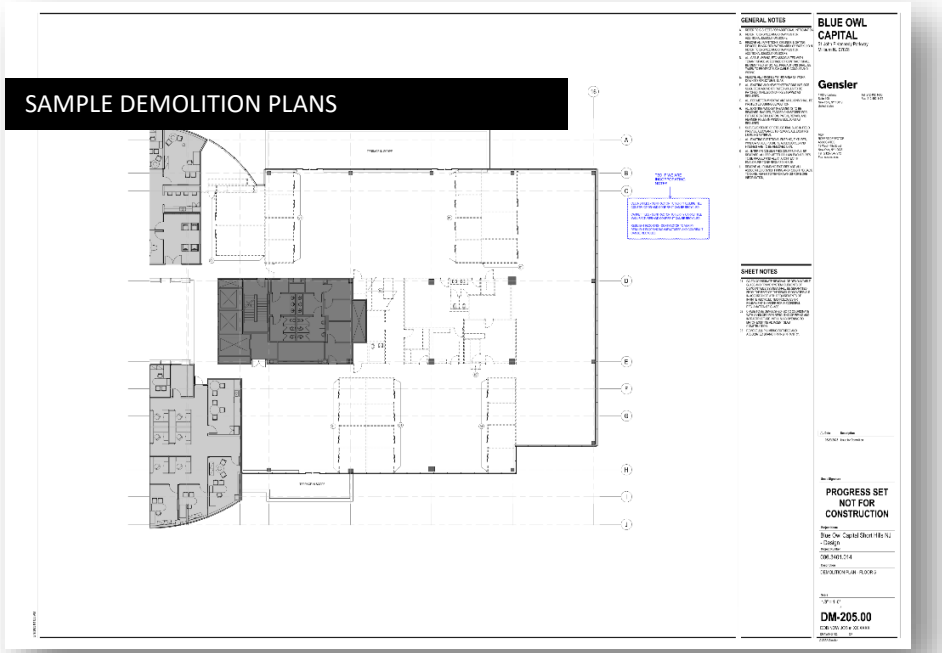
Gensler

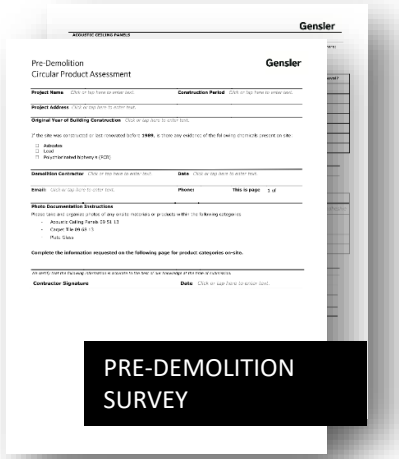
Projects + Pilots

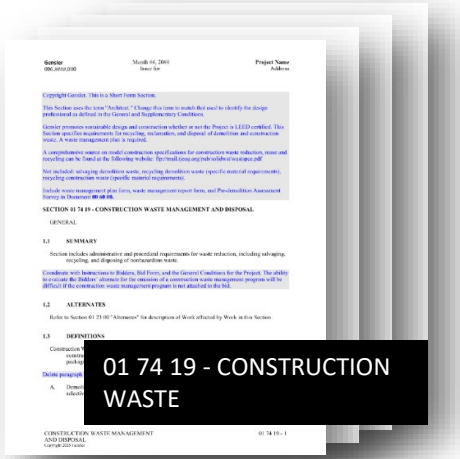
Waste diversion Specifications

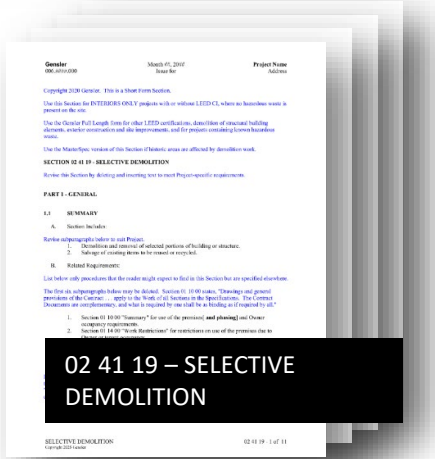
For all projects with demolition in scope, we are piloting source separation to recover three market-ready materials :

- **Acoustic ceiling panels**
- **Carpet tile**
- **Architectural glass**









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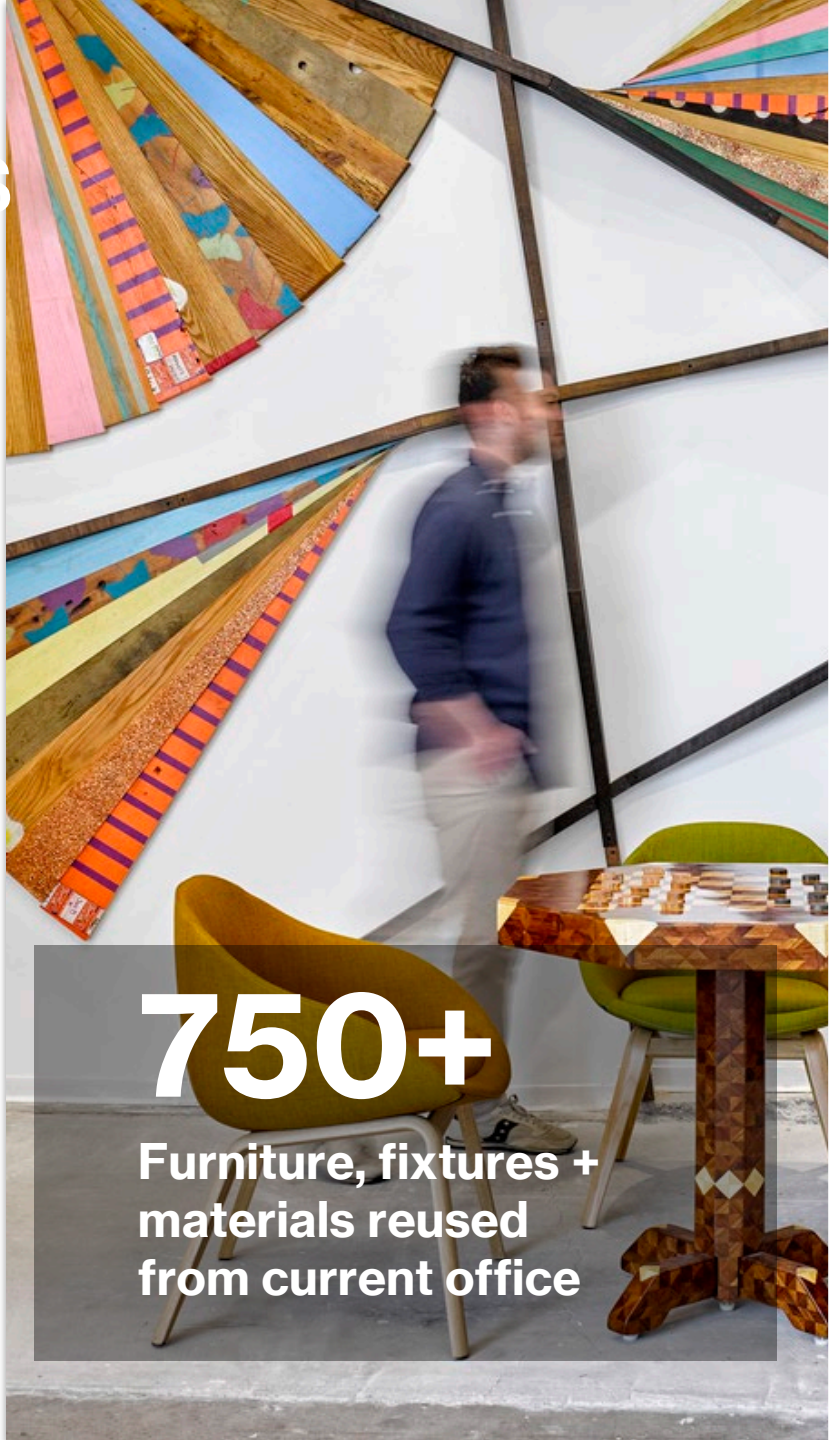
Projects + Pilots

Etsy HQ

800

linear feet of NYC wood scaffolding salvaged for reuse



750+

Furniture, fixtures + materials reused from current office

1,150

Linear feet of reclaimed water tower wood salvaged from the existing building

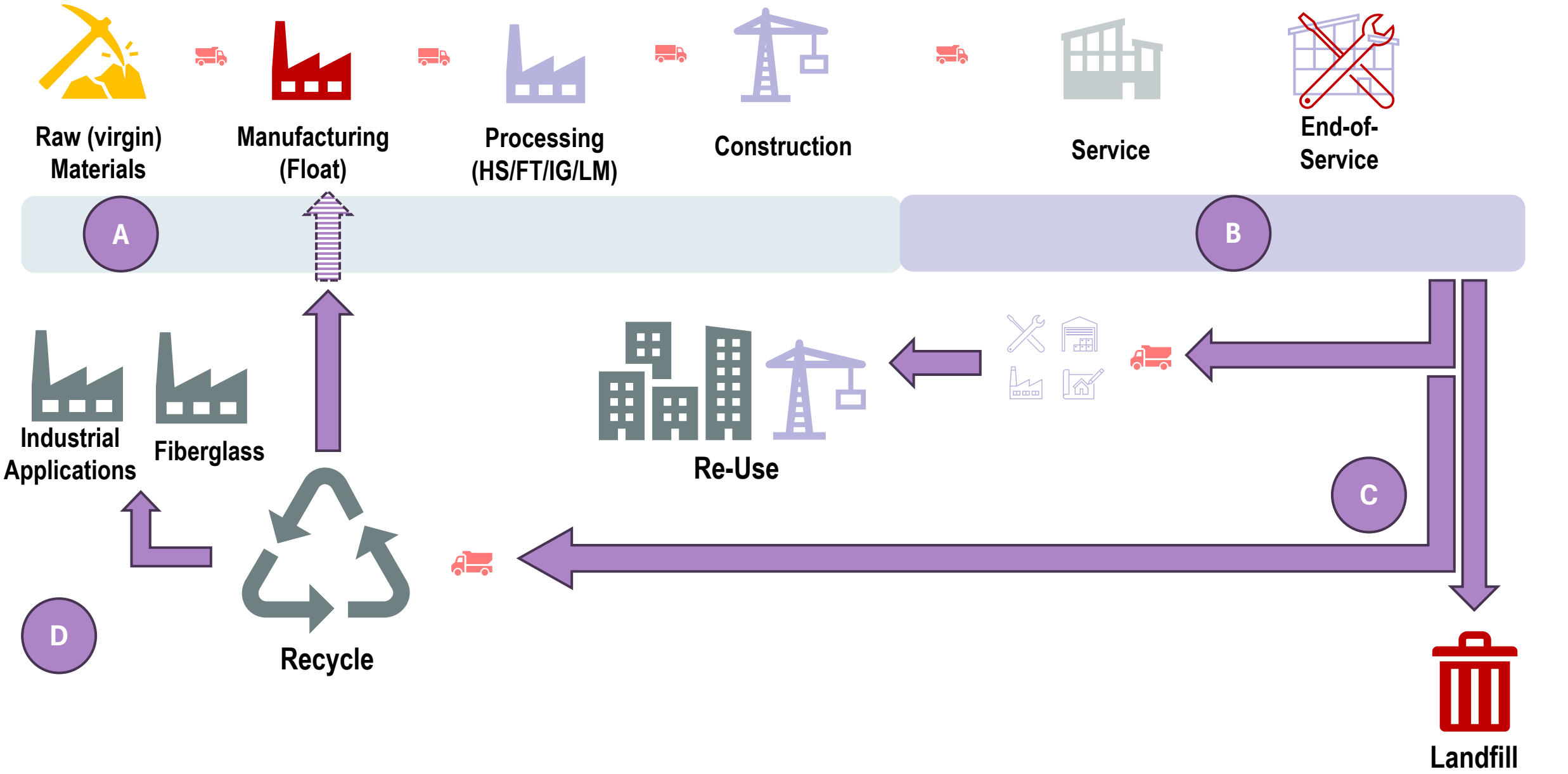
Gensler

Thank you!

Stephen Katz, AIA, LEED AP BD+C
Principal - Technical Director

FRAMING THE DISCUSSION

Architectural Glass Value Chain ▪ Circularity



Glass broken on the floor
Swept-up, loaded wheelbarrows
Brought to our containers in loading dock

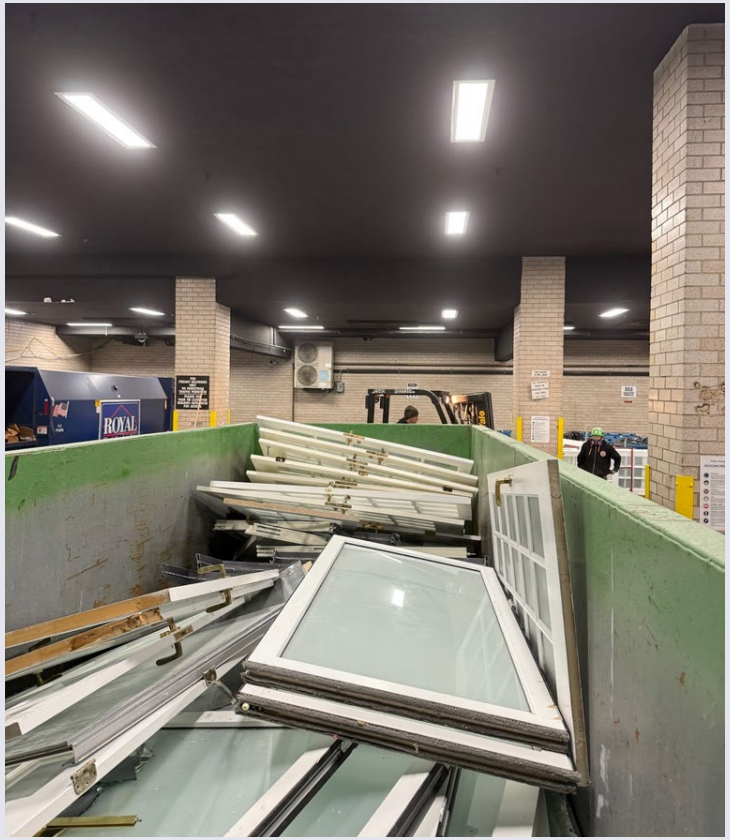
Modernization of Interiors
Demolition of the existing interiors
to 48-49th floors

One Bryant Park • Interior Fit-out

Courtesy:
The Durst Organization

Night-time Staging

Loading of Doors/Windows in loading dock



Finished Product at IRT Facility

NATIONAL GLASS ASSOCIATION

345 Park Avenue • Interior Demo of 17th Floor

Façade Glass Recycling
1111 Westchester Avenue

White Plains, NY
270k sf Office ---> Healthcare Reno
(400) 60"x70" glass units

Site Logistics:

- Caulk cut around window perimeter
- Electric Manipulator loosens, removes glass from interior
- A-frame panel truck transfers 2-3 panes glass/load to cellar staging
- Bobcat transfers 10-12 panes/scoop to Infinite-delivered 30 yd roll-off
- 30 yd roll-off transports ~200 panes, or ~20 tons glass/load to Albany for processing
- 40 tons glass recycled into fiberglass insulation

NATIONAL GLASS ASSOCIATION

Full Building Demolition
Exterior Glass Removal

Whole Windows
Removed
Staged on Floors

Hauling done by Cardella
30 yard rolloff

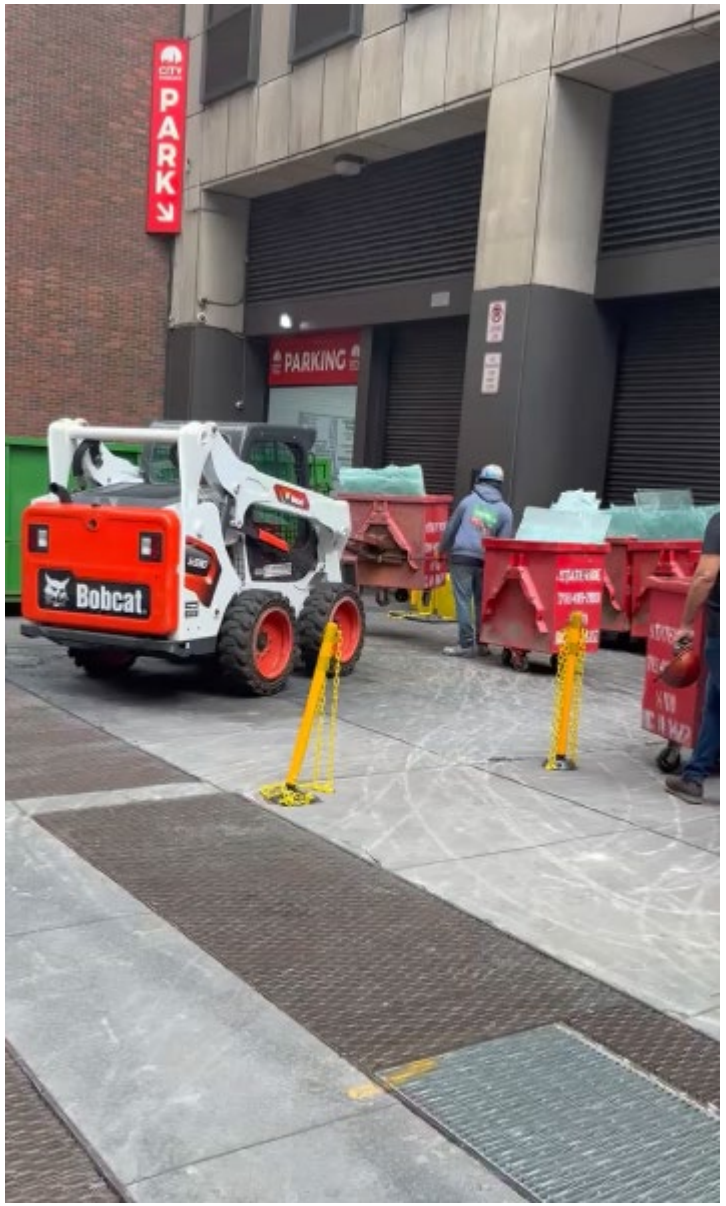
1233 York Avenue - NYC

Courtesy:
Consigli / Turner Construction Co

1133 Ave of the Americas, 34th and 35th Floor*

Interior Office Front Glass Removal

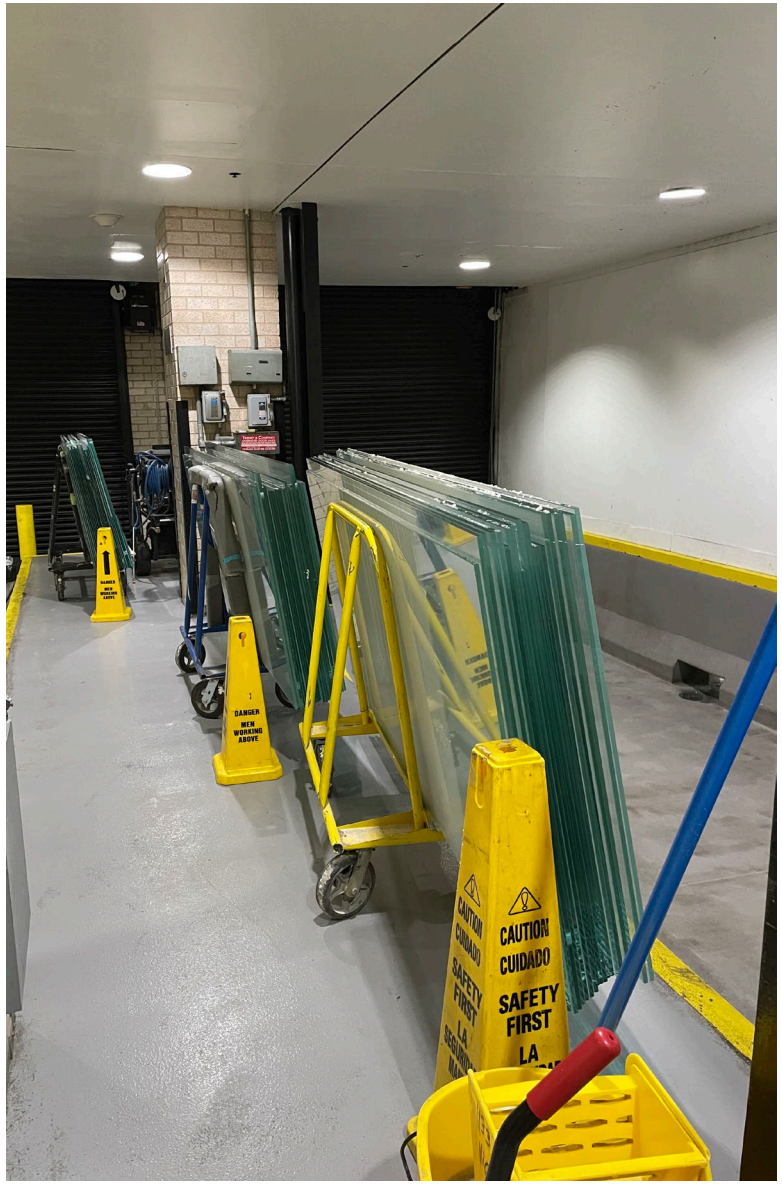
Courtesy:
The Durst Organization

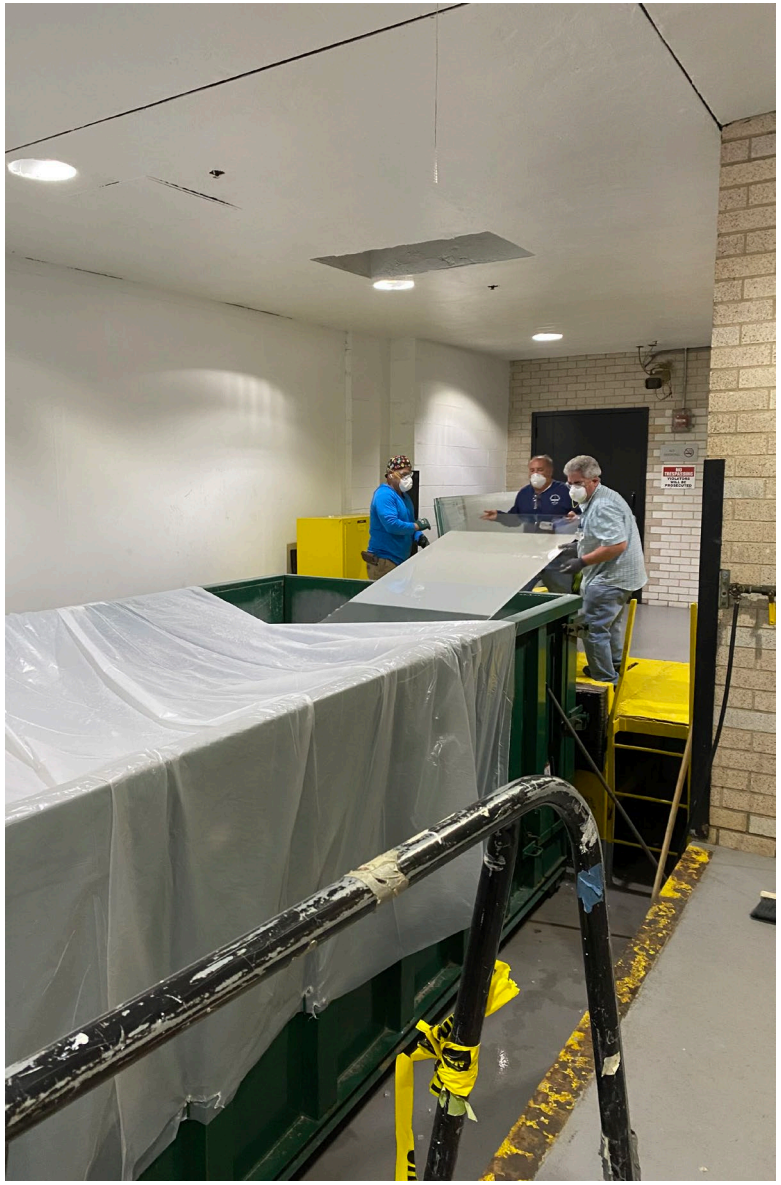


1133 Ave of the Americas, 34th – 35th Floors

Courtesy:
The Durst Organization

Interior Office Front Glass Removal



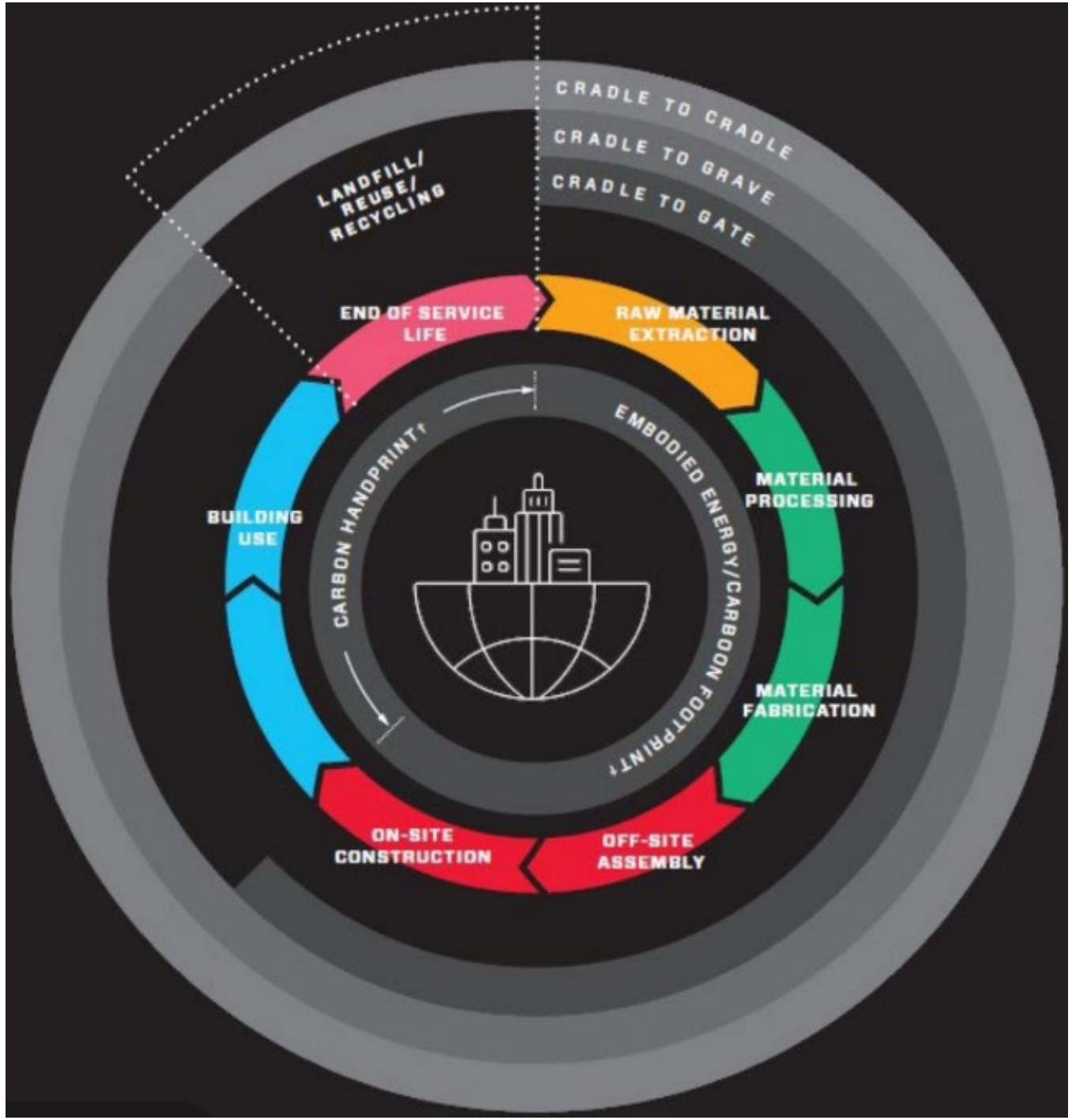


1133 Ave of the Americas, 32nd Floor

Interior Office Front Glass Removal

Courtesy:
The Durst Organization

Sometimes...things don't go as planned


CRADLE TO CRADLE
CRADLE TO GRAVE
CRADLE TO GATE
LANDFILL/
REUSE/
RECYCLING
END OF SERVICE
LIFE
RAW MATERIAL
EXTRACTION
MATERIAL
PROCESSING
MATERIAL
FABRICATION
OFF-SITE
ASSEMBLY
ON-SITE
CONSTRUCTION
BUILDING
USE
CARBON HANDPRINT™
EMBODIED ENERGY/CARBOON FOOTPRINT™