Breakout: Sustainable Exhibits and Resource Management | Friday, Oct. 30; 10:45-12:00

Sustainable Exhibits & Resource Management

Facilitators



Adam Mitchell, AIA, LEED AP, CPHC
Architect & Exhibit Designer
Sustainability Principal
CambridgeSeven



Leslie Tom
Chief Sustainability Officer
Charles H. Wright Museum of
African American History



Camille Kirk
Sustainability Director
The J. Paul Getty Trust

Learning objectives

By the end of this session, you will be able to:

1. Develop tools, process calculators, and collaborations for greening exhibitions and creating sustainable exhibits

2. Understand the larger context of green exhibits and sustainable exhibitions

3. Identify opportunities and understand the importance of regional collaboration

Agenda

What we'll cover in this session:

1. Sustainable Exhibits: Where to Start (15 minutes)
2. Two Case Studies (40 minutes).
3. Discussion and Q&A (20 minutes).

Presentation Topics



Adam Mitchell
Sustainable Exhibits



Leslie Tom
A Hyperlocal d.Tree Exhibit Case Study



Camille Kirk
Creating Climate Impact through Collaboration

Sustainable Exhibits – Where to Start?



ENVIRONMENTAL JUSTICE



HUMAN HEALTH



ECOSYSTEM HEALTH



CLIMATE HEALTH



CIRCULAR ECONOMY



1. Social Health and Environmental Justice

- Meaningful involvement of all people regardless of race, color, national origin or income with respect to decisions about the environment.
- Same degree of protection for all from environmental health hazards.



Problem of Vinyl & PVC

- Factories in BIPOC communities in “Cancer Alley,” Louisiana
- Dioxins from PVC production poison drinking water, contaminate air, forced some towns to relocate
- Shown to cause cancer, endocrine disruption, neurological damage
- Race is most significant predictor of living close to a source of pollution



Diversity, Equity, Inclusion, Accessibility

- Diversity on Design Team
- Pay a Living Wage
  - No forced, slave, or child labor in supply material supply chains
- Community Outreach
- Accessibility
  - ADA, Neurological Diversity, Multi-lingual, etc.

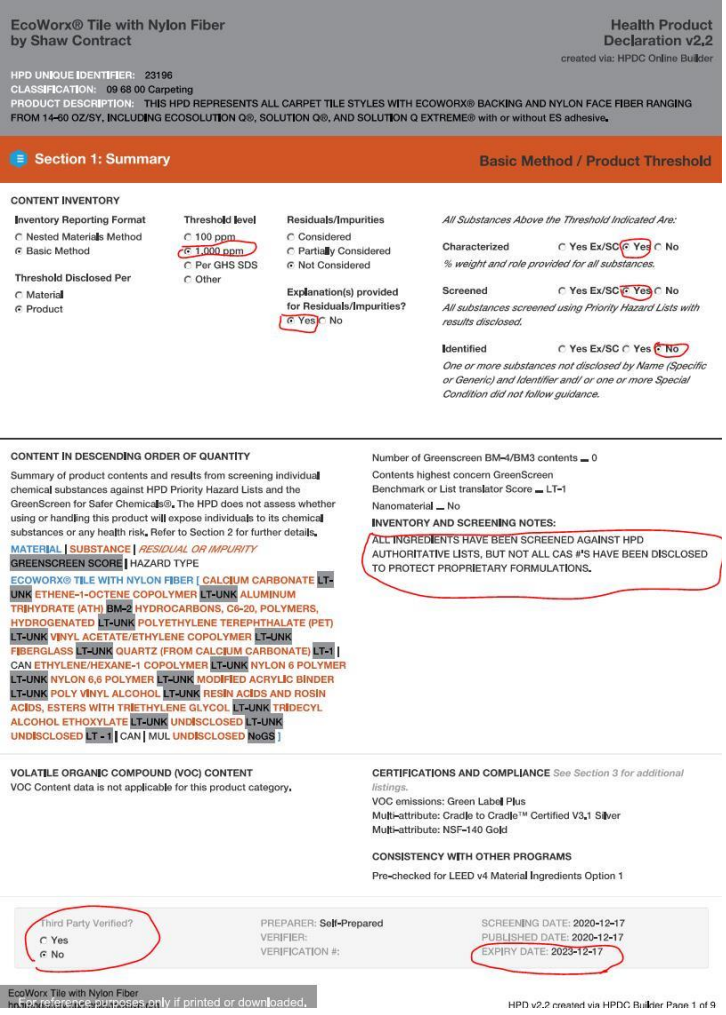


2. Human Health = Avoid Toxic Chemicals

- Start with materials touched by visitors, and especially those touched by children

Most Common:

- PVC – flooring, wallpaper, graphic substrates
- Formaldehyde – in woods and fabrics
- VOCs – adhesives, paints, carpets



EcoWorx® Tile with Nylon Fiber
by Shaw Contract

Health Product Declaration v2.2
created via: HPDC Online Builder

HPD UNIQUE IDENTIFIER: 23196
CLASSIFICATION: 09 68 00 Carpeting
PRODUCT DESCRIPTION: THIS HPD REPRESENTS ALL CARPET TILE STYLES WITH ECOWORX® BACKING AND NYLON FACE FIBER RANGING FROM 14-60 OZ/SY, INCLUDING ECOSOLUTION Q®, SOLUTION Q®, AND SOLUTION Q EXTREME® with or without ES adhesive.

Section 1: Summary — Basic Method / Product Threshold

CONTENT INVENTORY

Inventory Reporting Format
○ Nested Materials Method
◉ Basic Method

Threshold Disclosed Per
○ Material
◉ Product

Threshold level
○ 100 ppm
◉ 1,000 ppm
○ Per GHS SDS
○ Other

Residuals/Impurities
○ Considered
○ Partially Considered
◉ Not Considered

Explanation(s) provided for Residuals/Impurities?
◉ Yes ○ No

All Substances Above the Threshold Indicated Are:

Characterized — ○ Yes Ex/SC ◉ Yes ○ No
% weight and role provided for all substances.

Screened — ○ Yes Ex/SC ◉ Yes ○ No
All substances screened using Priority Hazard Lists with results disclosed.

Identified — ○ Yes Ex/SC ○ Yes ◉ No
One or more substances not disclosed by Name (Specific or Generic) and Identifier and/ or one or more Special Condition did not follow guidance.

CONTENT IN DESCENDING ORDER OF QUANTITY

Summary of product contents and results from screening individual chemical substances against HPD Priority Hazard Lists and the GreenScreen for Safer Chemicals®. The HPD does not assess whether using or handling this product will expose individuals to its chemical substances or any health risk. Refer to Section 2 for further details.

MATERIAL | SUBSTANCE | *RESIDUAL OR IMPURITY*
GREENSCREEN SCORE | HAZARD TYPE

ECOWORX® TILE WITH NYLON FIBER [CALCIUM CARBONATE LT-UNK ETHENE-1-OCTENE COPOLYMER LT-UNK ALUMINUM TRIHYDRATE (ATH) BM-2 HYDROCARBONS, C6-20, POLYMERS, HYDROGENATED LT-UNK POLYETHYLENE TEREPHTHALATE (PET) LT-UNK VINYL ACETATE/ETHYLENE COPOLYMER LT-UNK FIBERGLASS LT-UNK QUARTZ (FROM CALCIUM CARBONATE) LT-1 | CAN ETHYLENE/HEXANE-1 COPOLYMER LT-UNK NYLON 6 POLYMER LT-UNK NYLON 6,6 POLYMER LT-UNK MODIFIED ACRYLIC BINDER LT-UNK POLY VINYL ALCOHOL LT-UNK RESIN ACIDS AND ROSIN ACIDS, ESTERS WITH TRIETHYLENE GLYCOL LT-UNK TRIDECYL ALCOHOL ETHOXYLATE LT-UNK UNDISCLOSED LT-UNK UNDISCLOSED LT - 1 | CAN | MUL UNDISCLOSED NoGS]

Number of Greenscreen BM-4/BM3 contents ▬ 0
Contents highest concern GreenScreen Benchmark or List translator Score ▬ LT-1
Nanomaterial ▬ No

INVENTORY AND SCREENING NOTES:
ALL INGREDIENTS HAVE BEEN SCREENED AGAINST HPD AUTHORITATIVE LISTS, BUT NOT ALL CAS #'S HAVE BEEN DISCLOSED TO PROTECT PROPRIETARY FORMULATIONS.

VOLATILE ORGANIC COMPOUND (VOC) CONTENT
VOC Content data is not applicable for this product category.

CERTIFICATIONS AND COMPLIANCE *See Section 3 for additional listings.*
VOC emissions: Green Label Plus
Multi-attribute: Cradle to Cradle™ Certified V3.1 Silver
Multi-attribute: NSF-140 Gold

CONSISTENCY WITH OTHER PROGRAMS
Pre-checked for LEED v4 Material Ingredients Option 1

Third Party Verified?
○ Yes
◉ No

PREPARER: Self-Prepared
VERIFIER:
VERIFICATION #:

SCREENING DATE: 2020-12-17
PUBLISHED DATE: 2020-12-17
EXPIRY DATE: 2023-12-17

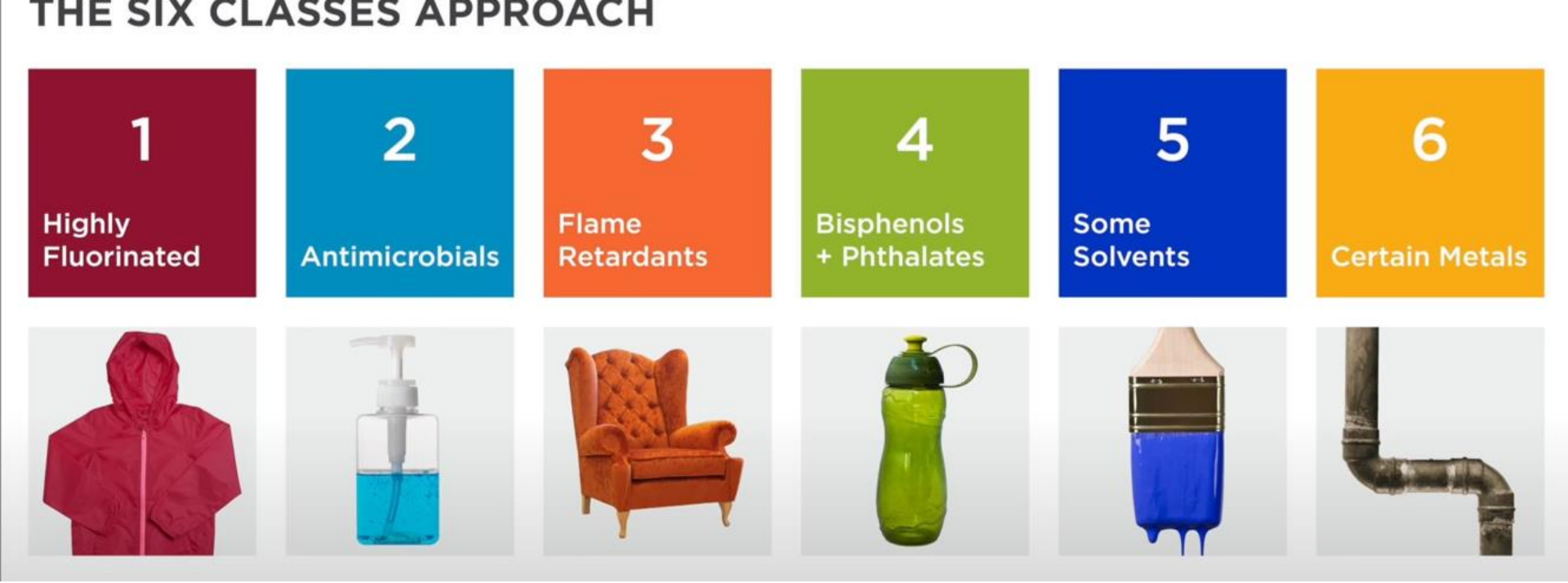
EcoWorx Tile with Nylon Fiber
for reference purposes only if printed or downloaded.

HPD v2.2 created via HPDC Builder Page 1 of 9

What is an HPD?

- Health Product Declaration
- Follows standardized rules developed by Health Product Declaration Collaborative
- Reports chemicals and materials used in a building product including chemicals of concern

PHIPPS Duke Farms



6 Videos on How Chemicals are Used and How to Avoid Them

sixclasses.org



3. Ecosystem Health

- Helping plants and animals in your ecosystem to thrive
- Choose products from companies that preserve ecosystems
- Can you place nets or graphics on windows to prevent bird strikes?
- Choose products that end up in a compost bin rather than a landfill

Zimoun, Museum of Fine Arts Rennes, France, 2013



Biodegradable over Processed

- Plants sequester carbon
- Nature is the most efficient recycler
- Choosing wood and natural materials over metals and plastics, usually uses less life-cycle carbon

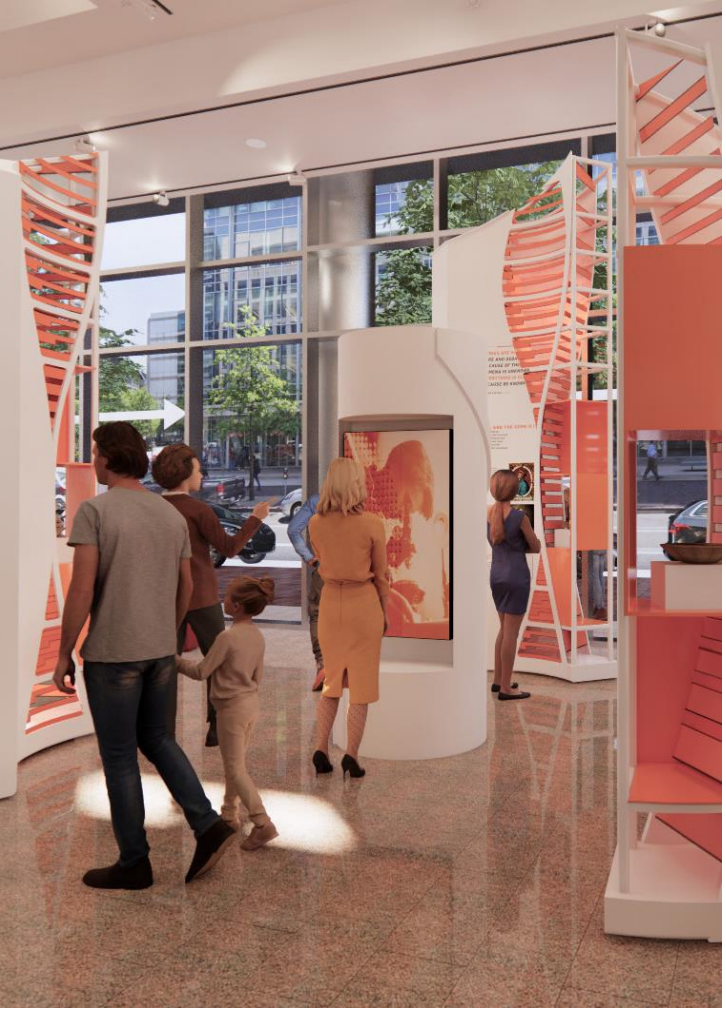
Yassine El Mansouri/National Building Museum



4. Climate Health

- Actions to lower climate risk and help improve Environmental Justice for all
- Decarbonization of exhibit materials

Markus Spiske on Unsplash

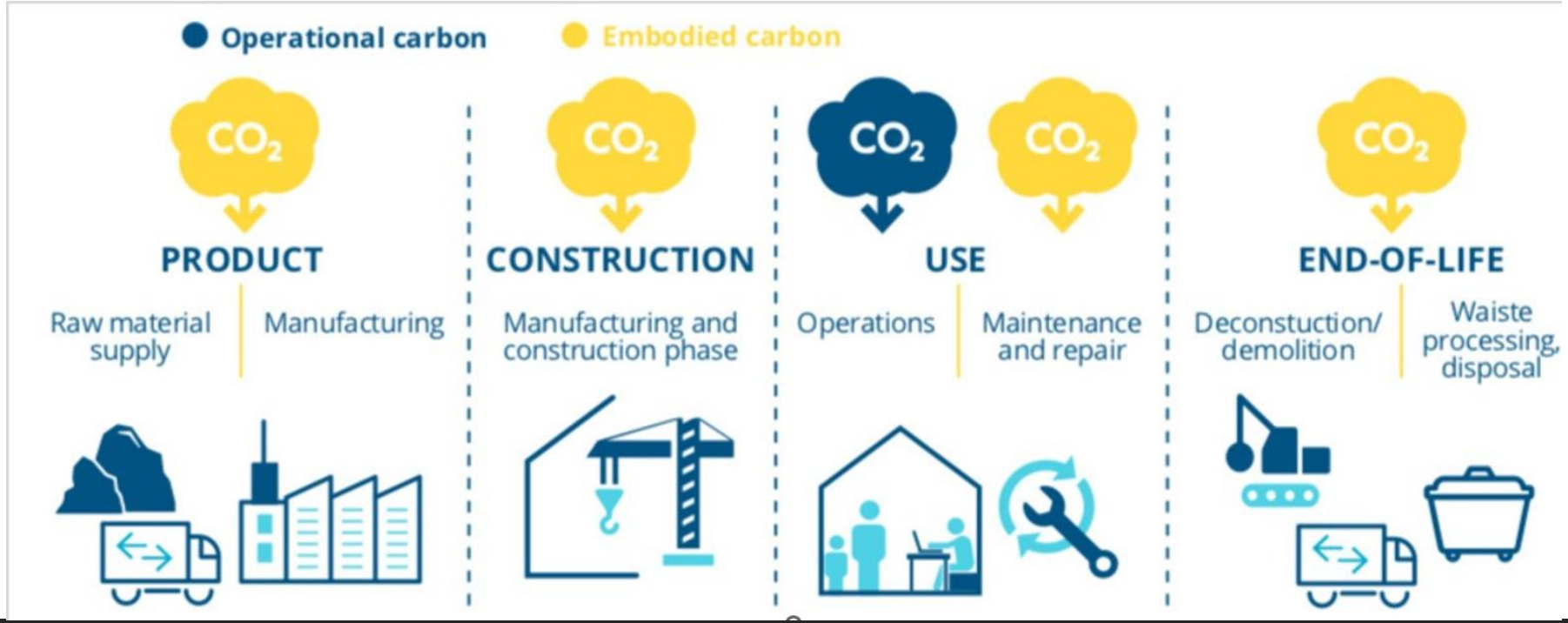


Operational Carbon

Energy use of Anything that is plugged in

- Mechanical/Electrical Interactives
- Speakers
- Monitors
- Etc.

Broad Discovery Center, Cambridge, MA



Embodied Carbon

How much does the extraction, manufacture & transportation of a product contribute to global warming?

Embodied Carbon: What is an EPD?





- Environmental Product Declaration
- Life story of a product in a single report



5. Circular Economy

- Reduce, Reuse, Recycle
- Design for Deconstruction
- End of Life Plan

OH WOW! Science Center, Youngstown, OH



Salvage in Exhibits

- Find ways to reuse exhibit elements in-house
- Establish resources with theaters or film boards in your community to harvest plywood and other gently used construction materials
- Opensource map of salvage opportunities

  https://www.allforreuse.org/

OH WOW! Science Center, Youngstown, OH





Clips & Screws
NOT Nails nor Glues

- Find ways to attach materials with clips and screws instead of nails and adhesives to make maintenance and demolition easier and to increase material reuse.
- Prepare “Deconstruction Plans” not “Demolition Plans.”

Roundhouse Aquarium, Manhattan Beach, CA

issuu.com – To exit full screen, press Esc

Sustainable Exhibition Design & Construction

Toolkit

v6 Sep 2024

QR Code to Toolkit at Issuu

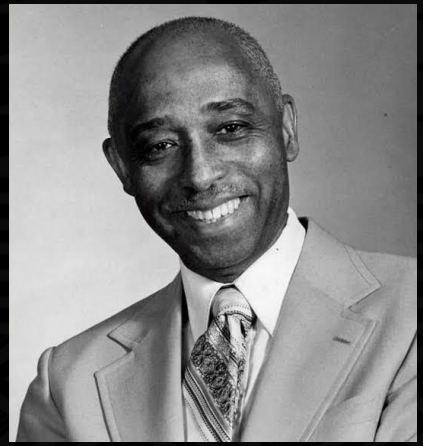
A Case Study On The Wright Museum's HyperLocal Exhibitions: d.Tree Studio & Blackout



LESLIE TOM | Chief Sustainability Officer
The Charles H. Wright Museum of African American History

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LinkedIn: www.linkedin.com/in/les733

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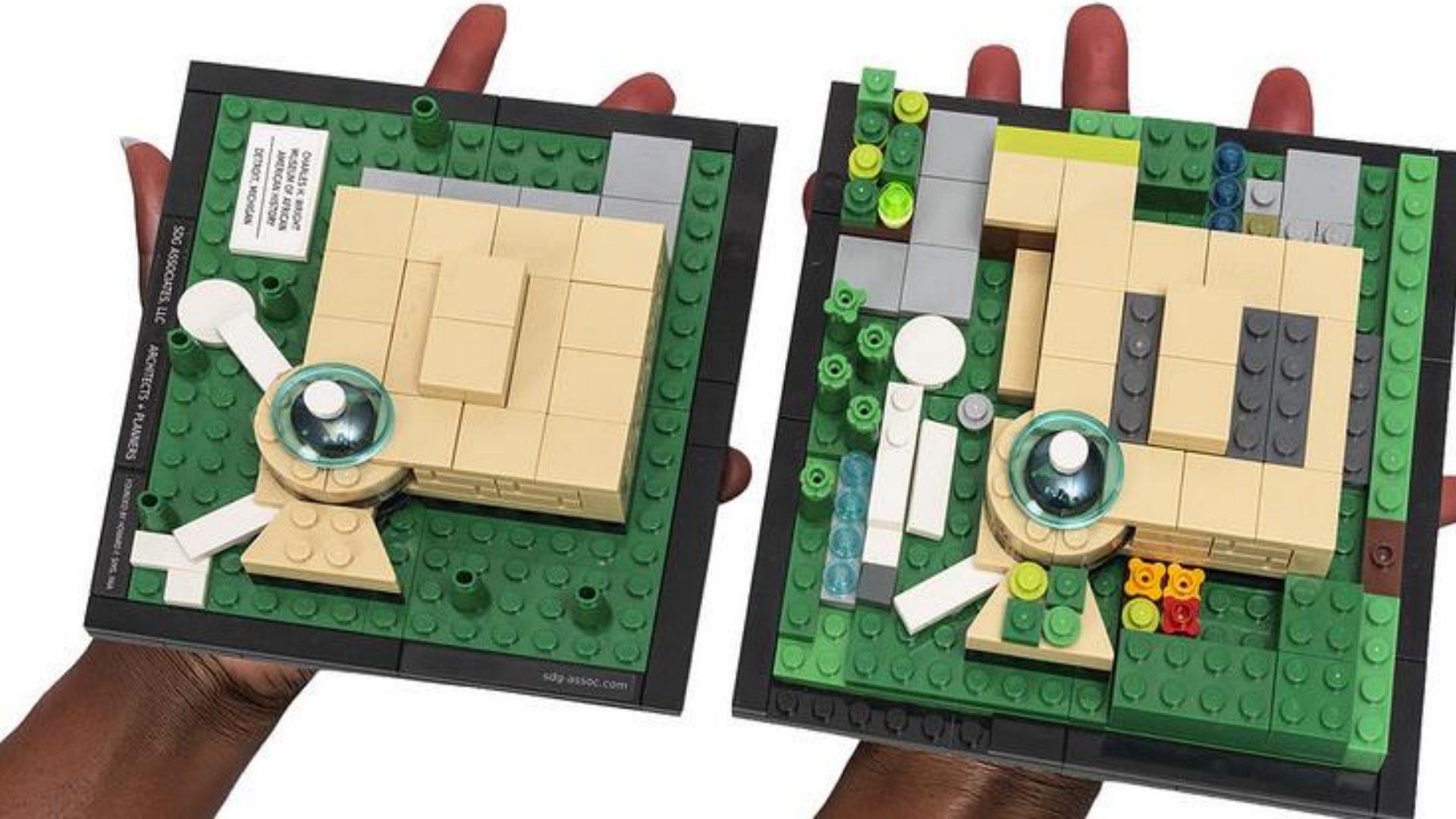


mission

Open minds and change lives through the exploration and celebration of African American history and culture.

Dr. Charles H. Wright, Founder




CHARLES H. WRIGHT
MUSEUM OF AFRICAN
AMERICAN HISTORY
DETROIT, MICHIGAN
SDG ASSOCIATES, LLC
ARCHITECTS + PLANNERS
sdg-assoc.com

THE WRIGHT

EXCELLENCE IS NO ACCIDENT

Embrace sustainable practices

EXCELLENCE IS NO ACCIDENT.

That's why, to increase our altitude and expand on our past successes, we've identified five institutional goals for The Wright in the coming years:

01.

CENTER DETROIT

Place Detroit at the forefront of a national (and international) dialogue regarding the profound influence of African American history and culture.

02.

BE A LEADER IN THE FIELD

Lead in the creation, distribution, and exhibition of world-class programs characterized by aesthetic excellence, technological innovation, and relevancy to current events.

03.

MENTOR MUSEUM PROFESSIONALS

Train and mentor people of color for careers in the curation, administration, and financial management of first voice institutions around the world.

04.

PRESERVE INSTITUTIONAL VITALITY

Ensure the long-term financial sustainability of The Wright.

05.

EMBRACE SUSTAINABLE PRACTICES

Embrace environmentally sustainable systems and practices in all aspects of The Wright's institutional programs and culture.

WE'VE ALREADY MADE SIGNIFICANT PROGRESS TOWARD THESE GOALS THIS FISCAL YEAR.

Explore the rest of our Annual Report to see for yourself.



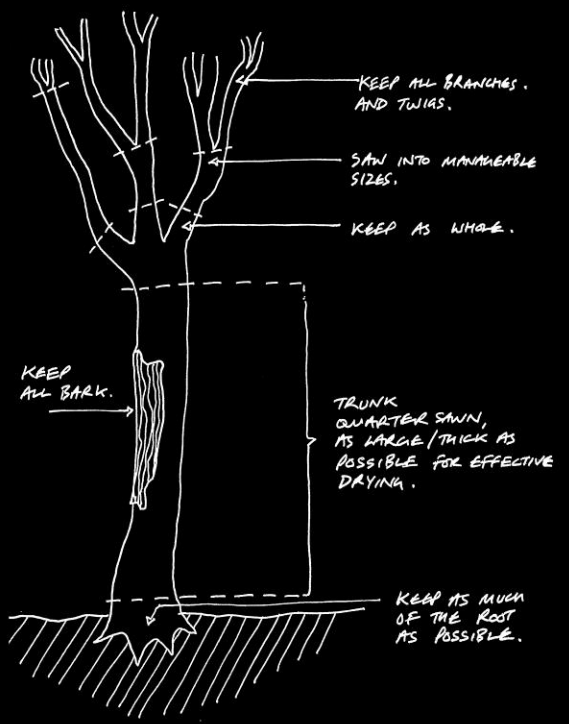
Three Zelkova Trees

Dec 2018

20+ years of mis-proper planting (girdling)

Deep roots in Detroit | The wood is from trees with deep roots in Detroit, growing in soil that contains memories of the land even before Detroit was Detroit.





LT

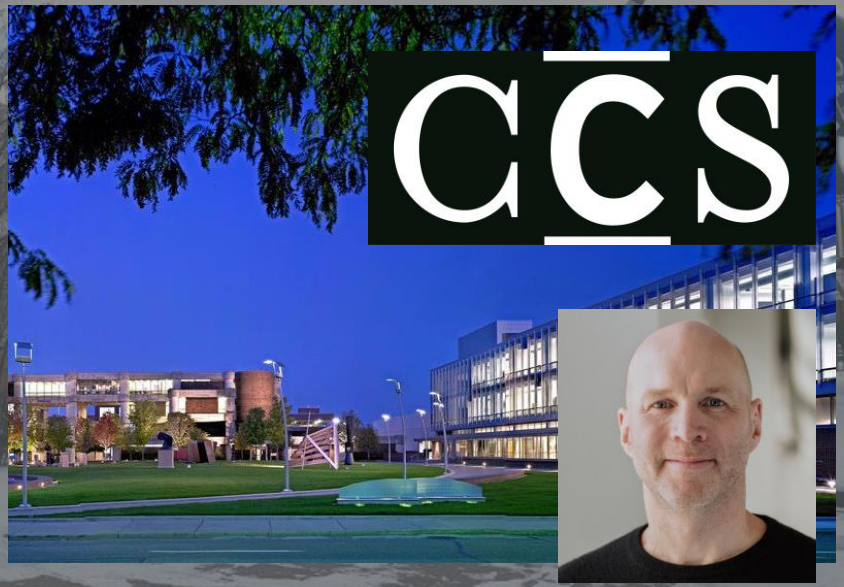
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Two Neighboring Institutions, Detroit, MI



The Charles H. Wright Museum of African American History



The College for Creative Studies

LESLIE TOM | Chief Sustainability Officer

DR. IAN LAMBERT | Professor, Dean of Graduate Studies and Research

Equitable Green City

Urban Lumber as a resource

Divert waste from landfill





We had a shared focus around trees and urban lumber and The City of Detroit's Sustainability Action Agenda (2019) to create no hidden agendas

Jan 2020

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Action Research & Service Design



d.Tree Studio

5 CCS Students
7 Community Scholars

The **d**.Tree (i.e. *Detroit Trees*) studio is an atelier of 12 makers.

It highlights that community members who have lived in Metro Detroit for longer than five years see the Detroit Trees differently.



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TREEPOSIUM

2021 | DesignCore's Month of Design

Over 900+ people participated in extending our knowledge of Detroit Trees to a broader audience.

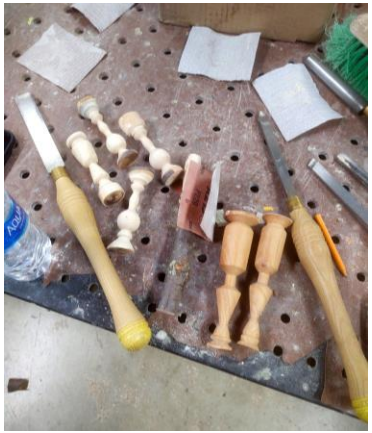


Storytelling







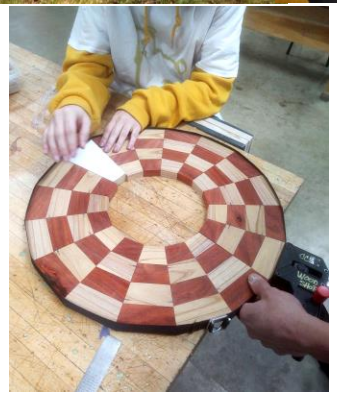














Curriculum

OBJECTS ARE
NOT NEUTRAL

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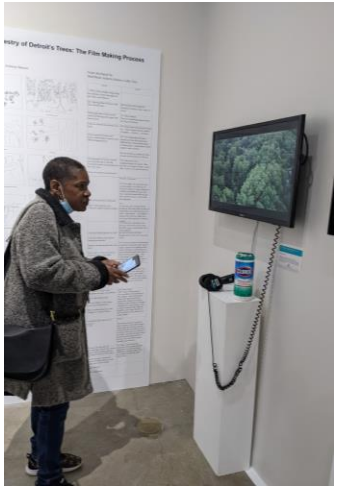
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d.Tree Exhibition College for Creative Studies

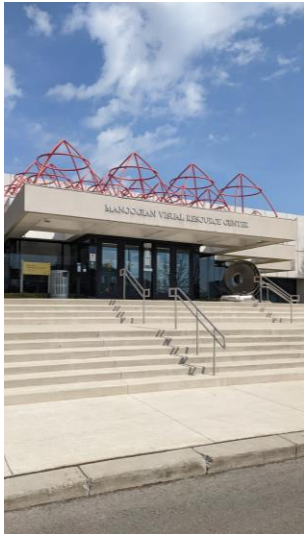
Student Exhibit

In the historic Charles H. Wright Museum, now turned The College for Creative Studies library, we held a 2-week exhibition in March 2022. 12 makers embedded stories in the Zelkova wood were displayed.













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2021

d.Tree Exhibition The Charles H. Wright Museum

Involving many voices

We focused on various touchpoints for people to learn with our process:

- **Past**
  - What do Detroit Tree's Tell Us?
  - Industrial Age of Trees
- **Present**: Student Interpretive Work
- **Future**
  - Tree Equity
  - Going Beyond Ornamental Trees
- Extra
  - Tree Work
  - Tree Actions – Engagement w/ leaf!
  - All Detroiters can sign up for a free Street Tree!







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2023



https://www.detroitnews.com/story/news/local/detroit-city/2022/10/11...

The Detroit News
SERVING MICHIGAN SINCE 1873
150 YEARS

WJR is shaking up its lineup, and Pa

[News] Sports Autos Business Michigan Life + Home Entertainment Opinion Obituaries

DETROIT

Detroit launches tree partnership, pledges to plant 75K trees over five years

Hannah Mackay The Detroit News

Published 12:55 p.m. ET Oct. 11, 2022 | **Updated 7:39 a.m. ET Nov. 11, 2022**

View Comments

Detroit, once known decades ago as the "City of Trees," is attempting to reclaim that title and has pledged to plant 75,000 trees over the next five years through a new partnership that strategically adds trees in specific neighborhoods.

As part of its Tree Equity Partnership launched Tuesday, the city has partnered with American Forests, a nonprofit dedicated to restoring and protecting forests nationwide, along with the Greening of Detroit, a nonprofit dedicated to planting trees in Detroit. The partnership, which also includes Detroit Future City and DTE Energy, has secured $30 million in funding that will also create 300 new jobs for tree planting and maintenance.

"I want trees to go where there's the most concrete," said Detroit Mayor Mike Duggan at a news conference Tuesday with U.S. Sen. Debbie Stabenow and other officials. "It's going to be a more complicated process to target these areas ... But can you imagine what the city would look like if you managed to do two things at once: planted 75,000 trees for the environment, but also created sites of beauty."

Join Detroit's Tree Learnings

American Forests™

CITY OF DETROIT

the greening of Detroit™

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2022

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Expert Voices

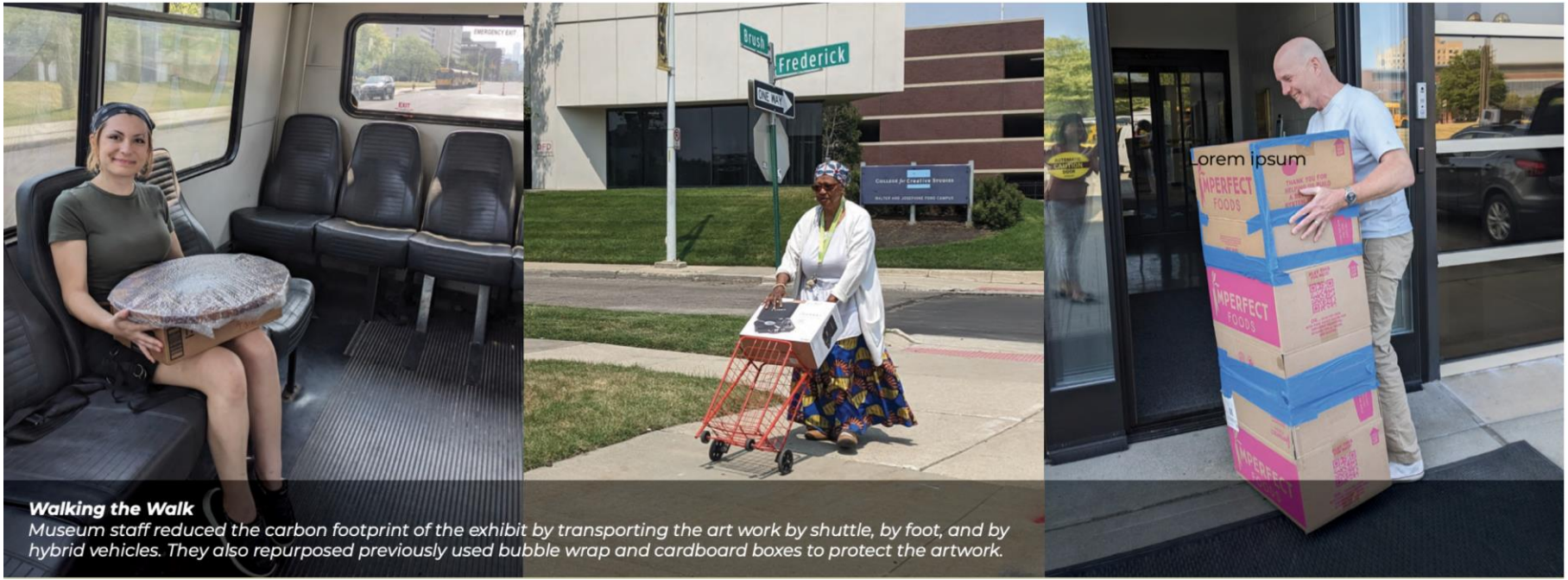


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Cross Departmental Collaborations Carbon Counting



Reduce Transportation Carbon



Walking the Walk
Museum staff reduced the carbon footprint of the exhibit by transporting the art work by shuttle, by foot, and by hybrid vehicles. They also repurposed previously used bubble wrap and cardboard boxes to protect the artwork.

Carbon Calculations

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	Pedestal 9 Reuben						
	MDF	0.06	yd3	North American MDF Average	580	34.800	
	Paint	15	ft2	Sherwin Williams ProMar200	0.258	3.867	
1	Steel Screws	0.03	kg	Steel	2.088	0.063	
							38.730
72	**Pedestal 10 Zach**						
73	MDF	0.06	yd3	North American MDF Average	580	34.800	
74	Paint	15	ft2	Sherwin Williams ProMar200	0.258	3.867	
75	Steel Screws	0.03	kg	Steel	2.088	0.063	
76							38.730
77	**Intro Pedestal**						
78	MDF	0.22	yd3	North American MDF Average	580	127.600	
79	Paint	72	ft2	Sherwin Williams ProMar200	0.258	18.562	3/8 acrylic, 9mm = 2.136 lbs./ft2
80	Acrylic Bonnet	13.08	kg	Acrylic Bonnet	8.288	108.405	
81	Steel Screws	0.04	kg	Steel	2.088	0.084	
82							254.650
83	**CNC Cut Signage**						
84	Pine	24	board ft		0.108	2.592	Using Pine
85	Vinyl	1.13	kg		2.932	3.325	Using Vinyl
86	**Sculpted Hands**	0.91	kg	Polyester Resin	6.105	5.538	
87	Screws	0.02	kg	Steel	2.088	0.042	
88							5.580
89	**Paint**						
90	Gallery Walls	1800	ft2	Sherwin Williams ProMar200	0.258	464.040	
91	H Walls	580	fts		0.258	149.524	
92							613.564
93	**H Walls**						
94		759.8	lb	Metal Studs	1.36	1033.328	Conservative for cold formed steel studs
95		580	ft2	Gypsum Board	0.423	245.050	Conservative for Gyp Board
96							1278.378

Gallery Carbon Calculator

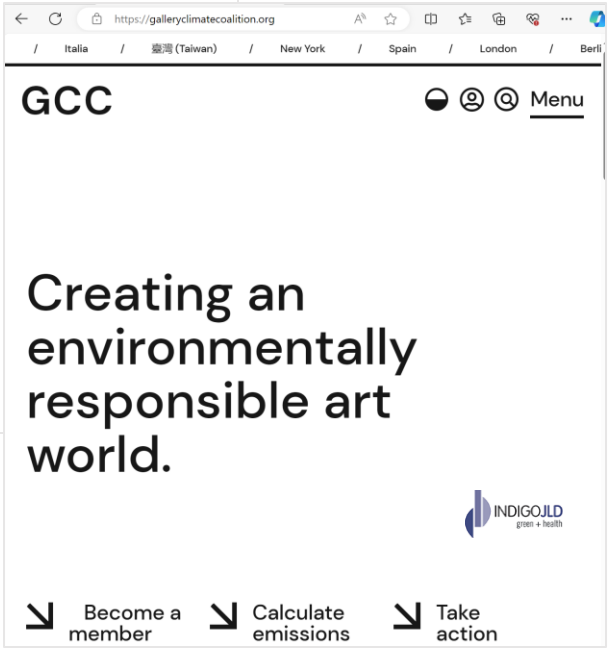
https://galleryclimatecoalition.org/carbon-calculator/



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Greening our d.Tree Exhibition

Tools in greening our exhibition:

- Sustainable Exhibition Design & Construction Toolkit
- Gallery Climate Coalition Calculator

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Less Hazardous Materials



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Wood Harvesting



Forest Stewardship Council (FSC) Wood

- Although not perfect, FSC wood remains the best standard for ecosystem friendly wood harvesting. Cost premiums are much less than they used to be and FSC certified wood is more available than ever.

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Greening Our Exhibit

A Hyper-Local, Green Exhibit

Looking at Our Carbon Footprint
In telling the story of the **d**.Tree Studio, we strive to join the trees in reducing our carbon footprint and in helping to make our community more equitable.

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No Vinyl Exhibit Logo
Instead of relying on new printed vinyl, we build the exhibit logo from scrap pieces of the Zelkova Trees that were left over from the artist's finished projects.

Healthy Paint
We chose a paint that is certified to have low volatile organic chemicals (VOCs). This will contribute to less smog in Detroit and healthier air in the exhibit.

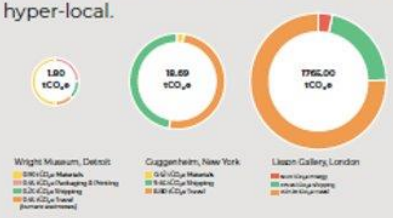
Repurposed Modular Wall
We reduced our carbon footprint by using a modular wall from previous exhibits. Had we built a wall from new materials, an additional 1.278 tCO_2e of carbon would have been emitted into the atmosphere, which is roughly equivalent to driving across the United States.



FSC Certified Plywood
We saved .215 tCO_2e of carbon by using FSC plywood instead of medium density fiberboard for the exhibit furniture. FSC is the Forestry Stewardship Council. FSC certified wood is more likely to be ethically and sustainably harvested.

Fabric Graphics
Two murals in the exhibit were created with fabric instead of vinyl. Vinyl has a higher carbon footprint and is created with PVC, which harms factory workers and majority BIPOC communities near the factories.

Thinking Local
Using the international Gallery Climate Coalition (GCC) method – the Lisson Gallery in London has a carbon footprint of approx. 1,800 tCO2e, the Guggenheim has 18 tCO2e, and the Wright will have close to 1.8 tCO2e because all artwork is hyper-local.



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Reuse

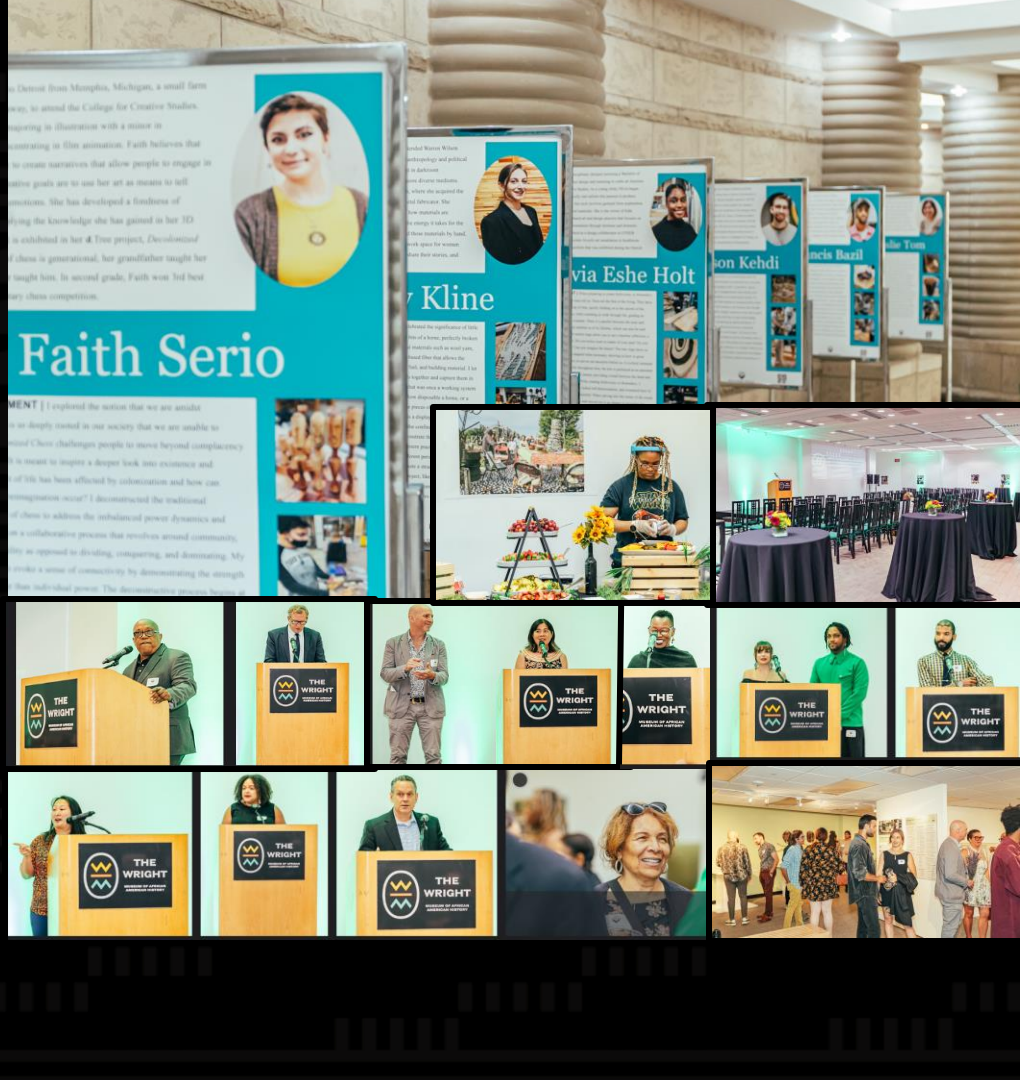
www.instagram.com/p/Da3ntn1Paqg





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Exhibit Opening



https://intandem.autodesk.com/resource/the-charles-h-wright-museums-digital-transformation-to-becoming-a-smart-museum/

overall project timel... 2Green Museums of... Class-Handout-BLD... Presentation1.pptx Visit Detroit Launch... Presentation.pptx 2023A Meeting Age... Dell Live African Wildlife...

AUTODESK

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The Charles H. Wright Museum's digital transformation to becoming a 'Smart Museum'

https://youtu.be/dS4R7WLJTEk

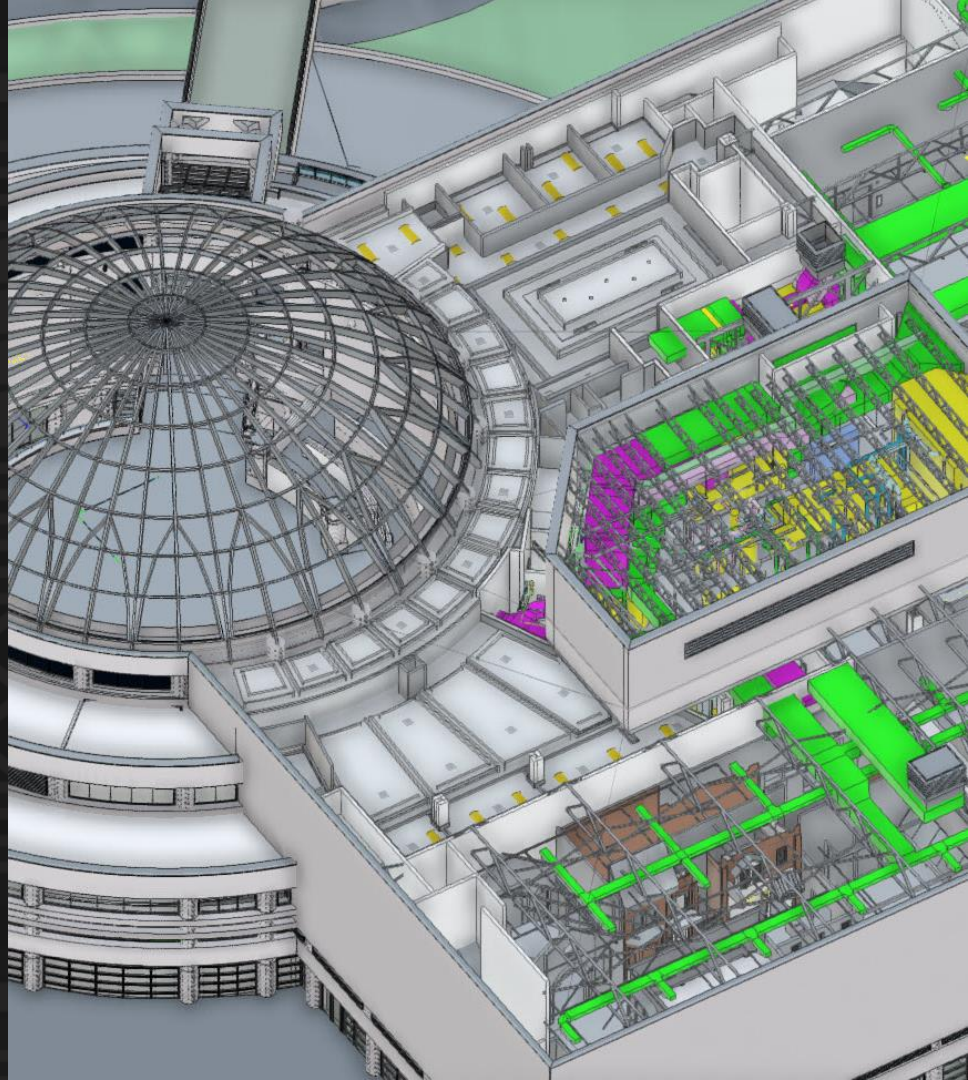
When sustainability efforts are discussed, consumers often look at the initiatives undertaken by major corporations to achieve these goals. Rarely do we consider the efforts of our local museums in striving to diminish their carbon footprint or embrace cutting-edge technologies for more eco-friendly building operations or implications to visitor experiences. Surprisingly, the collective number of museums in the United States surpasses that of many renowned retail and restaurant giants combined—amounting to an impressive 35,000 establishments. One institution, nestled in the heart of Detroit, is carving out its own unique path, by adopting new technology that will support its goal to be a "smart museum."

Keep up to date with Autodesk Tandem

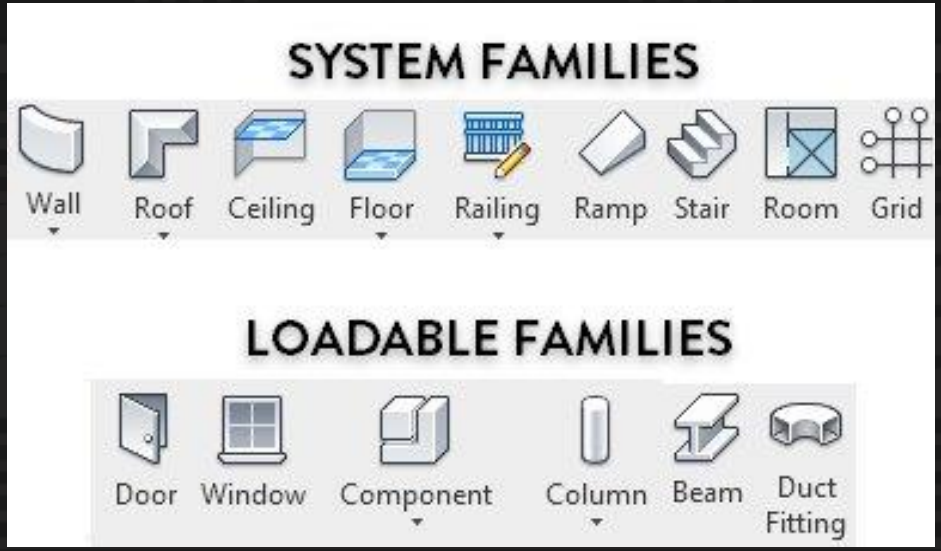
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Digital Twin

1:1 Representation
Comprehensive Insight
Commitment to Accuracy

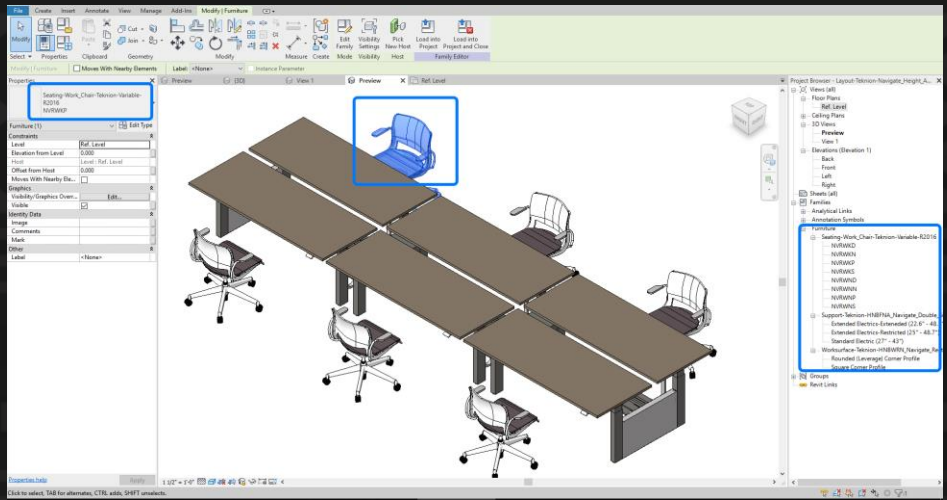


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Families

Group of objects
Reusable Component
Types vs Instances



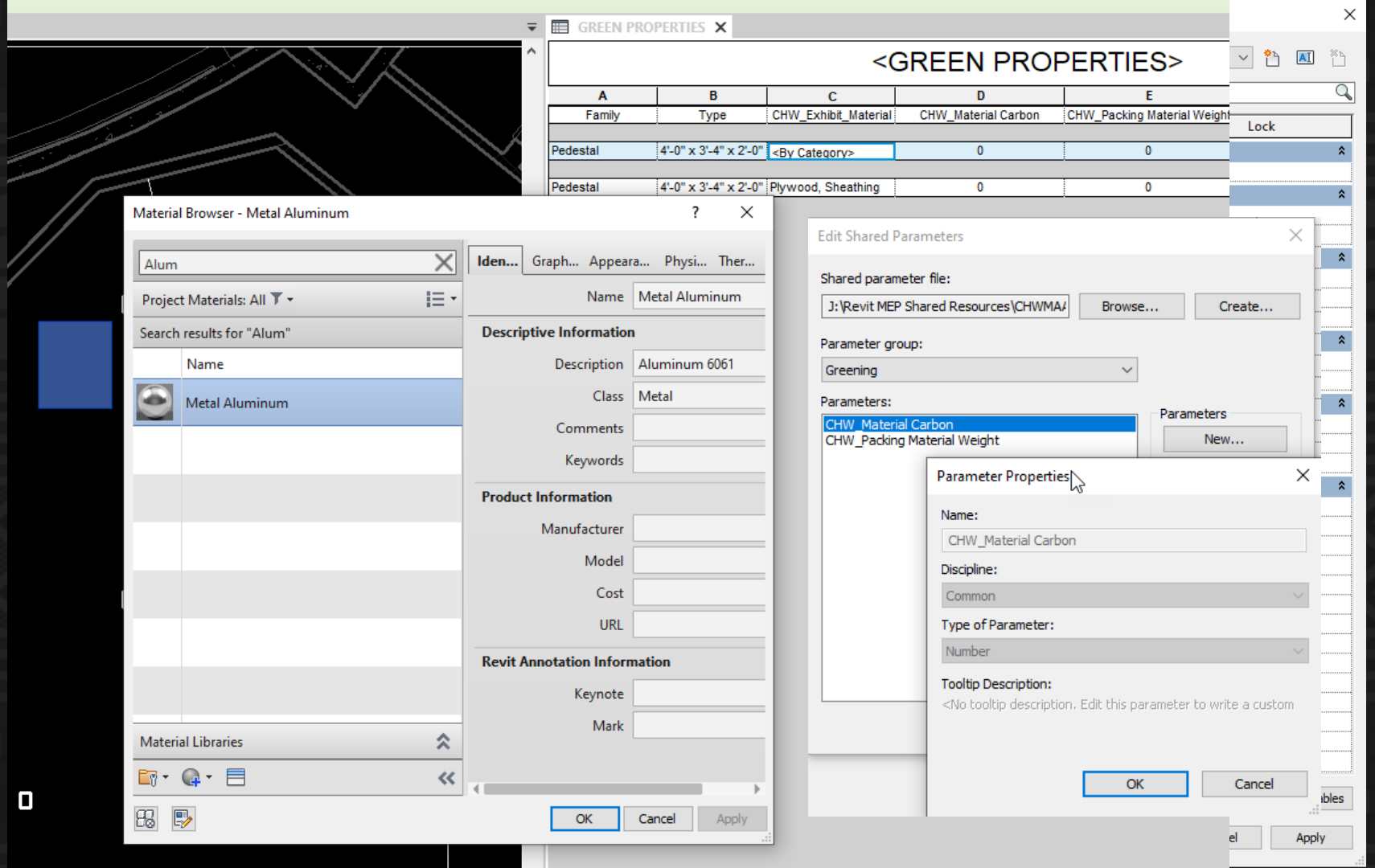

GREEN PROPERTIES
<GREEN PROPERTIES>
A
B
C
D
E
Family
Type
CHW_Exhibit_Material
CHW_Material Carbon
CHW_Packing Material Weight
Pedestal
4'-0" x 3'-4" x 2'-0"
<By Category>
0
0
Pedestal
4'-0" x 3'-4" x 2'-0"
Plywood, Sheathing
0
0
Lock
Material Browser - Metal Aluminum
Alum
Project Materials: All
Search results for "Alum"
Name
Metal Aluminum
Material Libraries
Iden...
Graph...
Appeara...
Physi...
Ther...
Name
Metal Aluminum
Descriptive Information
Description
Aluminum 6061
Class
Metal
Comments
Keywords
Product Information
Manufacturer
Model
Cost
URL
Revit Annotation Information
Keynote
Mark
OK
Cancel
Apply
Edit Shared Parameters
Shared parameter file:
J:\Revit MEP Shared Resources\CHWMA
Browse...
Create...
Parameter group:
Greening
Parameters:
CHW_Material Carbon
CHW_Packing Material Weight
Parameters
New...
Parameter Properties
Name:
CHW_Material Carbon
Discipline:
Common
Type of Parameter:
Number
Tooltip Description:
<No tooltip description. Edit this parameter to write a custom
OK
Cancel
Apply

Exhibit Items			
Designation	Family	Type	Count
	Book Pedestal	Book Pedestal	1
	Wood Bench	Wood Bench	2
Pedestal	Pedestal	4'-0" x 3'-4" x 2'-0" - Metal	3
Pedestal	Pedestal	4'-0" x 3'-4" x 2'-0" - Wood	2

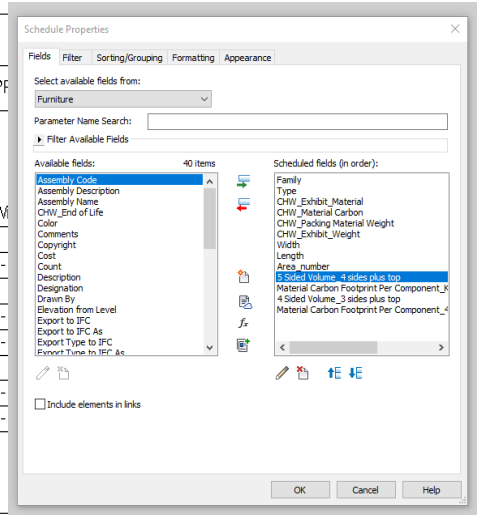
End of Life

Donate
Recycle
Landfill

		GREEN - END OF LIFE
Family	Type	CHW_End of Life
Pedestal	4'-0" x 3'-4" x 2'-0" - Metal	DONATED TO CCS
Pedestal	4'-0" x 3'-4" x 2'-0" - Metal	LANDFILL
Pedestal	4'-0" x 3'-4" x 2'-0" - Metal	STORAGE
Pedestal	4'-0" x 3'-4" x 2'-0" - Wood	DONATED TO CSG
Pedestal	4'-0" x 3'-4" x 2'-0" - Wood	

Carbon

			GREEN PR			
Family		t_Material	CHW_Material Carbon	CHW_Packing Material Weight	CHW_Exhibit_Weight	Wi
Pedestal	4'-0" x 3'-4" x 2'-0" - Metal	Metal Aluminum	0.03	8	25	3' -
				8		
Pedestal	4'-0" x 3'-4" x 2'-0" - Metal	Metal Aluminum	0.03	14	25	3' -
Pedestal	4'-0" x 3'-4" x 2'-0" - Metal	Metal Aluminum	0.03	14	25	3' -
				28		
Pedestal	4'-0" x 3'-4" x 2'-0" - Wood	Plywood, Sheathing	0	0	0	3' -
Pedestal	4'-0" x 3'-4" x 2'-0" - Wood	Plywood, Sheathing	0	0	0	3' -
				0		
				36		



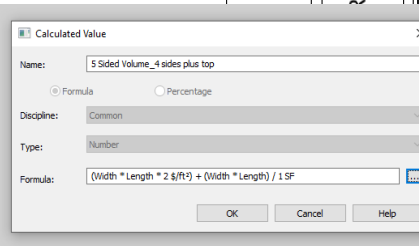
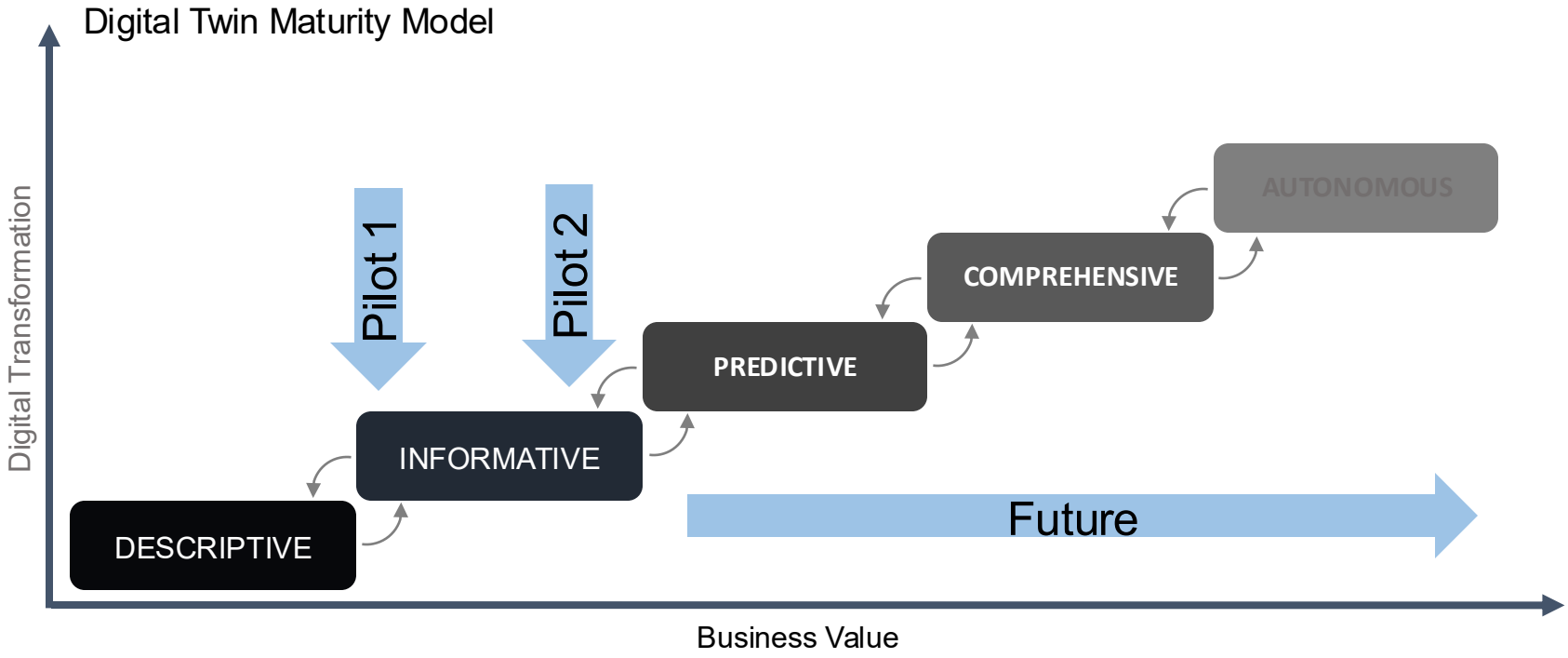


Exhibit Items Schedule
90
Project number 2021012.03
Date 02/05/24
Drawn by Author
Checked by Checker
Scale
No. Description Date

Where we are going?



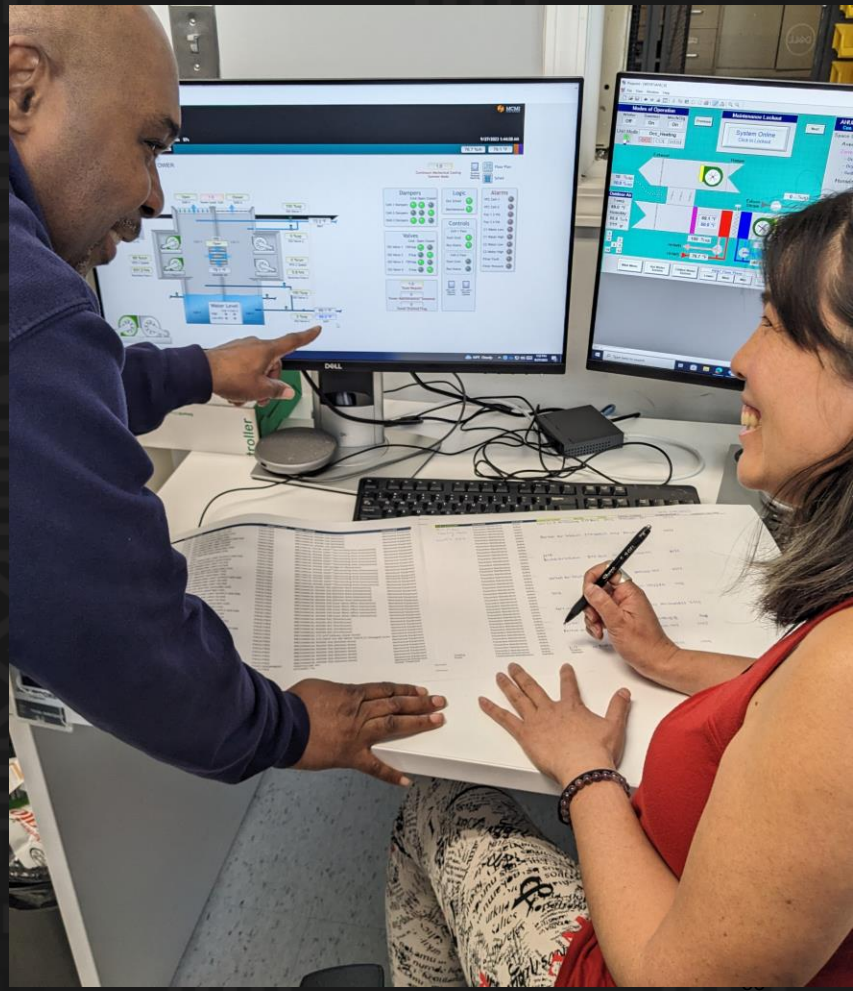
Source: Verdantix - Smart Innovators: Digital Twins For Buildings, June 2020

THE WRIGHT

Budget

More accurate projections

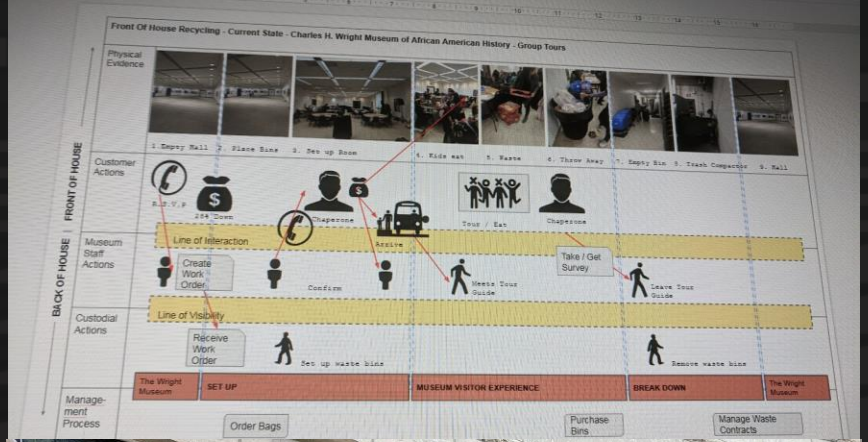
- Carbon
- Conceptual / Actual
- Project / Annual



THE WRIGHT

Visualizing Collaborations

Pre-design
Design Development
Implementation
Final 3D scan





THE WRIGHT

Carbon Dioxide Sensors



Breaking Down Institutional Silos



By learning to work together as 2 cultural institutions, as community partners, as putting the history of the lived African American experience.



THE WRIGHT

CCS

THE WRIGHT

Impact To Society Service Design Award



International Society for Service Innovation Professionals (ISSIP)

BLACKOUT

An Energy Grid Exhibition

THE WRIGHT

PEOPLE | POWER | COMMUNITY | WHAT'S NEXT

A deeper understanding today for a brighter, more resilient tomorrow.

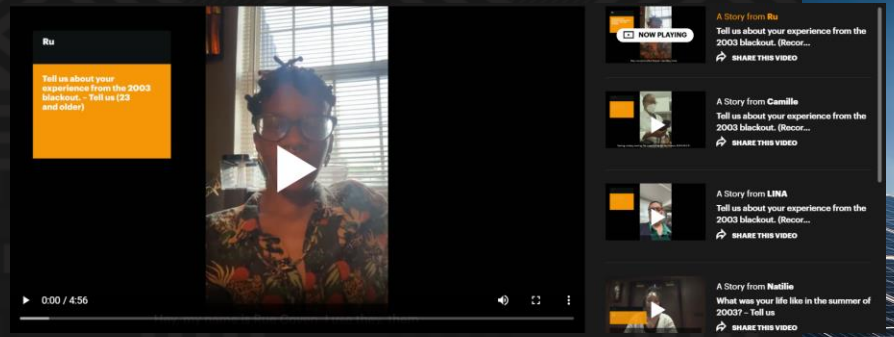
MARCH 2028 – SEPT 2028

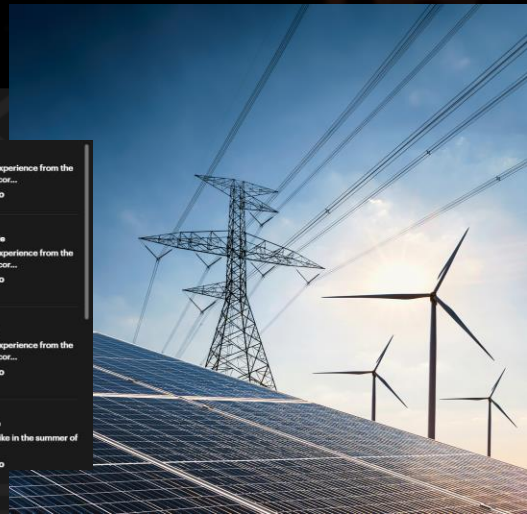
OUR VISION

The BLACKOUT Energy Grid Exhibition connects the 2003 Northeast Blackout to Michigan's energy grid, history, lived experiences & opportunities to understand past, present and future of our energy grid.

Combining all we know:

- True Partnerships
- 3D Modeling
- Hyperlocal
- Lived Experiences

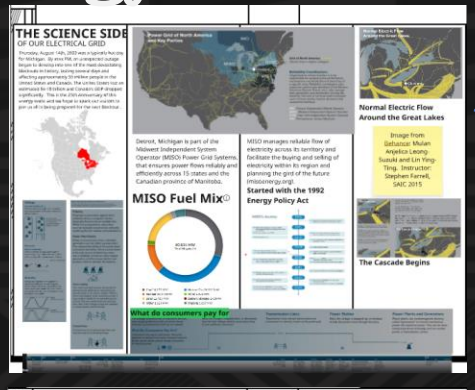


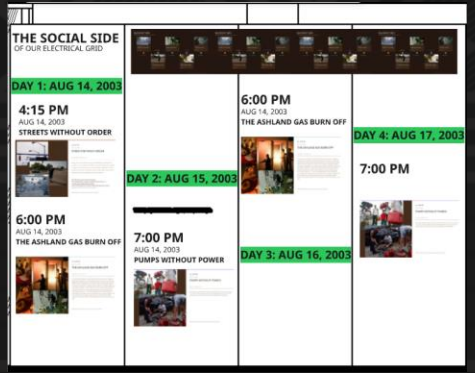


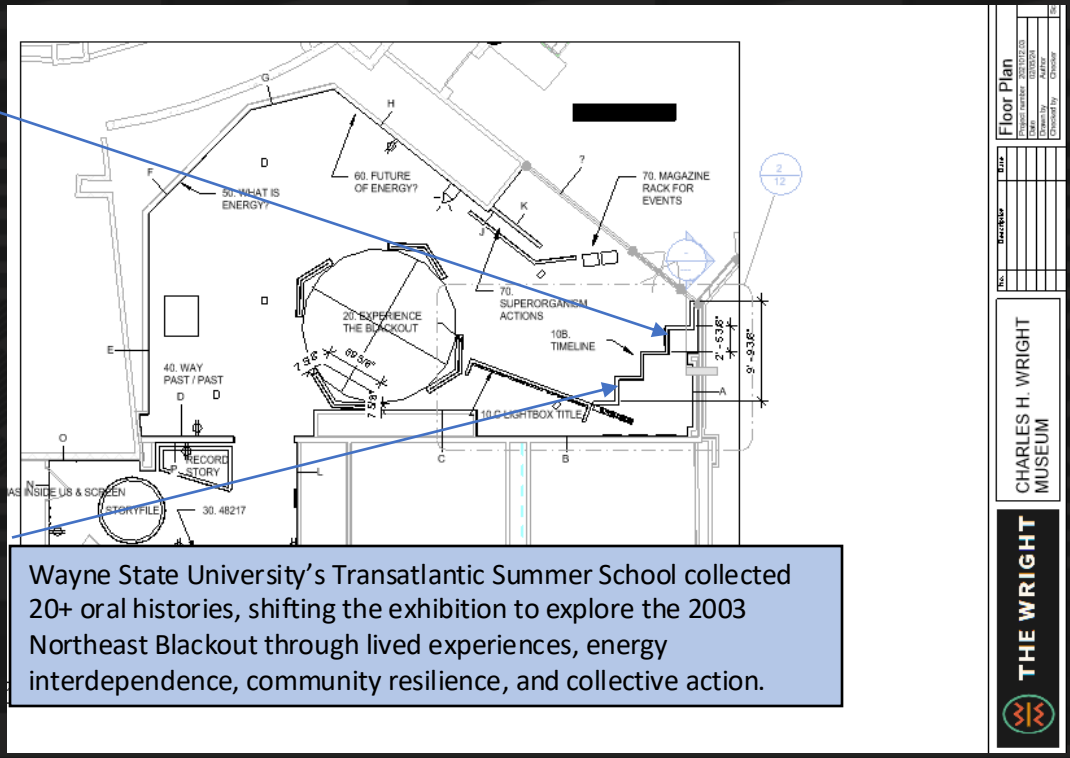
BLACKOUT Traveling

Energy Grid Exhibition

THE WRIGHT







Wayne State University's Transatlantic Summer School collected 20+ oral histories, shifting the exhibition to explore the 2003 Northeast Blackout through lived experiences, energy interdependence, community resilience, and collective action.

THE WRIGHT

LEARN MORE!

Join us On our journey

www.thewright.org

Email: ltom@thewright.org
LinkedIn: www.linkedin.com/in/les733

Exclusive, We're Published!

WRIGHT MUSUEM FEATURED!

THE WRIGHT

Summer 2025

University of Detroit - Mercy: Dichotomy Journal
www.dichotomyjournal.com

We're published! The Charles H. Wright Museum of African American History is proud to announce that our sustainability leadership has been featured in the latest issue of Dichotomy, the nationally recognized architecture journal of the University of Detroit Mercy.

About Dichotomy (ISSN: 0276-5748)

- ***Published by:*** *School of Architecture and Community Development (SACD), UDM*
- ***Editorial Model:*** *Blind-reviewed, student-led, and curated annually*
- ***Archival Access:*** *Indexed in EBSCOhost and housed in UDM McNichols Library Special Collection*

Founded in 1978, Dichotomy is a nationally award-winning journal that publishes thematic editions exploring architecture, design, urbanism, and community development through the lens of emerging issues and inspired ideas. Contributors span the globe—from South Africa to the Netherlands—and include architects, artists, scholars, and activists.

Listen

We created a NotebookLM podcast of our 6,000 word article. Have a listen!

bit.ly/greenmuseumdetroitpodcast2025

Watch

We shared our Green Museum frameworks with MuseumNext's Green Museum Summit, February 27, 2025

bit.ly/wrightgreenmuseumvideo2025



The Wright Museum is sharing a few of our frameworks and 10 years of work that we wished we had!

bit.ly/dichotomy28

Sharing our Green Museum Frameworks

Our Contribution

Our article, *"The Role Museums Play in our Climate Crisis is Action,"* reflects The Wright Museum's decade-long journey to embed sustainability into cultural practice. The piece positions the museum as a leader in the Green Museum Movement and a model for how cultural institutions can lead on climate resilience, equity, and design innovation.

Why This Matters

- ***Institutional Recognition:*** *Our work is now part of a respected academic archive and national conversation on sustainability and design.*
- ***New Audiences:*** *This publication extends our reach to thought leaders in architecture, academia, and allied disciplines.*

Breakout: Sustainable Exhibits and Resource Management | Friday, Oct. 30; 10:45-12:00

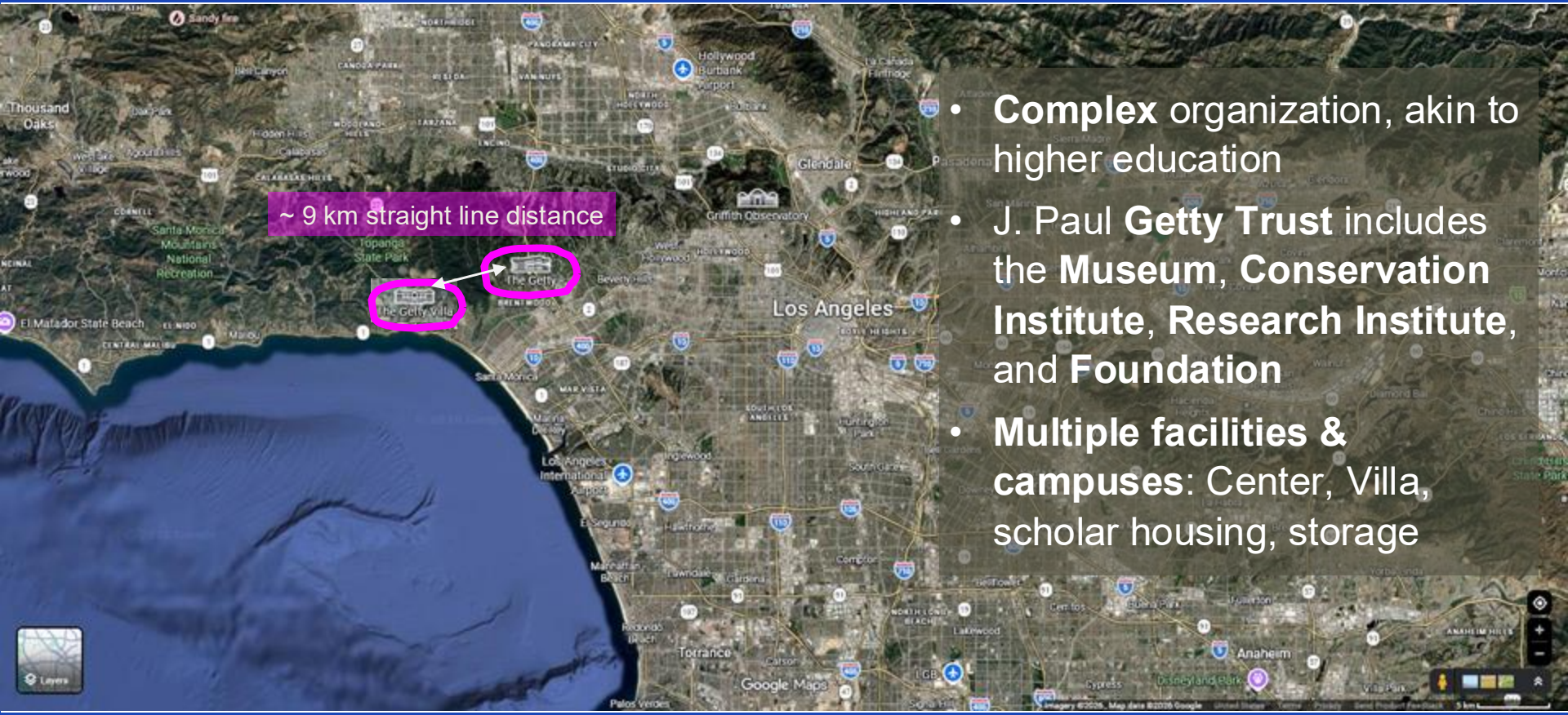
Creating Climate Impact through Collaborating for Change

Camille Kirk, Sustainability Director, The J. Paul Getty Trust



Getty

Introducing Getty



- **Complex** organization, akin to higher education
- J. Paul **Getty Trust** includes the **Museum**, **Conservation Institute**, **Research Institute**, and **Foundation**
- **Multiple facilities & campuses**: Center, Villa, scholar housing, storage

A few Getty facts





- Acres: 780
- Built square feet: >1,000,000
- Employee count: 1,300
- Volunteers and docents: nearly 1,000
- Annual visitors: ~2,000,000 (free admission)
- Annual digital visits to Getty.edu: ~9,000,000
- Digitized 1,000,000+ artworks and books now available through Open Content

Tale 1: Climate Impact Reporting

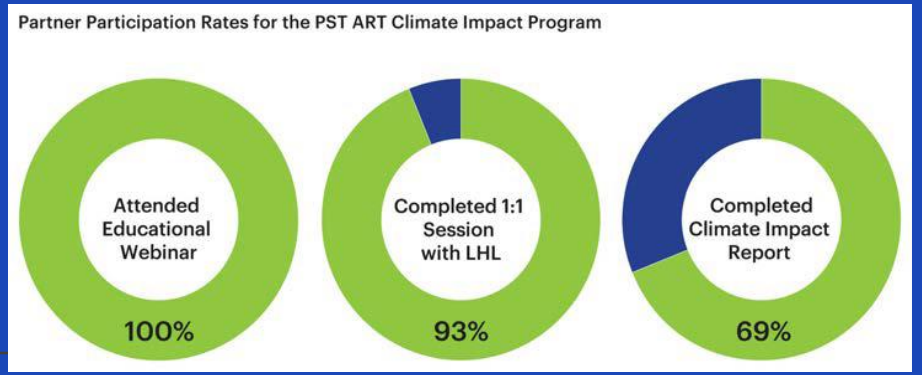
Getty's Experience Participating and Lessons Learned



Getty

Climate Impact Reporting Program - Overview

- Debra Scacco, LA-based artist and Laura Lupton, of LHL Consulting proposed to Getty that we measure the impact of individual PST presentations, and then partnered to develop the metrics for the **Climate Impact Reporting** (CIR)
- Getty took the opportunity to measure exhibition footprints with a consistent methodology, including qualitative and quantitative data assessment of travel, shipping, energy use, waste, engagement, and climate action decisions
- Getty Sustainability measured three on-site exhibitions using CIR metrics, and engaged Getty colleagues and interns in the data collection, review, and analysis

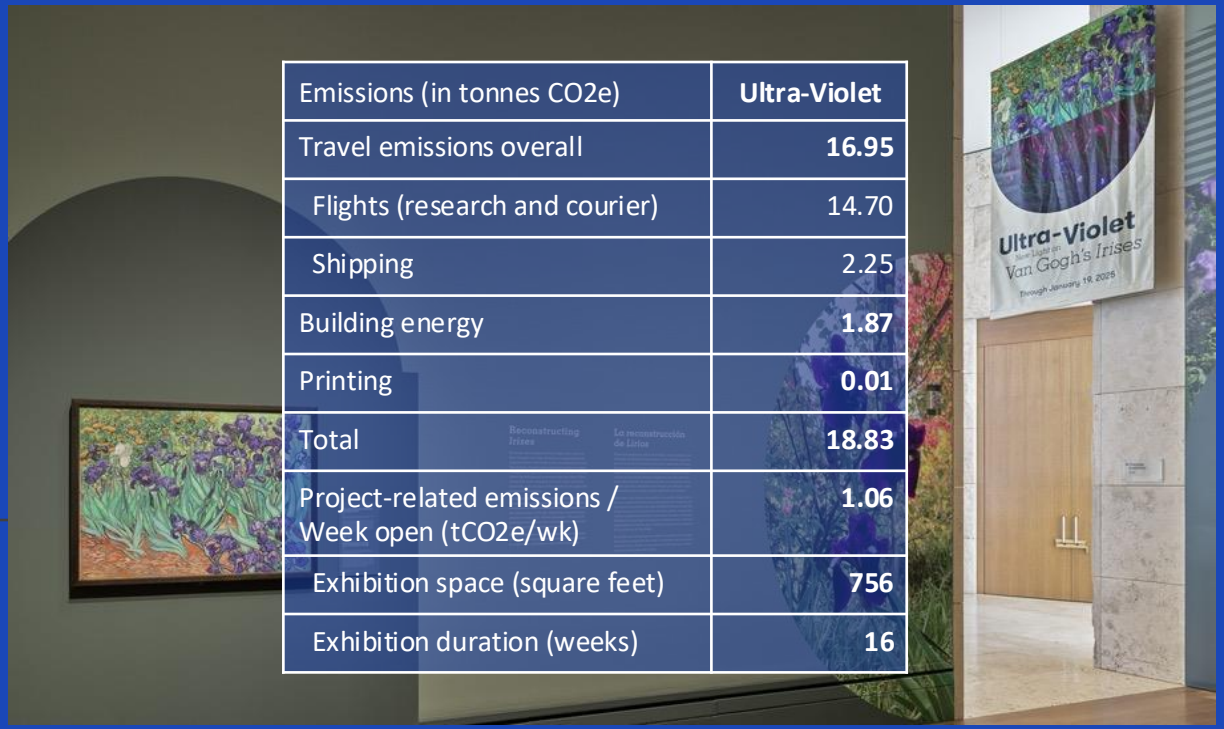


Participating projects are indicated with a Green Sundial on their PST.ART project page and have the option to include the green sundial on exhibition collateral.

Getty

Ultra-Violet: New Light on Van Gogh's Irises

- 16-week duration; 756 sq. ft.
- The smallest footprint of the 3 exhibitions we measured
- Featuring a single work from Getty's permanent collection & a new video shot on location in France
- A Museum & Conservation Institute partnership about new technical research

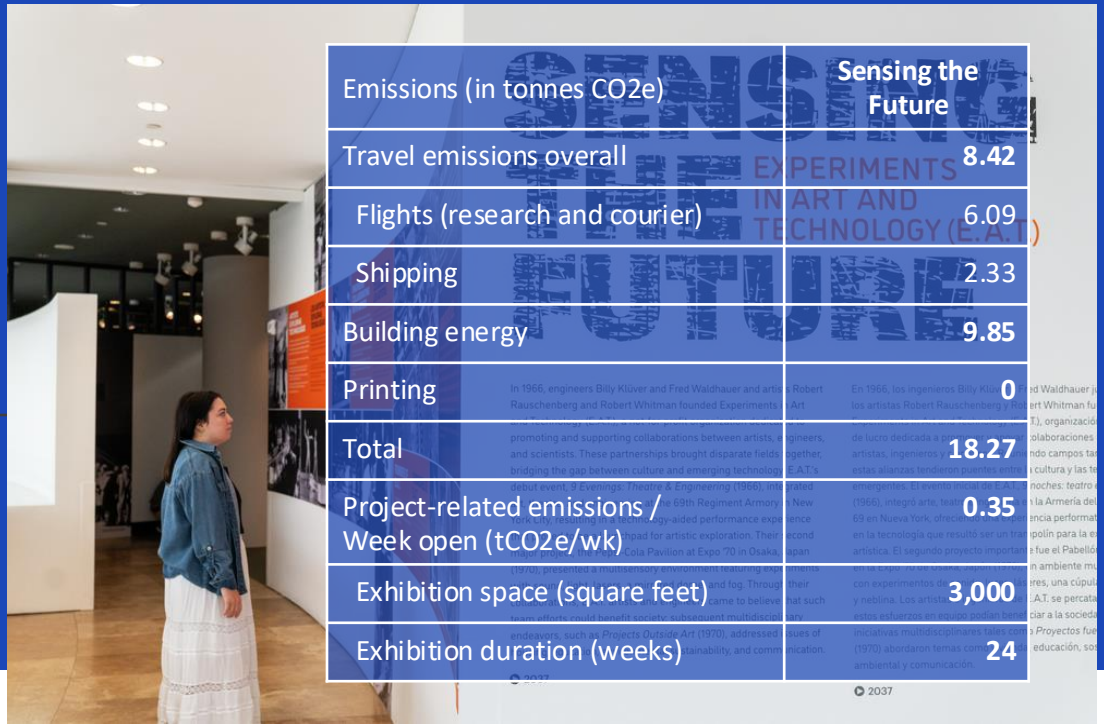


Emissions (in tonnes CO2e)	Ultra-Violet
Travel emissions overall	**16.95**
Flights (research and courier)	14.70
Shipping	2.25
Building energy	**1.87**
Printing	**0.01**
Total	**18.83**
Project-related emissions / Week open (tCO2e/wk)	**1.06**
Exhibition space (square feet)	**756**
Exhibition duration (weeks)	**16**

Getty

Sensing the Future: Experiments in Art and Technology (E.A.T.)

- 23-week duration; 3,000 sq. ft.
- The mid-range* of the 3 exhibitions we measured
- A Getty Research Institute exhibition of archival materials and loans
- Loans were transported via consolidated ground shipment
- **Exhibition traveled to Luma Arles after presentation @ Getty; travel footprint not measured or included*

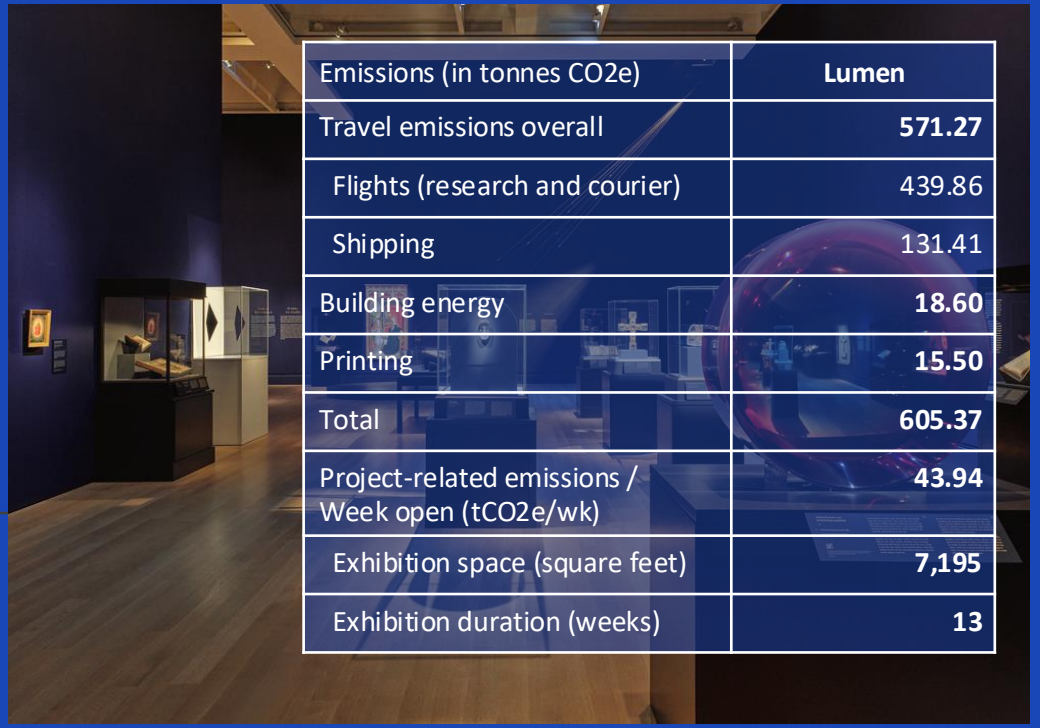


Emissions (in tonnes CO2e)	Sensing the Future
Travel emissions overall	8.42
Flights (research and courier)	6.09
Shipping	2.33
Building energy	9.85
Printing	0
Total	18.27
Project-related emissions / Week open (tCO2e/wk)	0.35
Exhibition space (square feet)	3,000
Exhibition duration (weeks)	24

Getty

Lumen: The Art & Science of Light

- 13-week duration; 7,156 sq. ft.
- The largest footprint of the 3 exhibitions we measured, and of any of the exhibitions measured in the PST CIR program
- We chose this exhibition for just this reason – knowing it would have the largest impact of the Getty projects
- 121 objects from 52 lenders across 8 countries, primarily shipped by air
- 34 in-person couriers + 4 virtual couriers for installation; 31 in-person couriers + 4 virtual couriers for deinstallation



Emissions (in tonnes CO2e)	**Lumen**
Travel emissions overall	**571.27**
Flights (research and courier)	439.86
Shipping	131.41
Building energy	**18.60**
Printing	**15.50**
Total	**605.37**
Project-related emissions / Week open (tCO2e/wk)	**43.94**
Exhibition space (square feet)	**7,195**
Exhibition duration (weeks)	**13**

Getty

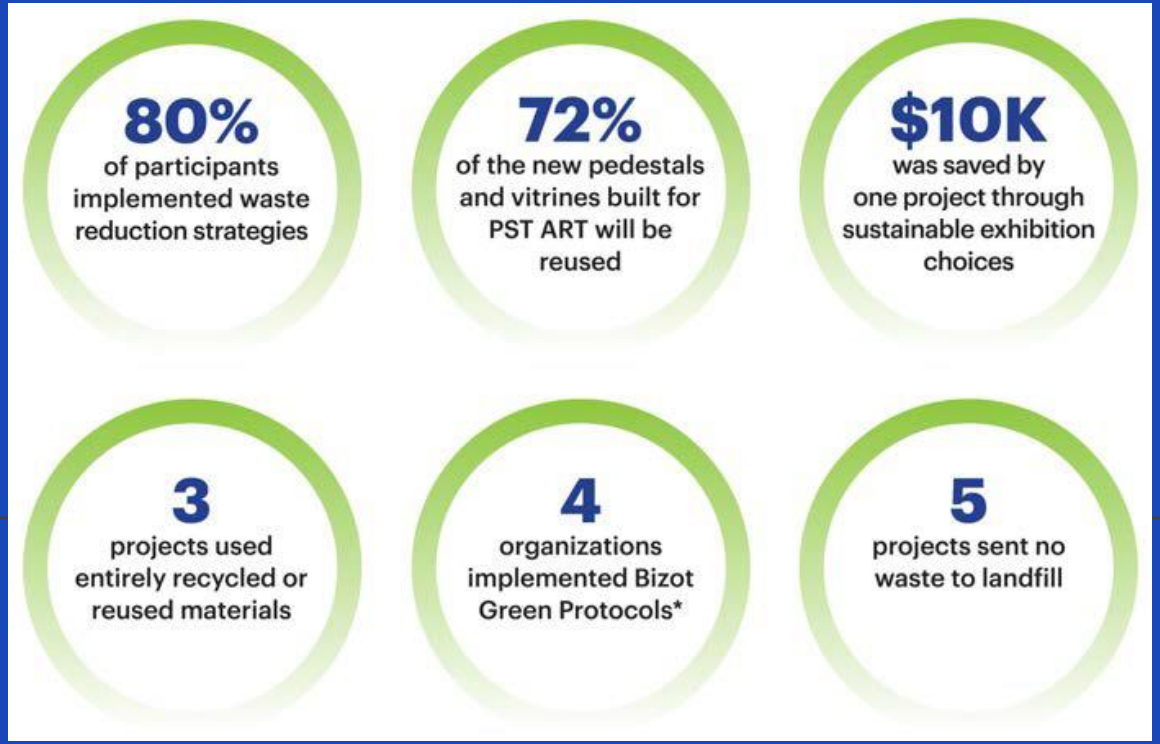
The Quantitative Roll-up

Emissions (in tonnes CO2e)	Ultra-Violet	Sensing the Future	Lumen	CIR overall *(35 reports*)*
Project-related transit emissions	**16.95**	**8.42**	**571.27**	***(averages)***
Flights (research and courier)	14.70	6.09	439.86	*29.91*
Shipping / freight	2.25	2.33	131.41	*15.12*
Project-related emissions / Week open (tCO2e/wk)	**1.06**	**0.35**	**43.94**	**45.03** ***29.39***
Exhibition space (square feet)	**756**	**3,000**	**7,195**	***7,282***
Exhibition duration (weeks)	**16**	**24**	**13**	***26***
Building energy	**1.87**	**9.85**	**18.60**	***35.20***
Printing	**0.01**	**0**	**15.50**	***2.54***
Total reported emissions	**18.83**	**18.27**	**605.37**	**2,167.00**

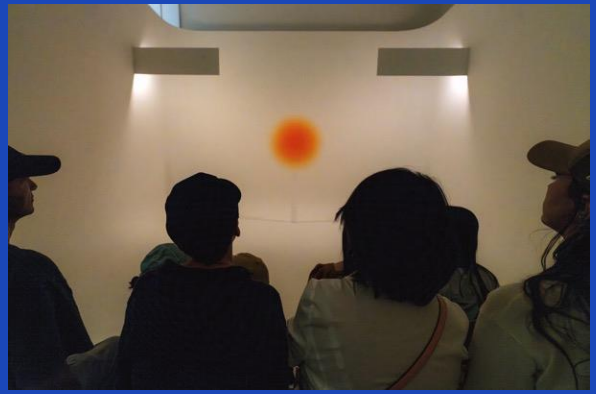
**** Only the 35 reports submitted with this data; NOT the full footprint of the 84 exhibitions in 2024's PST ART***

Getty

Some Qualitative Results



Lessons Learned & Impact in Getty Practices



Exhibition Planning

- Extending durations for run dates of shows
- Allowing adequate lead time for planning & workflow
- Pace of major exhibitions over time; PST going to 5 years
- Budgets are informed by the institution's priorities
- Going it alone, or having an International or Regional partner

Art Transportation, Early Research, and Couriers

- Acknowledging the impact of air travel for staff and art
- Continue to prioritize appealing for reduction in couriers, and allow for digital couriers
- Give meaningful structure to early curatorial research

Museum Operations

- Efficiency of gallery use, flexibility of exhibition build-out
- Importance of maintaining casework inventory and making sure adaptive reuse is considered before building or buying new
- Continued engagement with staff on practices.

For more information:

Report:

- https://www.getty.edu/publications/pst-art-climate-impact-report-2025

Background and news releases:

- https://www.getty.edu/news/getty-inaugurates-pst-art-climate-impact-program/
- https://pst.art/en/press/gettys-pst-art-releases-largest-ever-dataset-on-climate-impact-of-exhibition-making
- https://pst.art/en/climate
- https://www.getty.edu/news/getty-museum-exhibition-carbon-footprint-measurement/

Select media coverage:

- https://www.theartnewspaper.com/2025/11/18/getty-pst-art-climate-report-exhibitions-environmental-impacts
- https://www.theartnewspaper.com/2024/06/28/getty-pst-art-sustainability-climate-change-environmental-science

Getty

Creating Impact through Collaborating for Change: The Tale of a Collective Climate Action Statement



Getty

Timeline



Getty

For more information:

Statement news release:

- https://www.getty.edu/news/getty-lacma-moca-hammer-hauser-wirth-announce-collective-commitment-to-climate-action/

Getty's Collections and Archives Climate Action page:

- https://www.getty.edu/projects/committing-to-climate-action/

Select media coverage:

- https://www.artnews.com/art-news/news/los-angeles-institutions-green-protocol-1234776795/
- https://blooloop.com/la-art-museums-climate-action/
- https://fadmagazine.com/2026/03/09/getty-lacma-moca-hammer-museum-and-hauser-wirth-announce-collective-commitment-to-climate-action/

Getty

Takeaways

By the end of this session, you should be able to say:

1. Take Away one: Making sustainable material choices will result in a lower carbon content exhibit that will reduce environmental impact of your exhibits.

2. Takeaway two: Understand the larger context of green exhibits and sustainable exhibitions

3. Takeaway three: Identify opportunities and understand the importance of regional collaboration.

Resources and contact

Adam Mitchell, AIA
CambridgeSeven
amitchell@cambridgeseven.com

Leslie Tom, MIMS, Assoc AIA, NOMA
Charles H. Wright Museum of African American History
LinkedIn: les733

Camille Kirk
J. Paul Getty Trust
LinkedIn: ckirk

QR Code to Toolkit at Issuu

PHIPPS Duke Farms

Questions?

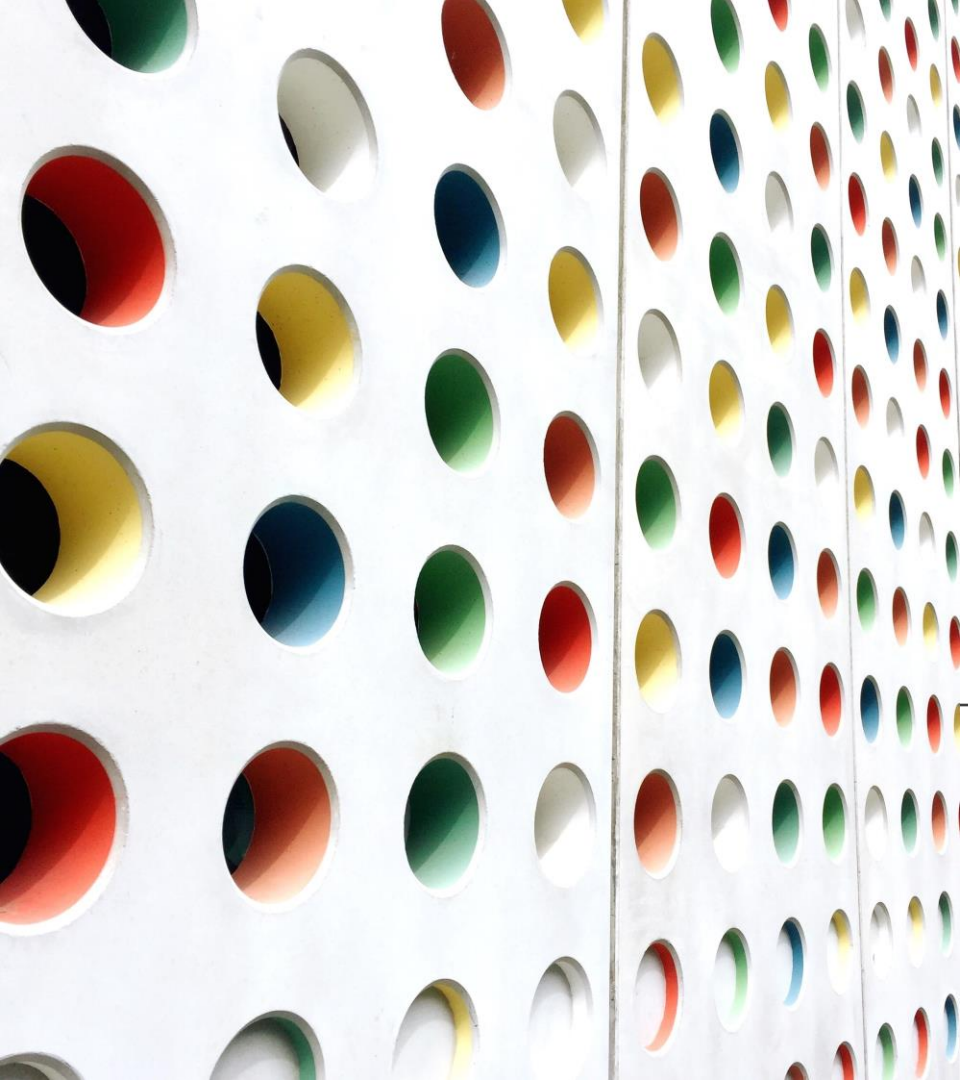
issuu.com – To exit full screen, press Esc

Sustainable Exhibition Design & Construction

Toolkit

v6 Sep 2024

QR Code to Toolkit at Issuu



Sustainable Exhibits & Resource Management

TO POSITIVELY IMPACT HUMAN HEALTH, THE CLIMATE, THE ENVIRONMENT, AND SOCIETY

OCTOBER 30, 2026

Museum Exhibition Materials Pledge

To interior finish and graphic substrate manufacturers:

As members of the museum exhibition community, including, but not limited to the Alliance for American Museums (AAM) National Association for Museum Exhibition (NAME) and the Environment and Climate Network (ECN), we work towards accelerating change in the manufacturing community. Inspired by the AIA (American Institute of Architects) Materials Pledge of 2019 and the Lighting Advocacy Letter of 2021, we unite as museum exhibition designers, fabricators, and installers to ask manufactures to continue to raise their standards of transparency while providing long-lasting, high-quality materials that positively impact all people.

As museum exhibit designers, fabricators, and installers, we join with our colleagues who have signed the 2019 AIA Materials Pledge, and we also pledge to:

- support **human health** by preferring products that support and foster life throughout their life cycles and seek to eliminate the use of hazardous substances.
- support **social health & equity** by preferring products from manufacturers that secure human rights in their own operations and in their supply chains, positively impacting their workers and the communities where they operate.
- support **ecosystem health** by preferring products that support and regenerate the natural air, water, and biological cycles of life through thoughtful supply chain management and restorative company practices.
- support **climate health** by preferring products that reduce carbon emissions and ultimately sequester more carbon than emitted.
- support a **circular economy** by reusing and improving buildings and by designing for resiliency, adaptability, disassembly, and reuse, aspiring to a zero-waste goal for global construction activities.

To address these concerns and to meet our goals of transforming the industry, we commit to continuously updating or design libraries and specifications. We commit to sharing best practices, educational resources, and preferred products with our museum exhibition community. We further commit to giving priority to products and manufacturers with a commitment to:

- Provide publicly available material ingredient disclosure information.
- Provide publicly available environmental impact disclosure information.
- Provide publicly available Design for Freedom supplier questionnaires or similar supply chain disclosure information.
- Do not stop at material transparency, but strive for optimization.

To achieve this goal, we must work together as museum leadership, museum boards, exhibit directors, curators, exhibit designers, graphic designers, lighting designers, audiovisual designers, audiovisual specifiers and installers, building product manufacturers, graphic print houses, exhibit fabricators and exhibit installers to build awareness, share knowledge, drive demand, and deliver solutions. We ask you, as responsible product manufacturers for your commitment to work towards market transformation in the museum exhibition world. To accelerate this mission and to leverage cross-industry insight and expertise, we seek your partnership in advancing this conversation at upcoming industry annual meetings, conferences, and trade shows.

We value our relationship with each of you and we understand that the change we seek will not be accomplished overnight. Please join us in continued dialogue and collaboration as we learn from each other and improve the best practices of museum exhibitions.

Sincerely,

MUSEUM EXHIBITION MATERIALS PLEDGE SIGNATORIES

10:45 -- 10:50 Settle --
10:50 - 10:55 -- Intro + Learning Objectives
10:55 -- 11:07 am - Adam + clarifying questions
11:10 - 11:25am - Leslie + clarifying questions
11:30 - 11:42am - Camille + clarifying questions
11:45 - 12:noon - Q&A