



CLIMATE ACTION STARTS WITH A CONVERSATION

**REBUILD
Cincinnati
October 4, 2024**

Three Inspiring Case Studies



AIA
COTE
Top Ten

Keller Center 2019



LIVING
BUILDING
CHALLENGE

Academy for Global Citizenship



ULI

Climate Action Museum

**Climate Action is 10% Hardware
and 90% Mindset**



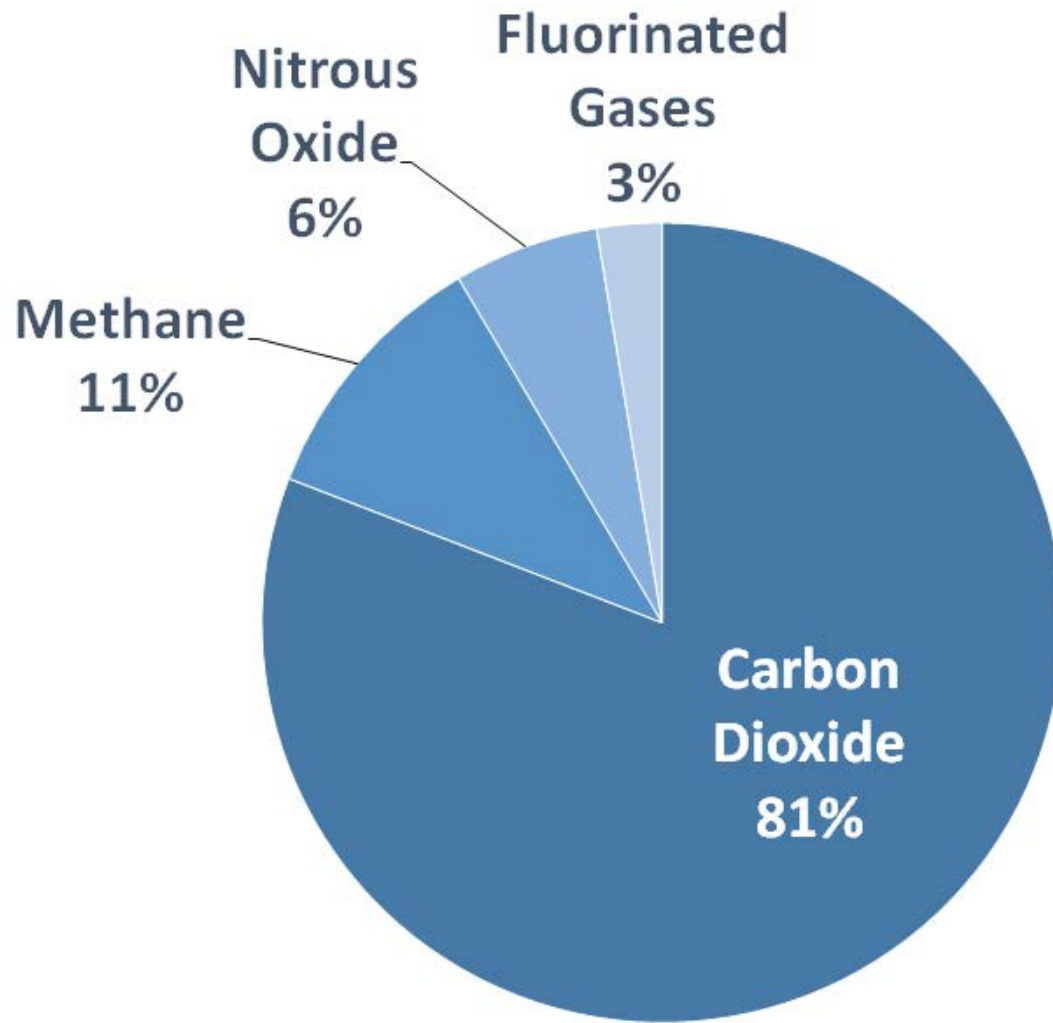




Burning coal
Carbon Dioxide



Livestock

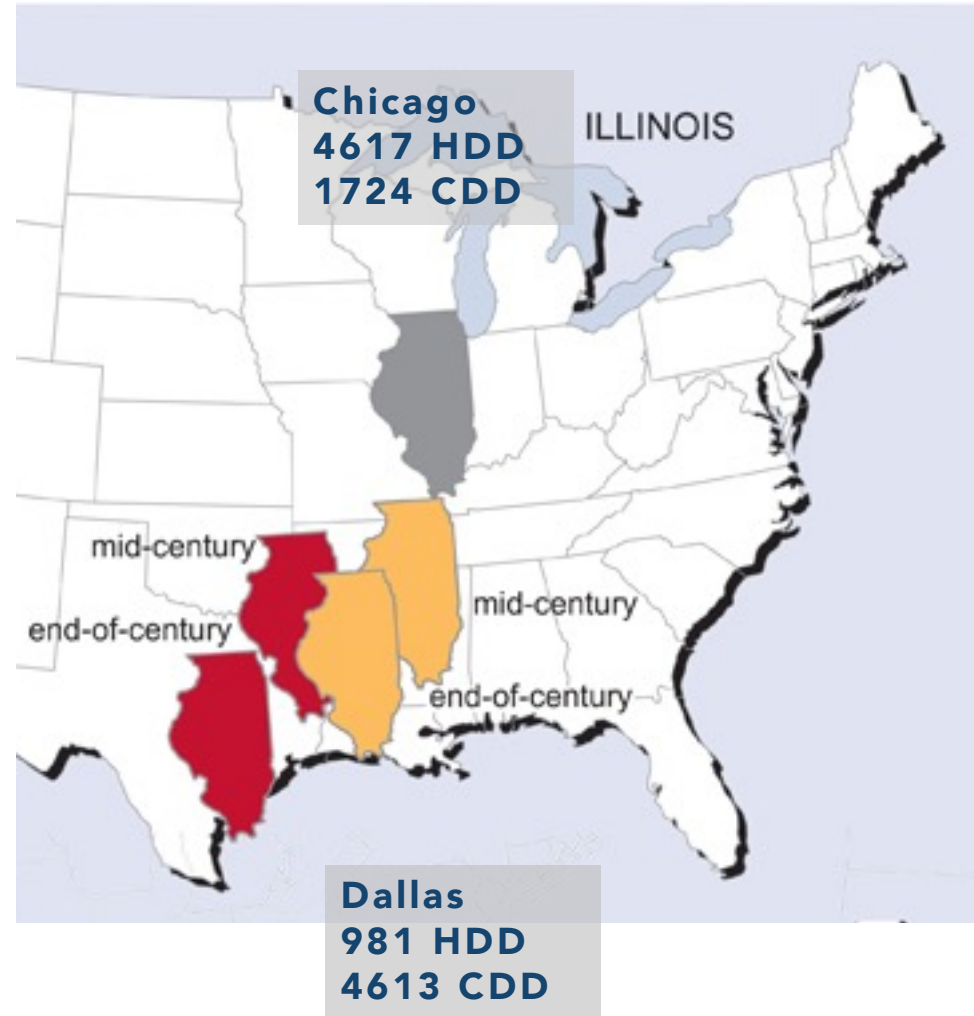
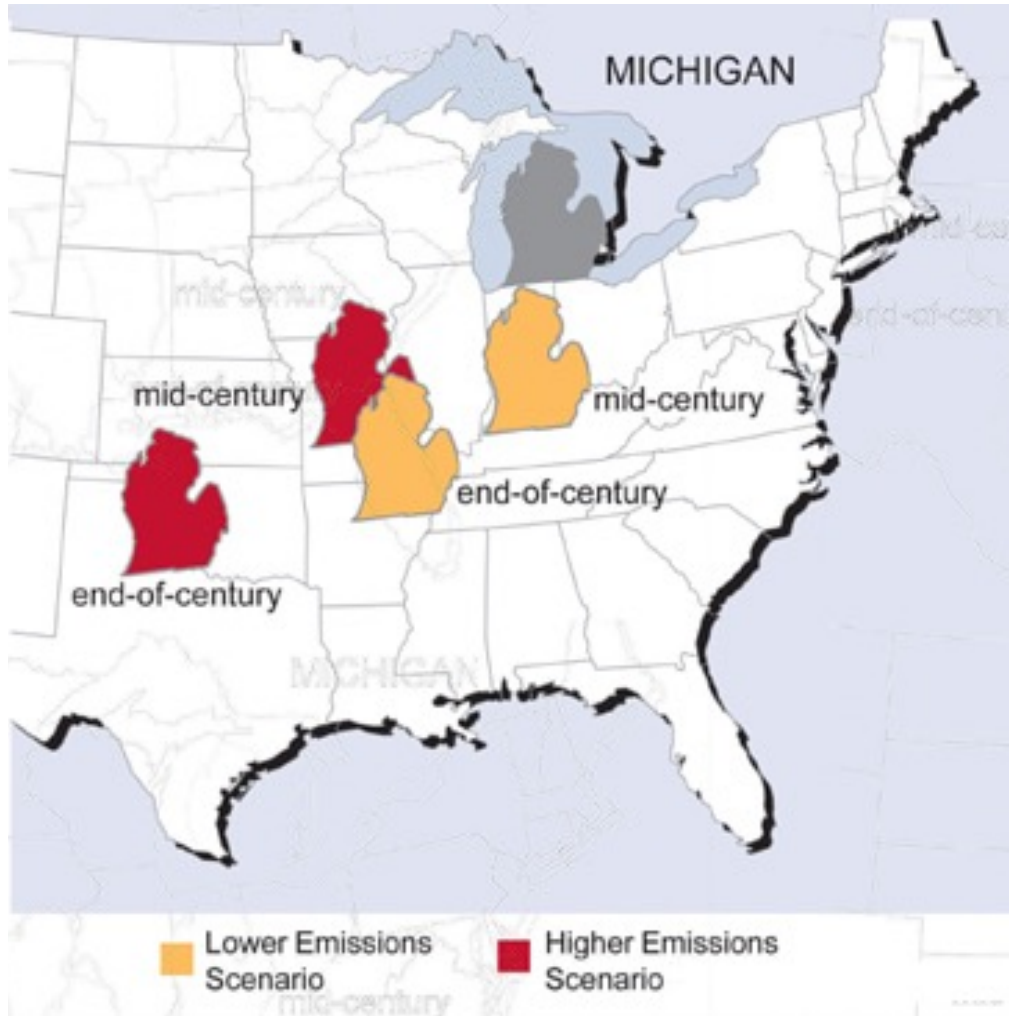


Deforestation)



Fluorinated gases.

The Midwest Climate is Changing



What Warming May Bring*

0°

Prei

+6°

+1°

We i

the p

wari

The oceans emit poisonous hydrogen sulphide gas.

ole

+1.5

The

240

extr

+7°

In the tropics, exposure to the outdoors becomes deadly as heat dissipation becomes impossible.

verage

+2°

The

wide

begi

+8°

The world's current grain-producing regions are no longer able to produce food efficiently.

vation

+3°

The

flee

duce

+3.7~

Economic damages from climate change total \$551 trillion—twice as much wealth as exists in the world today.

***Architecture 2030**

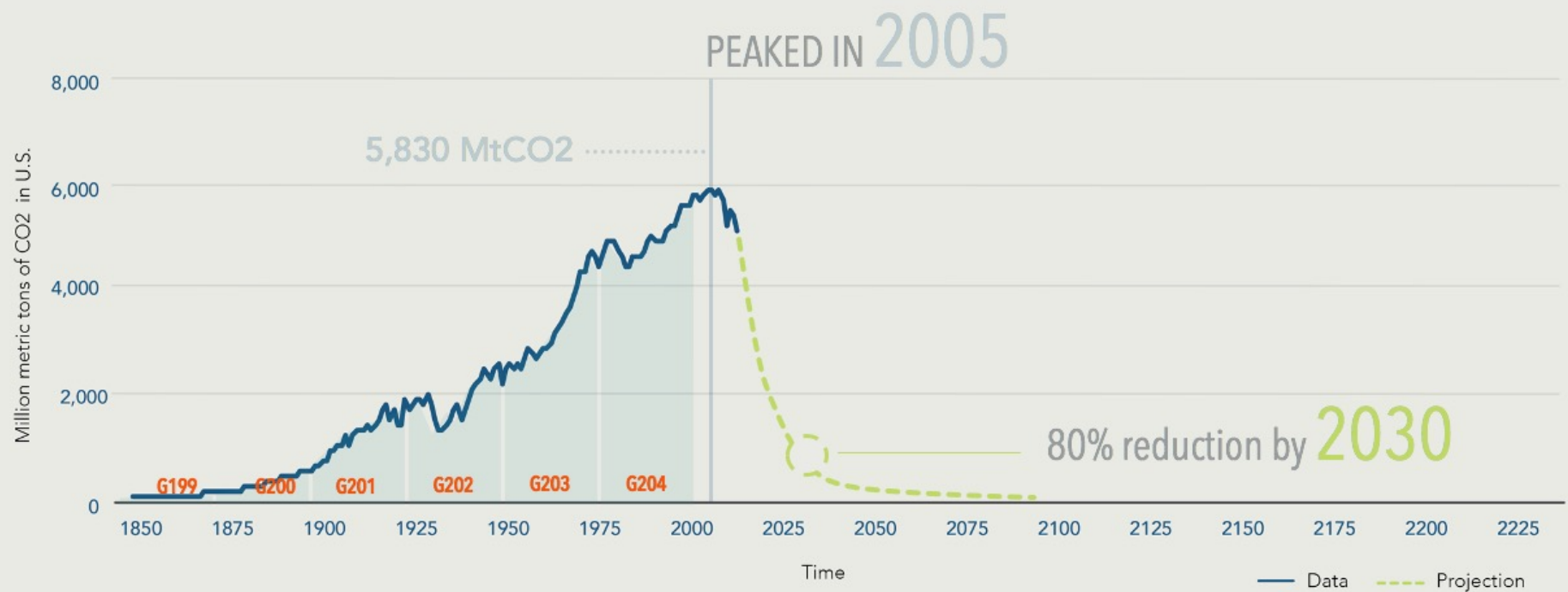
“We're the first generation to feel the sting of climate change. And we're the last who can do something about it.”

Governor Jay Enslee



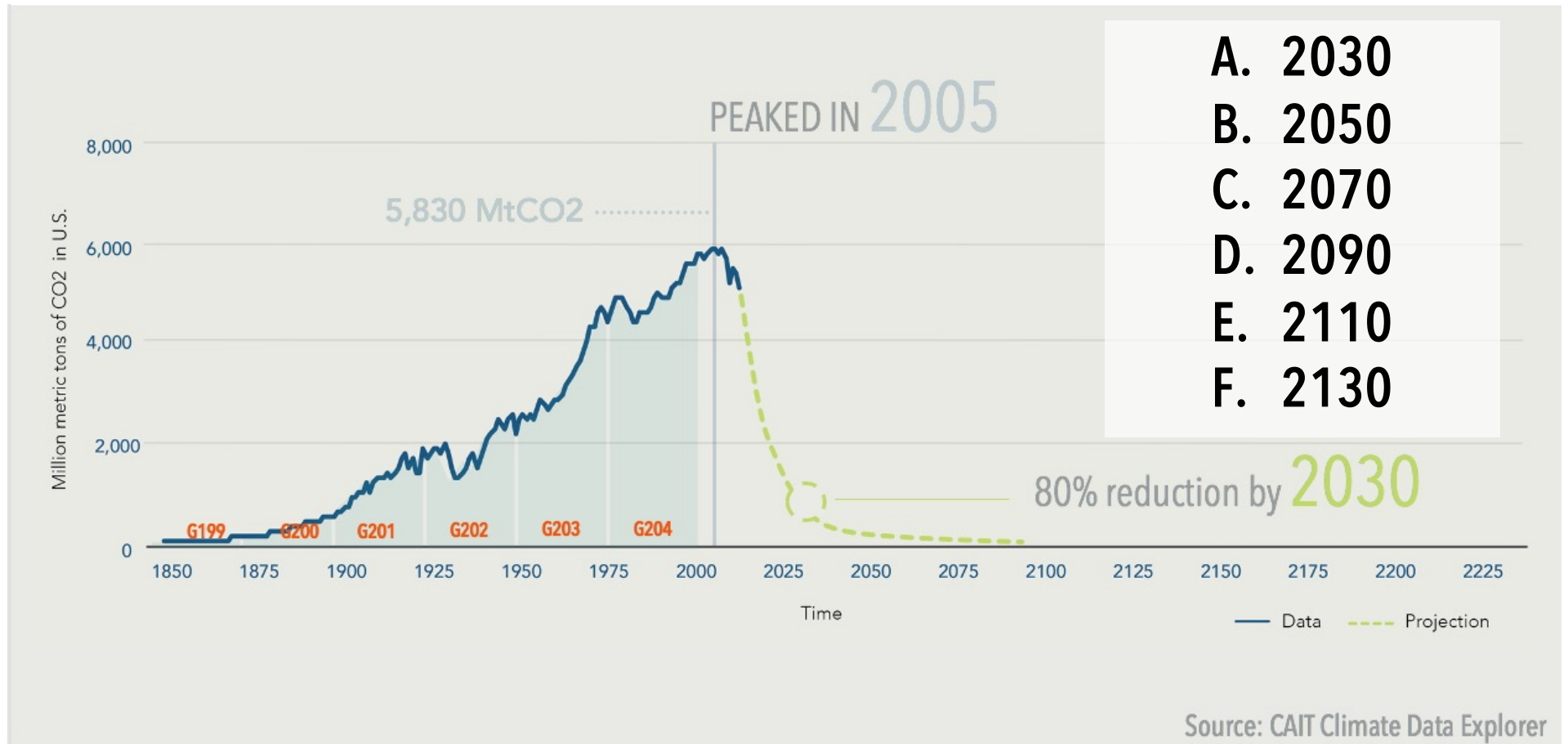
Might Time Be Our Scarcest Resource?

How Quickly Can the U.S. Economy Decarbonize?

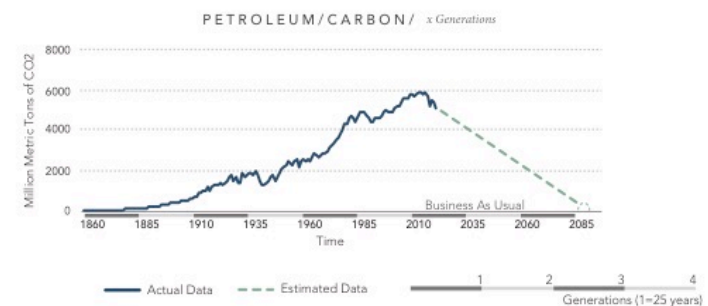
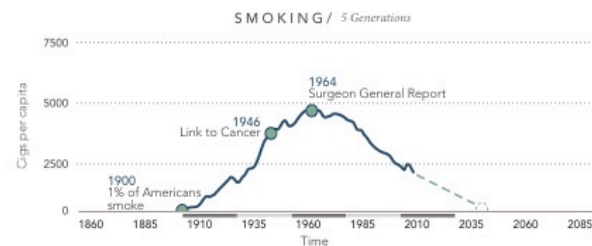
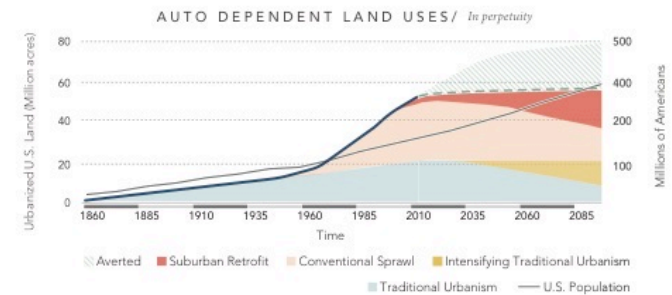
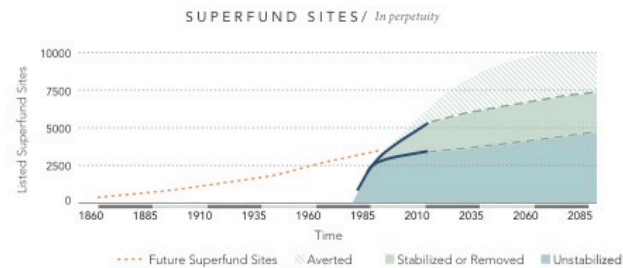
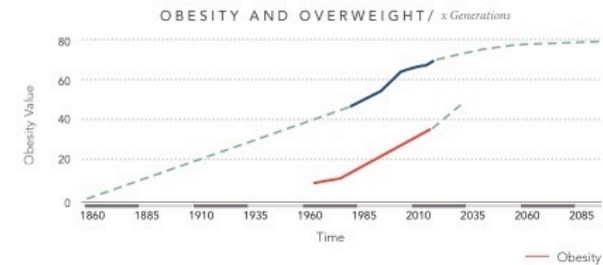
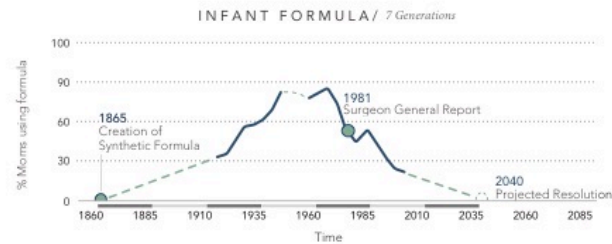


Source: CAIT Climate Data Explorer

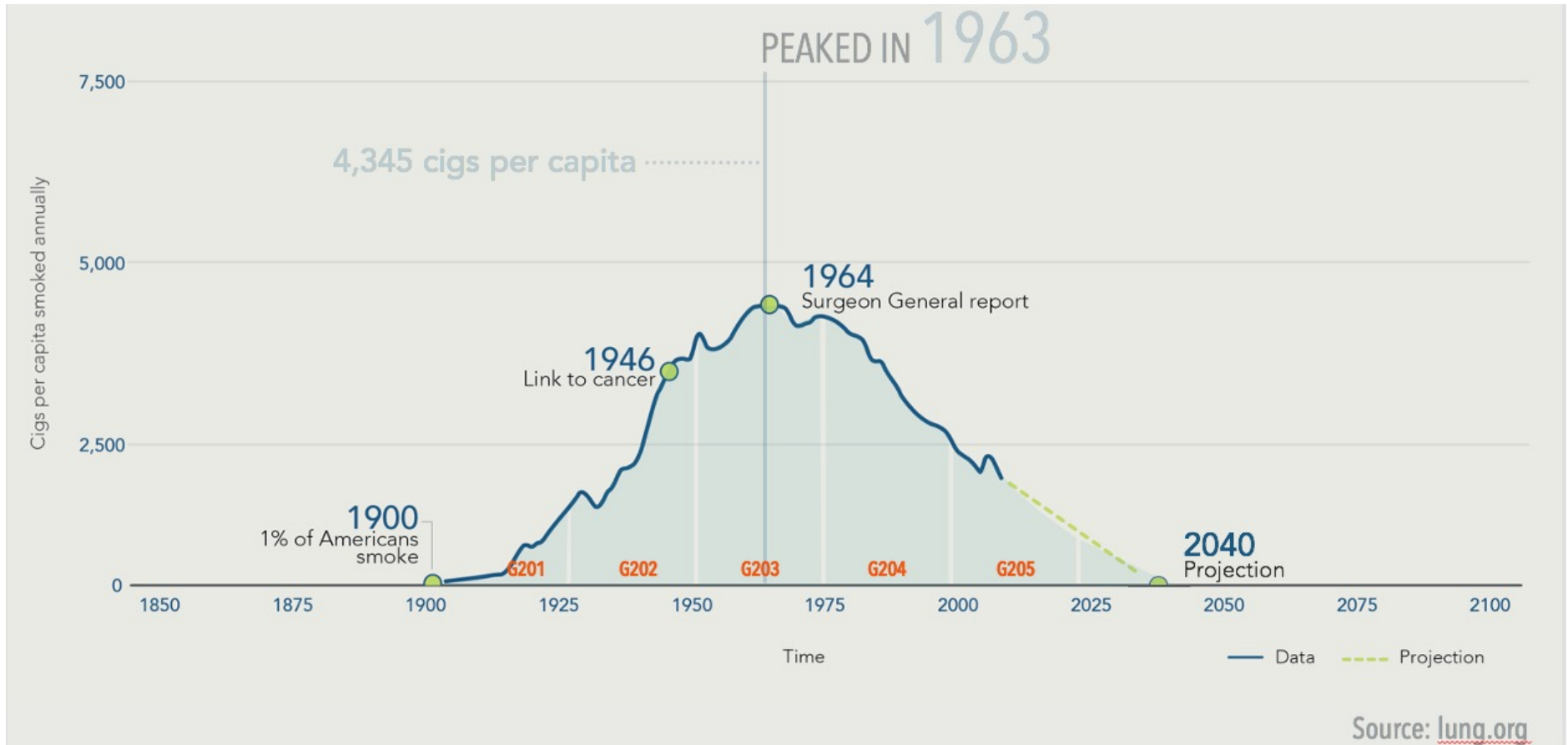
How Quickly Can the U.S. Economy Decarbonize?



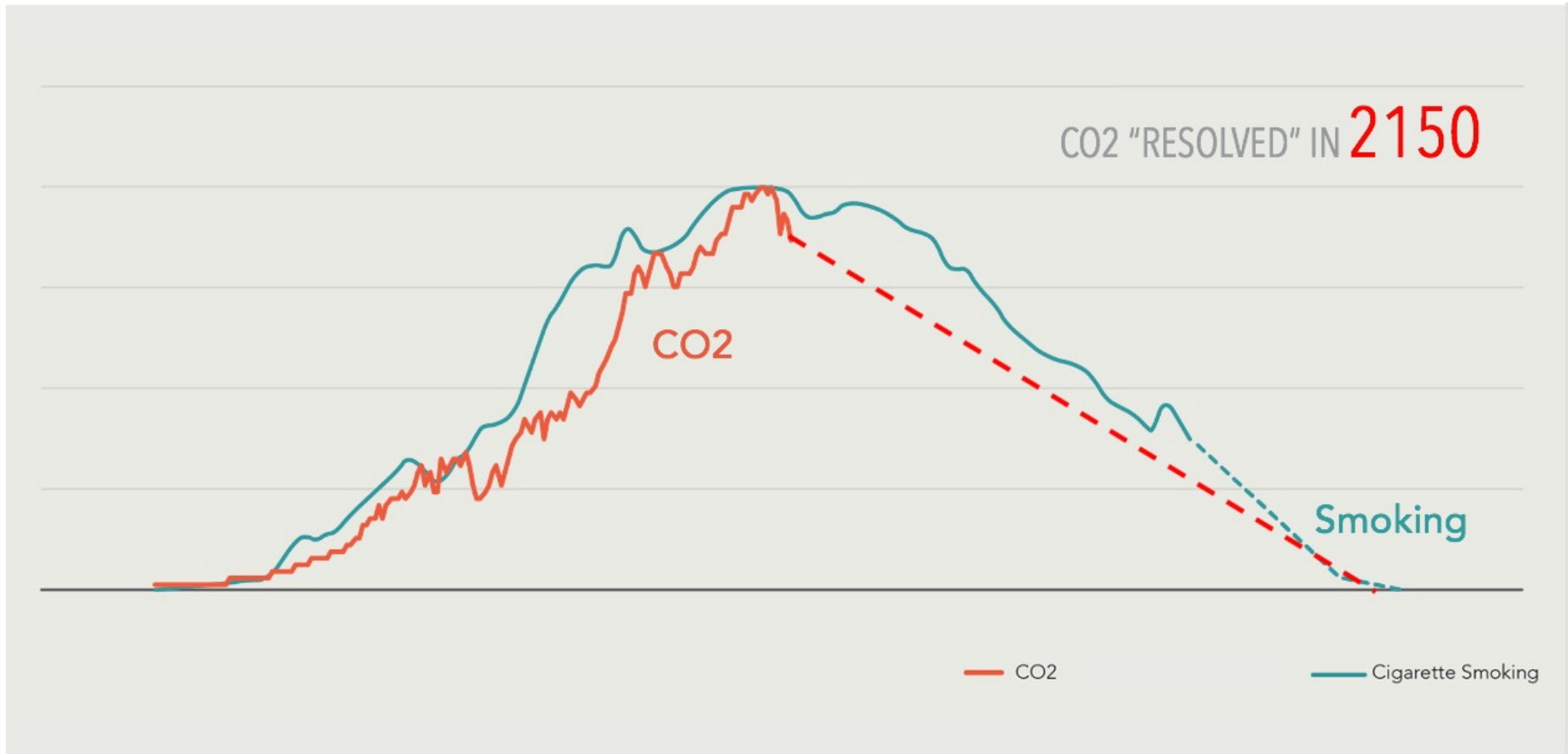
Changelines: A Tool for Comparing the Pace of Change



Smoking Cessation is the Fastest We've Ever Changed

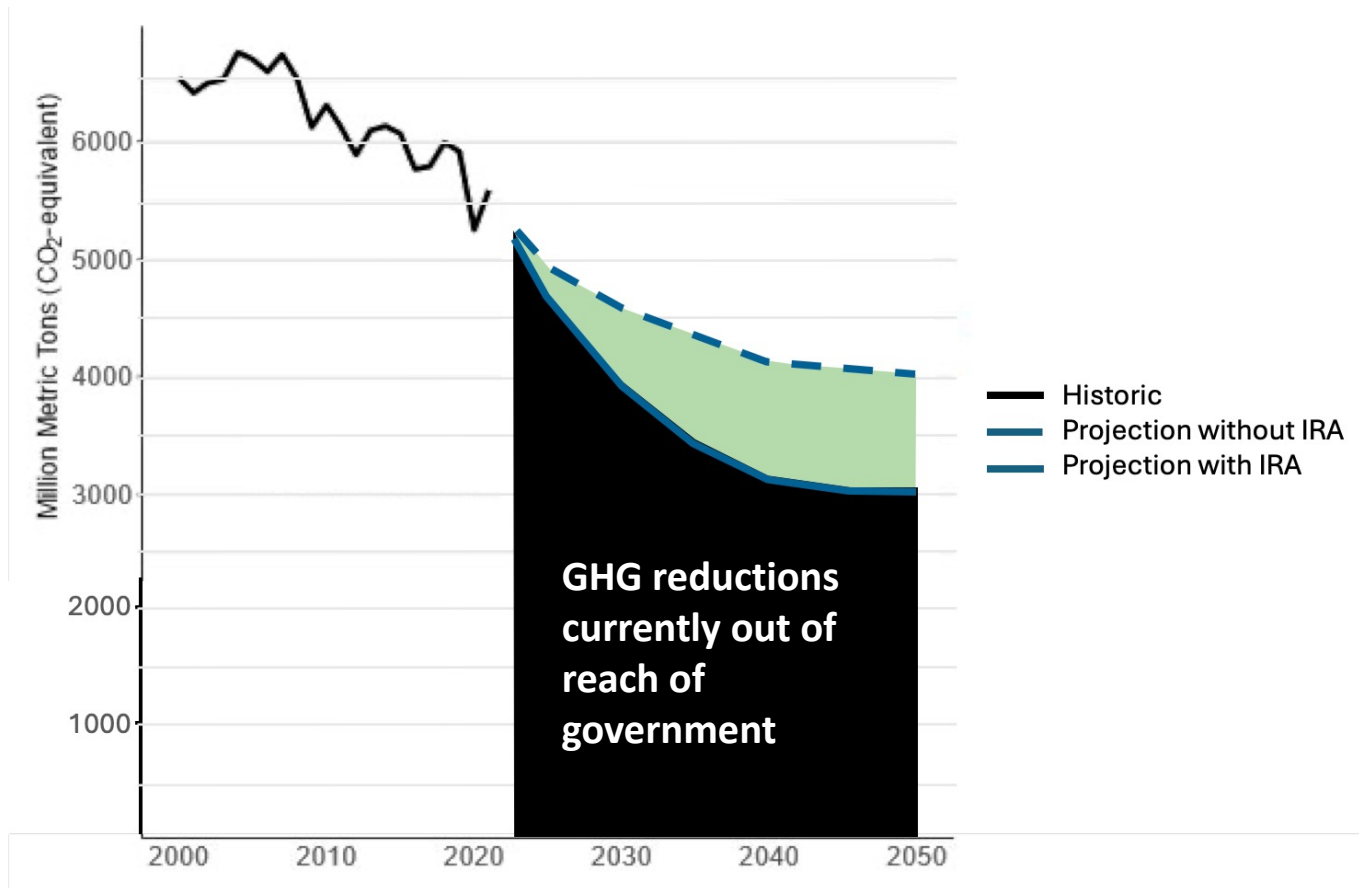


Decarbonizing at the Rate We Quit Smoking would take 125 yrs.



**We Evolved to Expect a Leader
to Protect Us From Harm**

In 2050 when the IRA is fully in effect 60% of emissions will remain



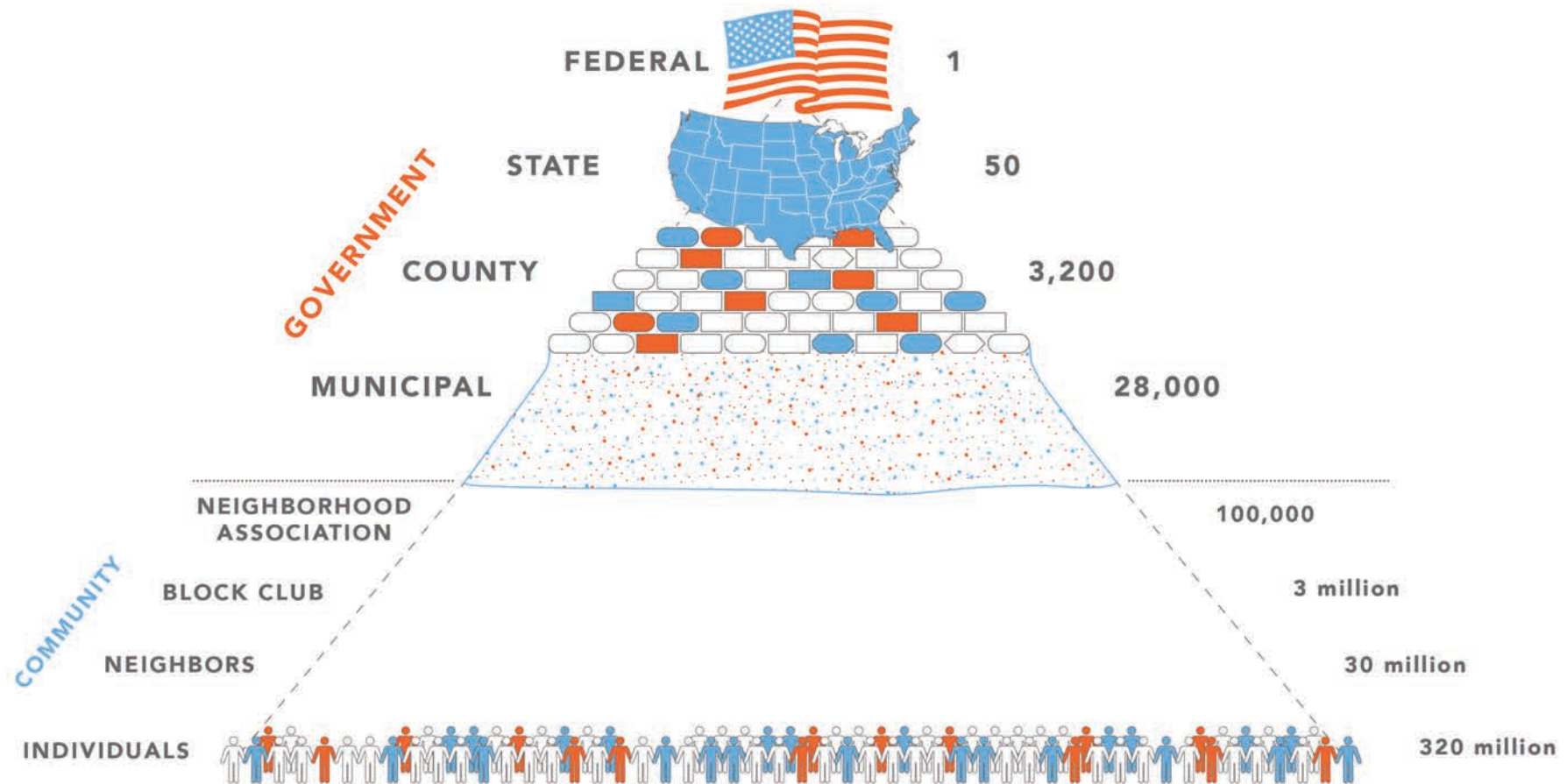
**WE HAVE MET
THE ENEMY
AND HE IS US.**



WALT
KELLY

We All Need to Lead on Climate

Who is causing the problem? Who has the agency to act?

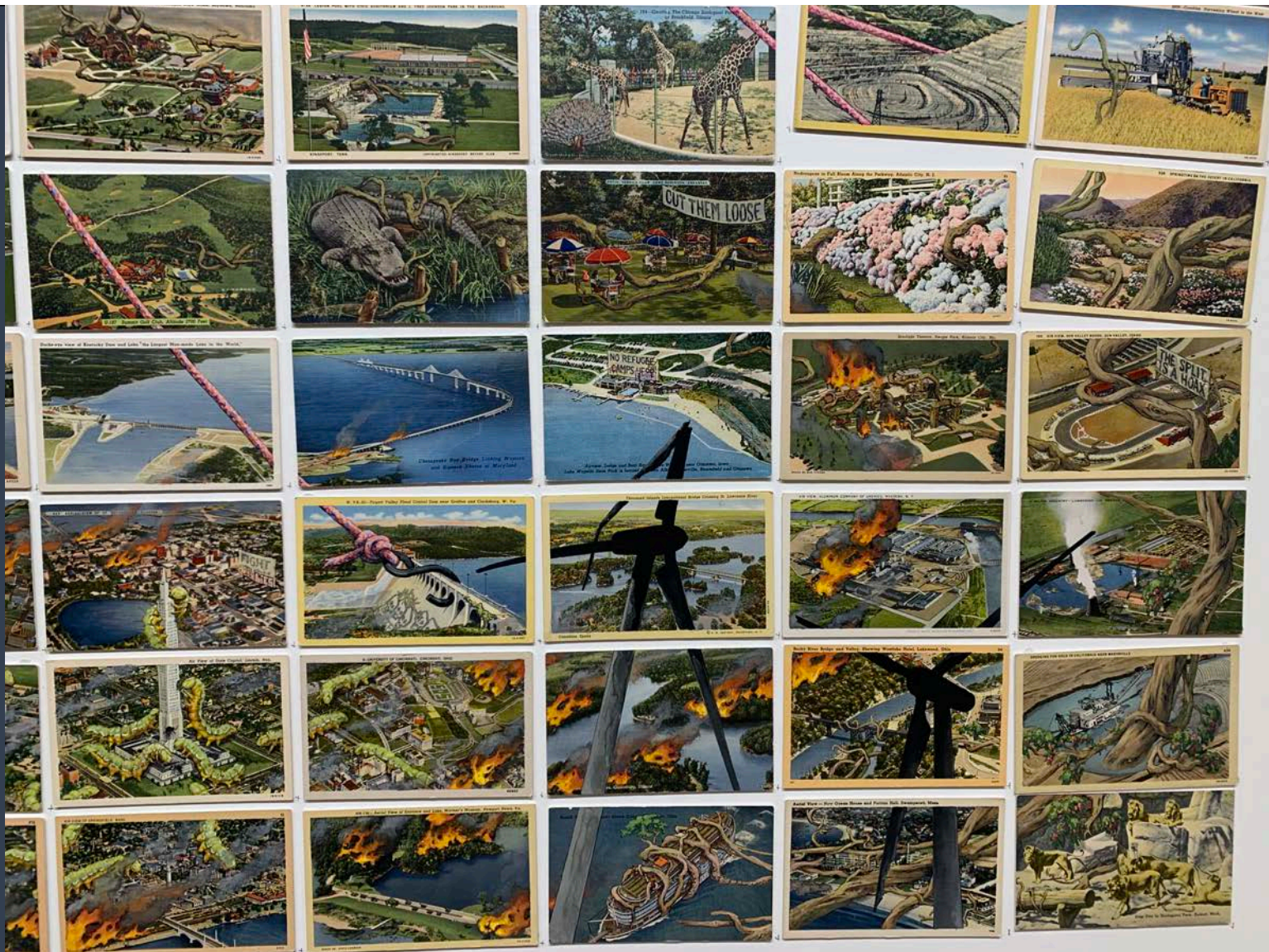




Art expands our sense of agency

and community, equipping us to act on what we know and feel. The Climate Museum's goal is to empower us all, to create a broad culture for action on climate. Our pop-up begins with art: a new, epic postcard mural *Someday, all this* by David Opdyke.







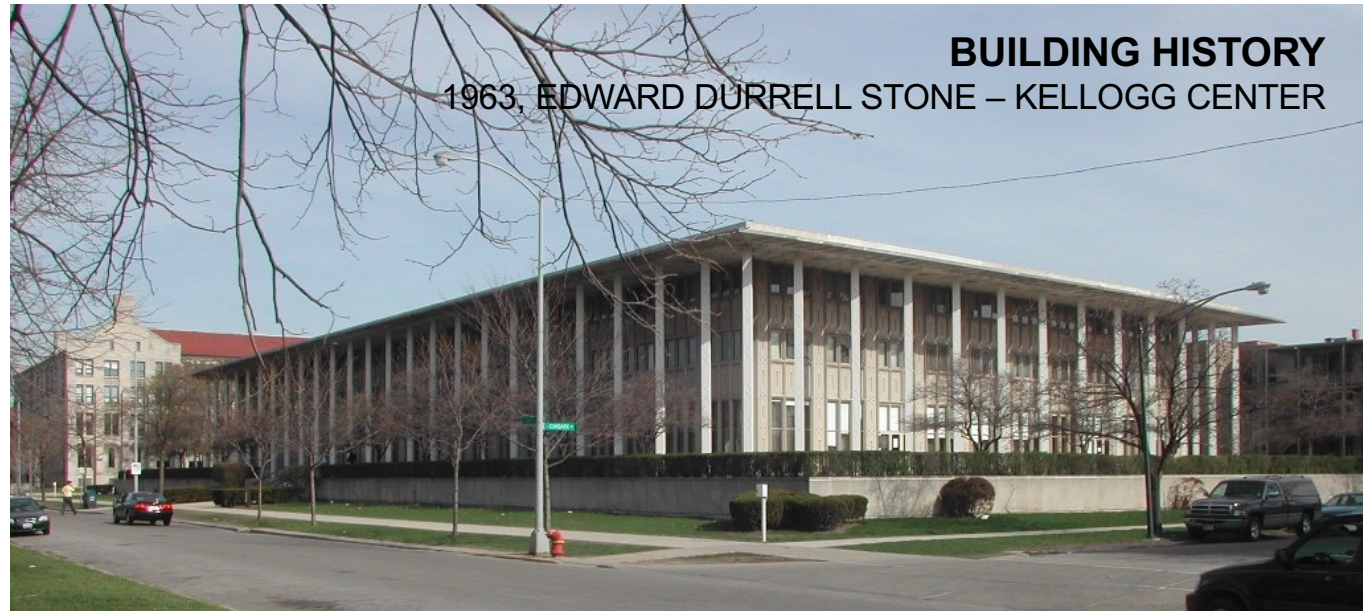


Case Studies of Maximum Agency

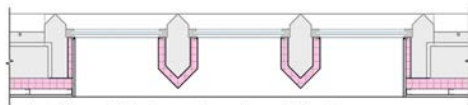
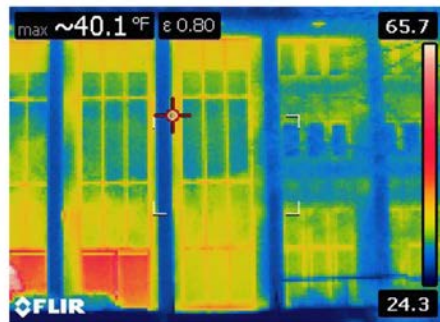
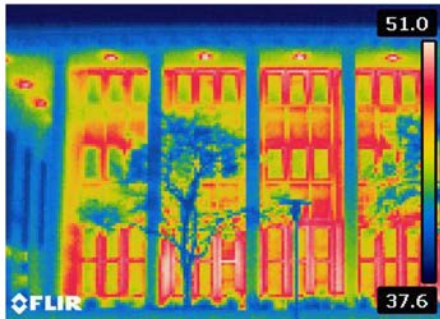
THE UNIVERSITY OF CHICAGO
Harris Public Policy
KELLER CENTER

Speaker:

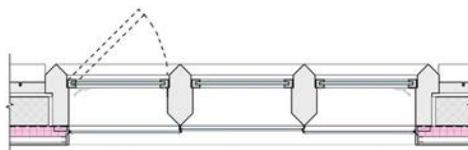








1st Floor Windows Insulated Mullions



2nd & 3rd Floor Operable Storm Windows





EAST
GARDENS

EAST
SKY-COURT

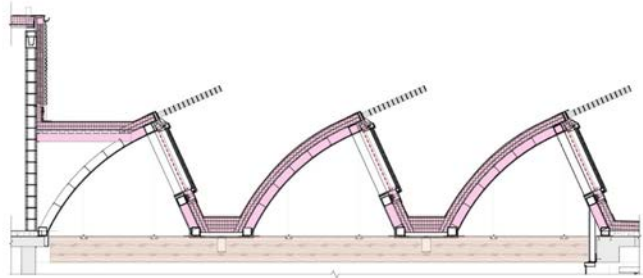
MONUMENTAL
STAIR

ATRIUM
HARRIS FAMILY FORUM

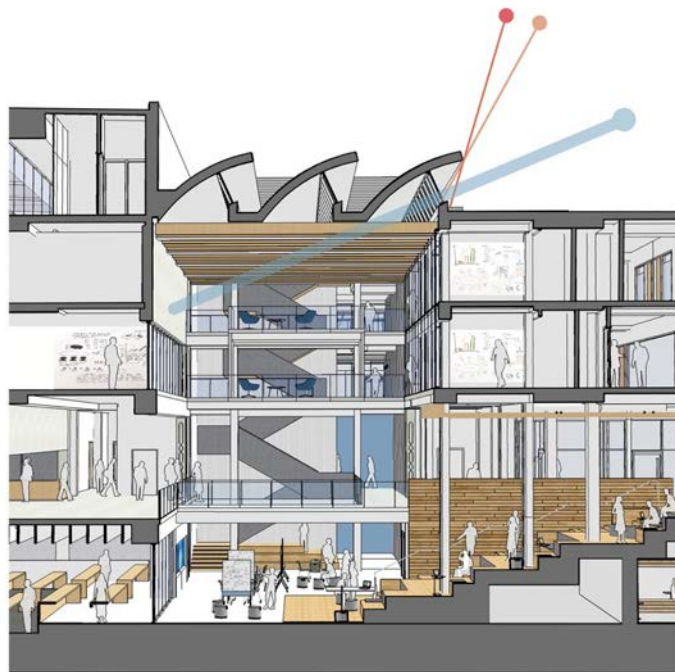
WEST
SKY-COURT

WEST TERRACE
SKYLIGHTS



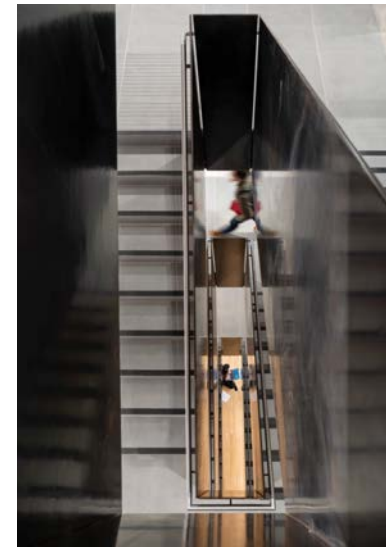
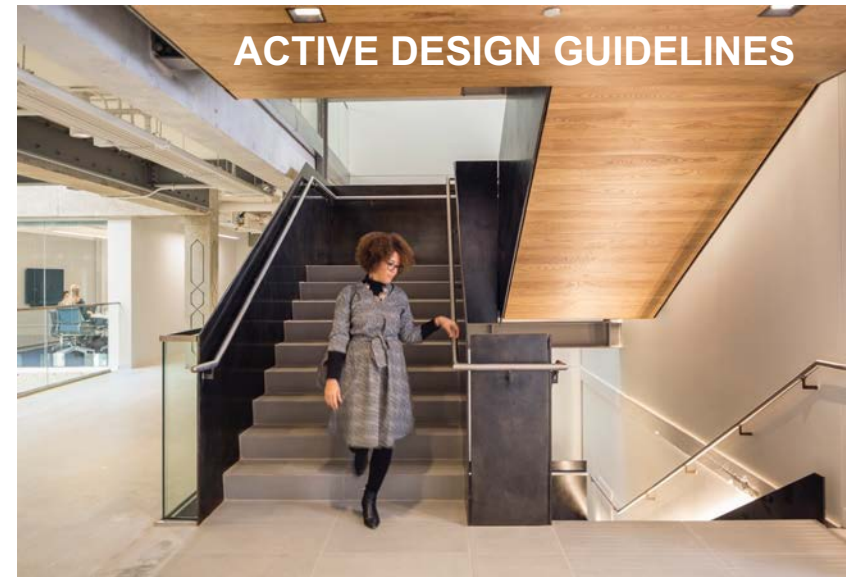


Atrium Skylight Section



Atrium Section





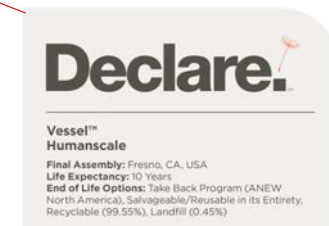




SALVAGED MATERIALS



SALVAGED LIGHT FIXTURE



Declare Products	
Min. # Declare Products:	23
# Installed	36
# Declare Advocacy Sent	70

SALVAGED ASH WOOD
CHICAGO, IL

SALVAGED CHALKBOARDS
PITTSBURG, PA

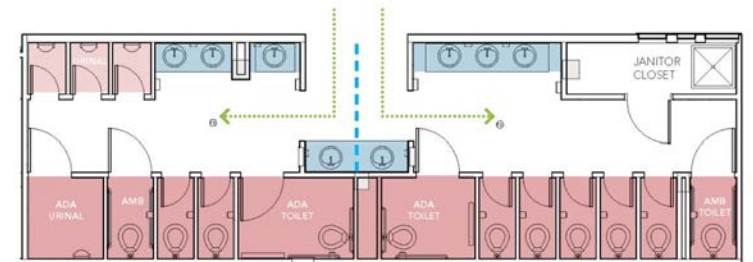


SALVAGED LIMESTONE PANELS
ORIGINAL BUILDING

SALVAGED ART
ORIGINAL BUILDING

SALVAGED BENCHES
ORIGINAL BUILDING





ACADEMY FOR GLOBAL CITIZENSHIP
Chicago, IL
2023



Raising Expectations on Green Building Certifications – Thanking LEED



OCCUPANT VALUE



BUILDING PERFORMANCE

ARQUITECTOS COLECTIVOS 2023 | AGC: PIONEERING SUSTAINABLE LEARNING - A NET-POSITIVE ENERGY CAMPUS

FARR | LEN SCIARRA



FARR ASSOCIATES

db

HMS

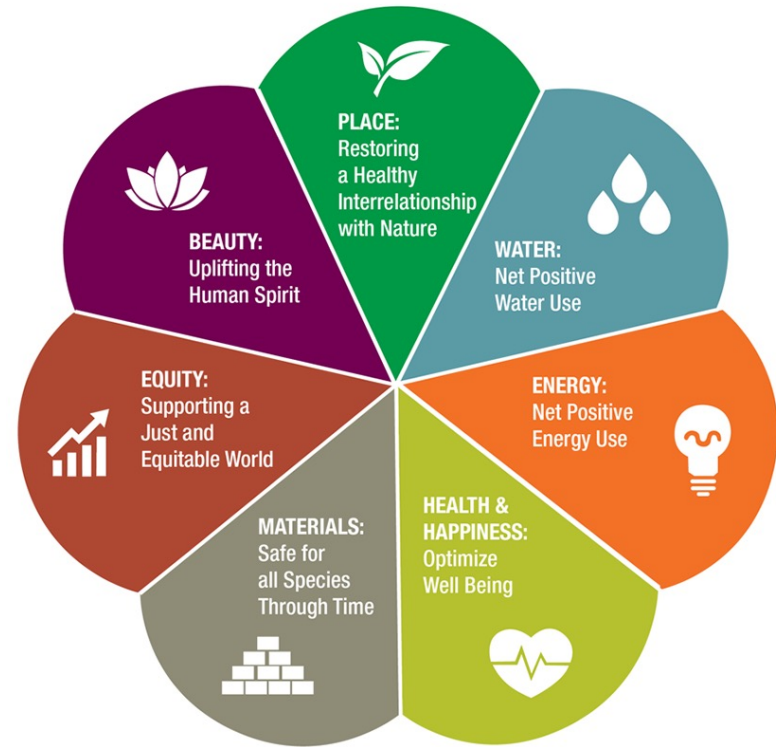


ACADEMY FOR GLOBAL CITIZENSHIP
Chicago, IL **2023**





**LIVING
BUILDING
CHALLENGESM**



Petal 01 - Place

Imperative 01 – Ecology of Place

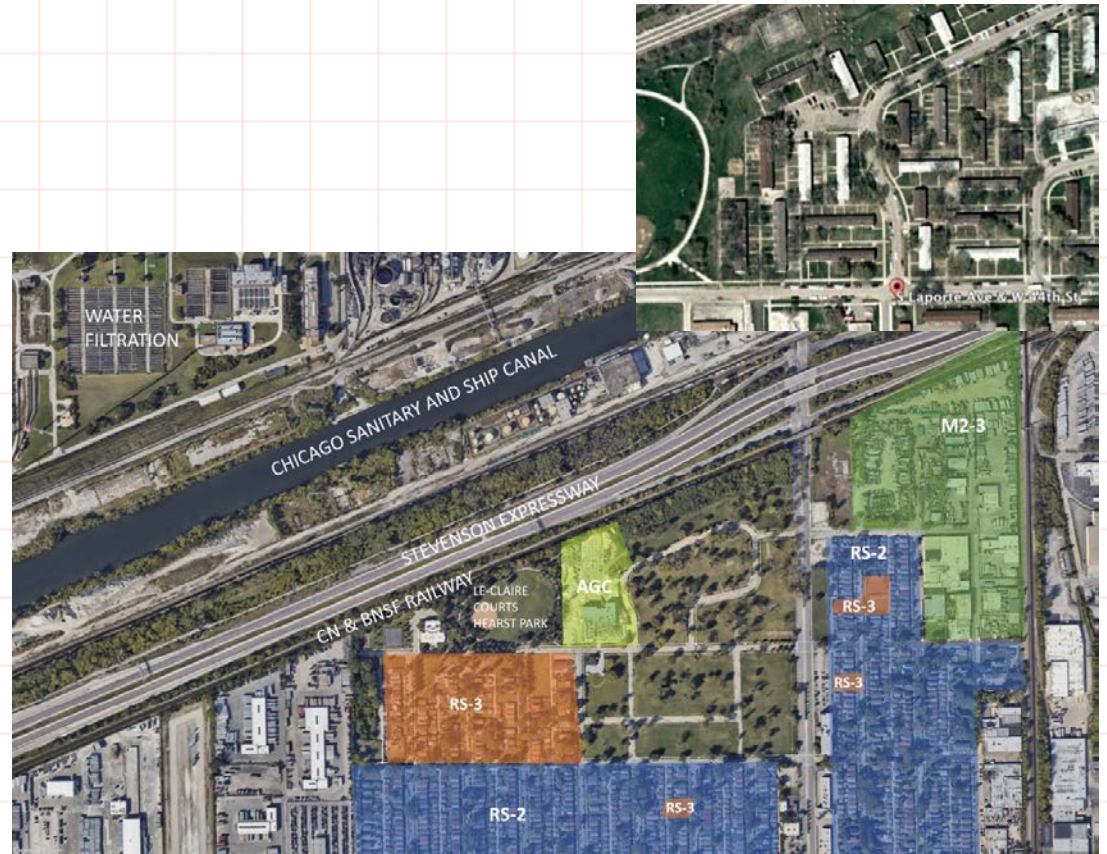
Imperative 02 – Urban Agriculture

Imperative 03 – Habitat Exchange

Imperative 04 – Human-Scaled Living

Requirements:

- No building is allowed on pristine habitat areas.
- Must contribute to local ecology.
- No petrochemical fertilizers are allowed during construction or operation.



Petal 01 - Place

Imperative 01 – Ecology of Place

Imperative 02 – Urban Agriculture

Imperative 03 – Habitat Exchange

Imperative 04 – Human-Scaled Living

Requirements:

- Must dedicate a percentage of project area to growing food.
- In case of emergency, must store 3 days of food for 75% of full time employees.



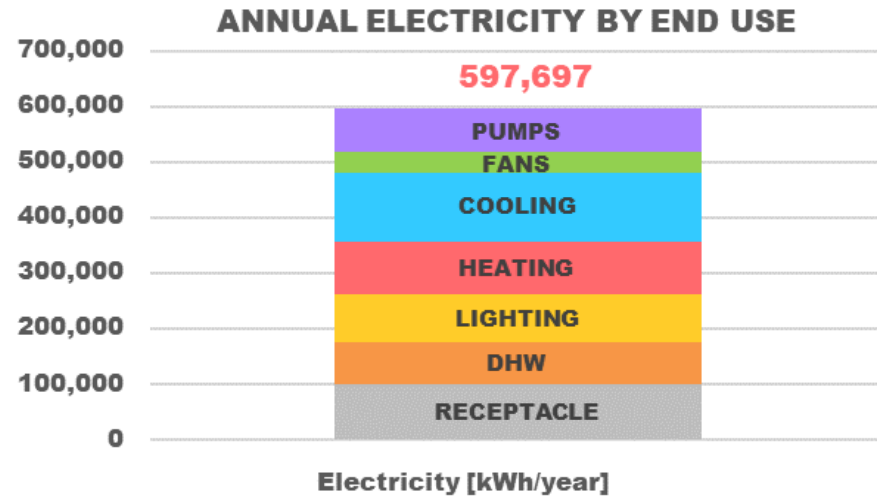
Petal 03 - Energy

Imperative 07 – Energy + Carbon Reduction

Imperative 08 – Net Positive Carbon

Requirements:

- Use 70% less energy than typical baseline building.
- Demonstrate 20% reduction in embodied carbon of building materials.
- Pre-install wiring for future renewable energy systems.



Insulation Material	R-value R/inch	Density lb/ft³	Emb. E MJ/kg	Emb. Carbon kgCO₂/kg	Emb. Carbon kgCO₂/ft³·R	Blowing Agent (GWP)	Bl. Agent kg/kg foam	Blowing Agent GWP/bd-ft	Lifetime GWP/ft²·R
Cellulose (dense-pack)	3.7	3.0	2.1	0.106	0.0033	None	0	N/A	0.0033
Fiberglass batt	3.3	1.0	28	1.44	0.0165	None	0	N/A	0.0165
Rigid mineral wool	4.0	4.0	17	1.2	0.0455	None	0	N/A	0.0455
Polyisocyanurate	6.0	1.5	72	3.0	0.0284	Pentane (GWP=7)	0.05	0.02	0.0317
Spray polyurethane foam (SPF) – closed-cell (HFC-blown)	6.0	2.0	72	3.0	0.0379	HFC-245fa (GWP=1,030)	0.11	8.68	1.48
SPF – closed-cell (water-blown)	5.0	2.0	72	3.0	0.0455	Water (CO₂) (GWP=1)	0	0	0.0455
SPF – open-cell (water-blown)	3.7	0.5	72	3.0	0.0154	Water (CO₂) (GWP=1)	0	0	0.0154
Expanded polystyrene (EPS)	3.9	1.0	89	2.5	0.0307	Pentane (GWP=7)	0.06	0.02	0.036
Extruded polystyrene (XPS)	5.0	2.0	89	2.5	0.0379	HFC-134a¹ (GWP=1,430)	0.08	8.67	1.77

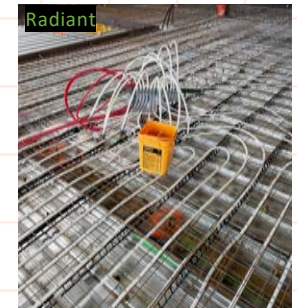
1. XPS manufacturers have not divulged their post-HCFC blowing agent, and MSDS data have not been updated. The blowing agent is assumed here to be HFC-134a.

EUI=29

Petal 03 – Energy (CONT'D)

Imperative 07 – Energy + Carbon Reduction

Imperative 08 – Net Positive Carbon



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dbHMS | SACHIN ANAND



FARR
ASSOCIATES



HMS



Petal 04 – Health + Happiness

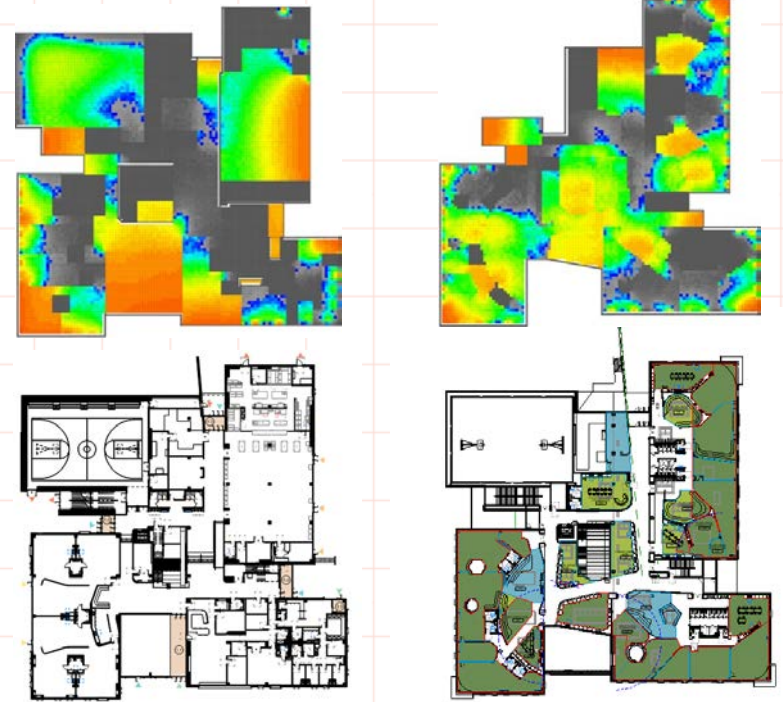
Imperative 09 – Healthy Int. Environment

Imperative 10 – Healthy Int. Performance

Imperative 11 – Access to Nature

Requirements:

- Prohibit smoking within 25' of building openings.
- Develop a plan to reduce air-born particulates and toxins.
- Provide views and daylight to 75% of regularly occupied spaces.



- CONSTRUCTION INDOOR AIR QUALITY PLAN
- OPERATIONS AND MAINTANANCE PLAN

Petal 05 – Materials

Imperative 12 – Responsible Materials

Imperative 13 – Red List

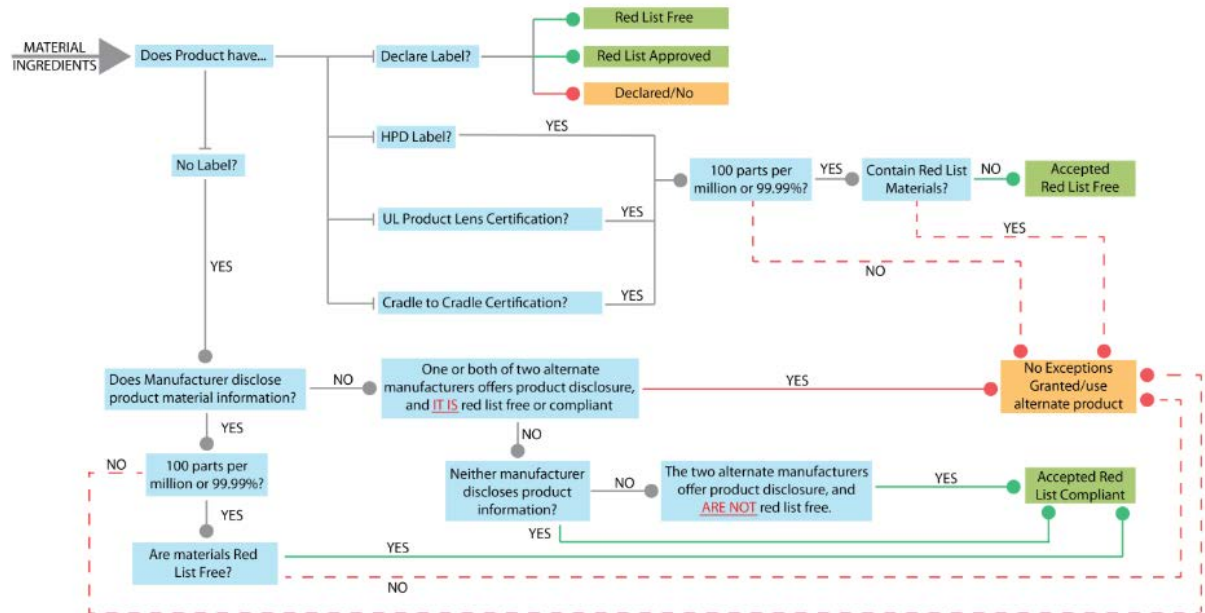
Imperative 14 – Responsible Sourcing

Imperative 15 – Living Economy Sourcing

Imperative 16 – Net Positive Waste

Requirements:

- Avoid red list chemicals in 90% of the project's new materials.
- Low to No VOC/TVOC products



Petal 05 – Materials

Imperative 12 – Responsible Materials

Imperative 13 – Red List

Imperative 14 – Responsible Sourcing

Imperative 15 – Living Economy Sourcing

Imperative 16 – Net Positive Waste

Requirements:

- Advocate for third-party standards (re. sustainability and fair labor) for resource extraction. (FSC)
- Declare Products
- LPC products



Petal 05 – Materials

Imperative 12 – Responsible Materials

Imperative 13 – Red List

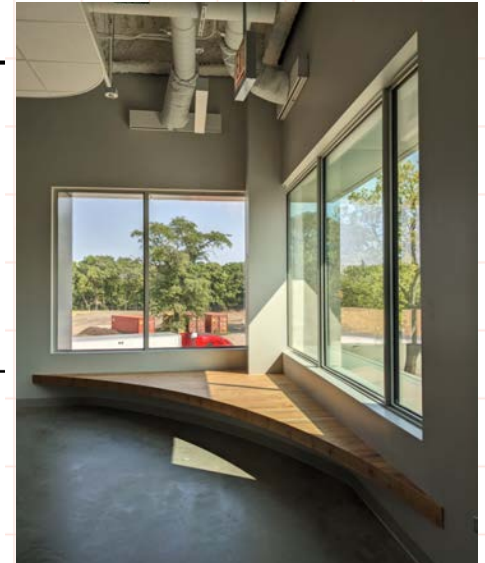
Imperative 14 – Responsible Sourcing

Imperative 15 – Living Economy Sourcing

Imperative 16 – Net Positive Waste

Requirements:

- Divert materials from landfills, especially metal, wood, soil, insulation, and carpeting.
- Include one salvaged material per 500 sq m of building area.
- Create a Materials Conservation Management Plan



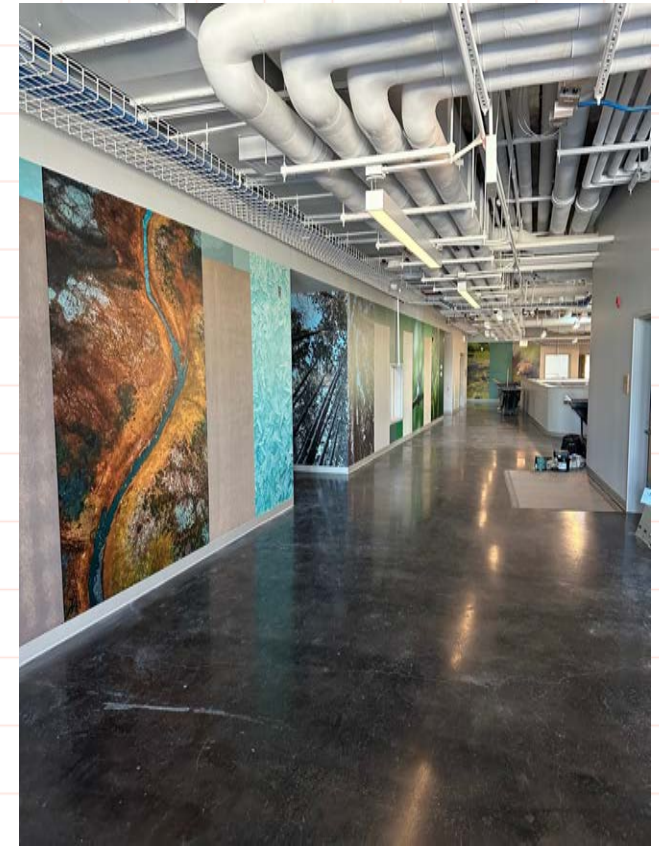
Petal 07 – Beauty

Imperative 19 – Beauty + Biophilia

Imperative 20 – Education + Inspiration

Requirements:

- Provide an annual day that is open to the public.
- Install educational signage about the project
- Develop an educational website about the project



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SMNG A | ANGEL VALTIERRA



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ASSOCIATES

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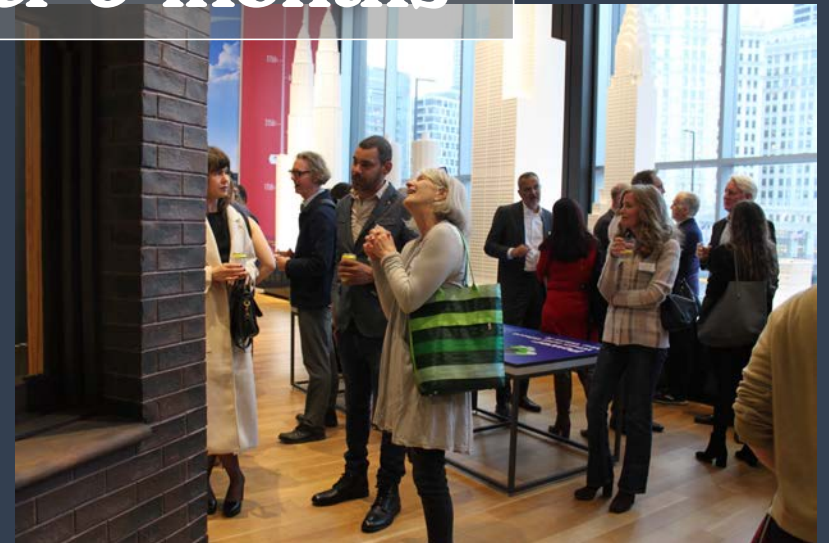
HMS



**If You Can't Solve a Problem
Make it Bigger**



34,000 visitors over 9 months





“Or do you want us
to landfill this?”



Power:
when and where it

Recreating energy tomorrow using
the power that comes and returns to
the earth. It's not just a dream, it's a
reality. We have some exciting
and promising options.

What's New in 2011
For world's best, using all
the power we need.

CLIMATE ACTION MUSEUM
Chicago, IL
2023

Climate Action Museum

Chicago
Climate
Museum

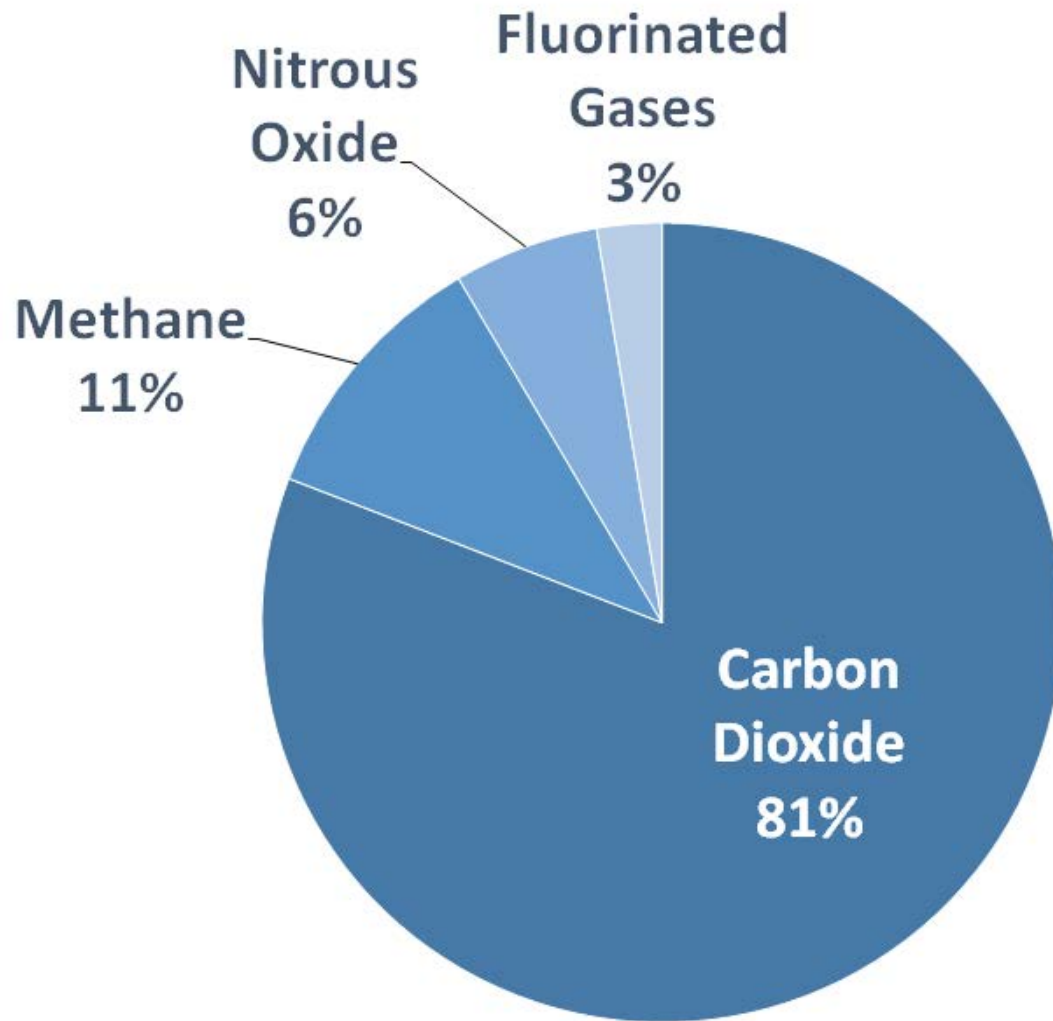




Burning coal
Carbon Dioxide



Livestock



Deforestation)



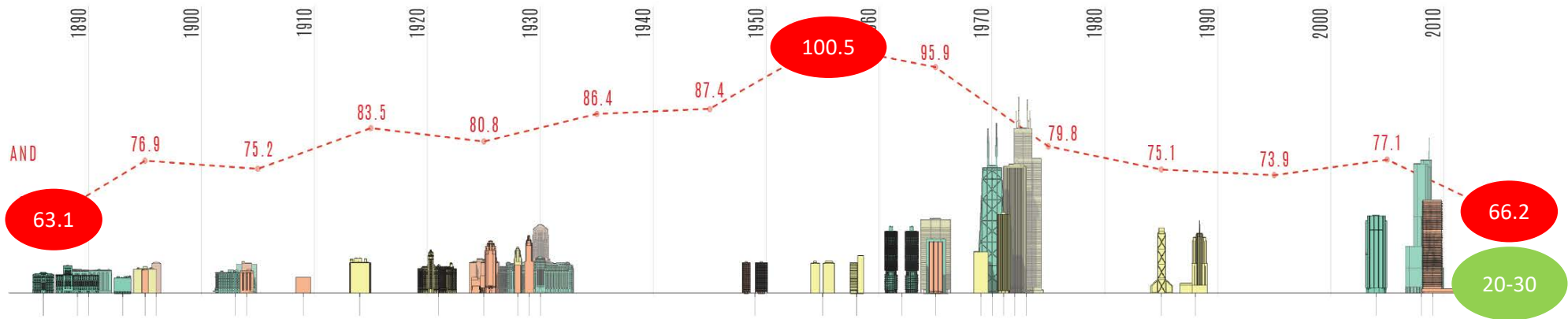
Fluorinated gases.

Land Use and Transportation are Big Drivers of CO2



Chicago Architecture Through a Climate Lens

Energy Benchmarking Ordinance: Average EUI by decade, 2019 data



Chicago's most energy-efficient buildings were built in the 1880's.

Chicago's least energy-efficient buildings were built in the 1950's.

Buildings from the 2010's were less efficient than those from the 1880's.

Best-In-Class buildings use 1/3 to 1/2 the energy of an average new building



ACADEMY FOR GLOBAL CITIZENSHIP

EUI = 20/26*

Wall R = 28

860/880 LAKESHORE DRIVE

EUI = 125

Wall R = 1.0

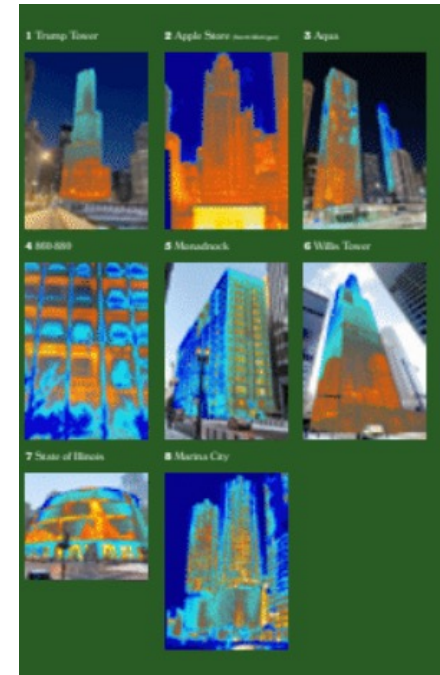
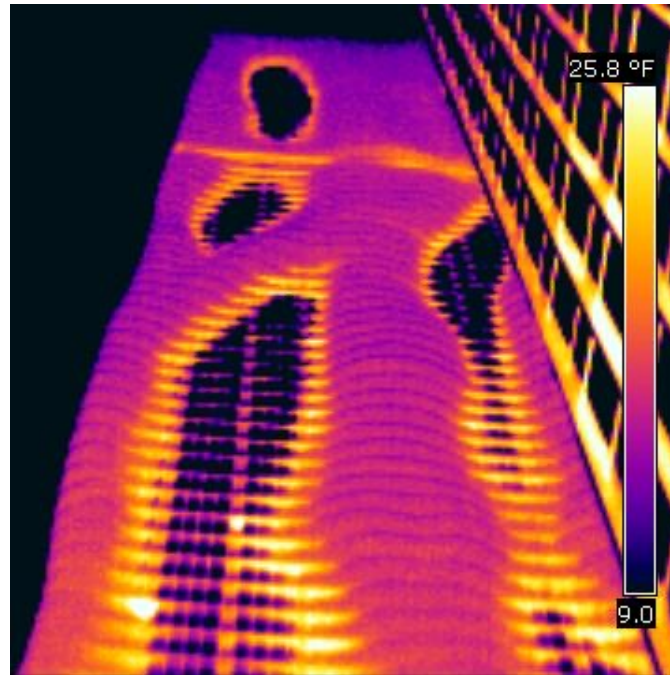
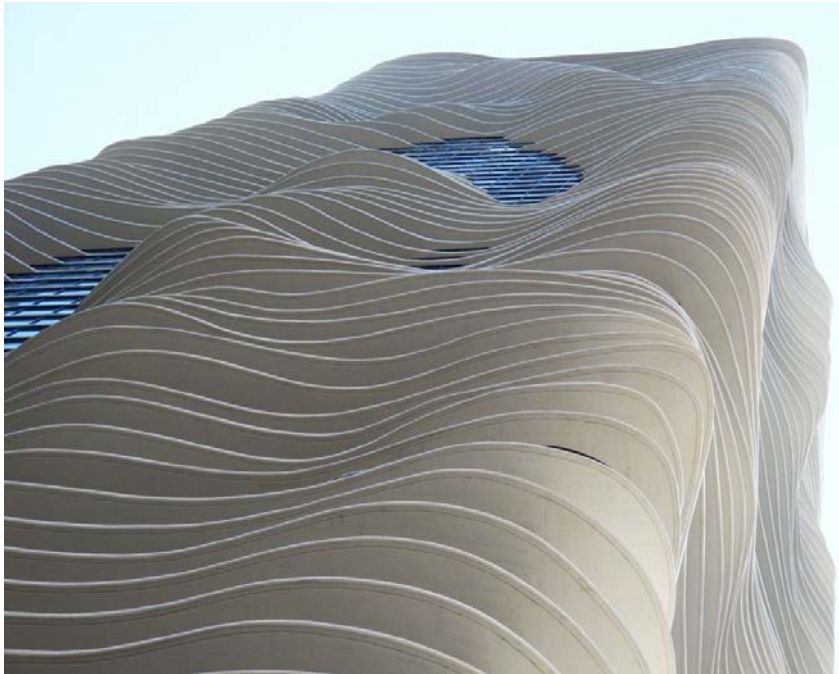
MONADNOCK BUILDING

EUI = 39

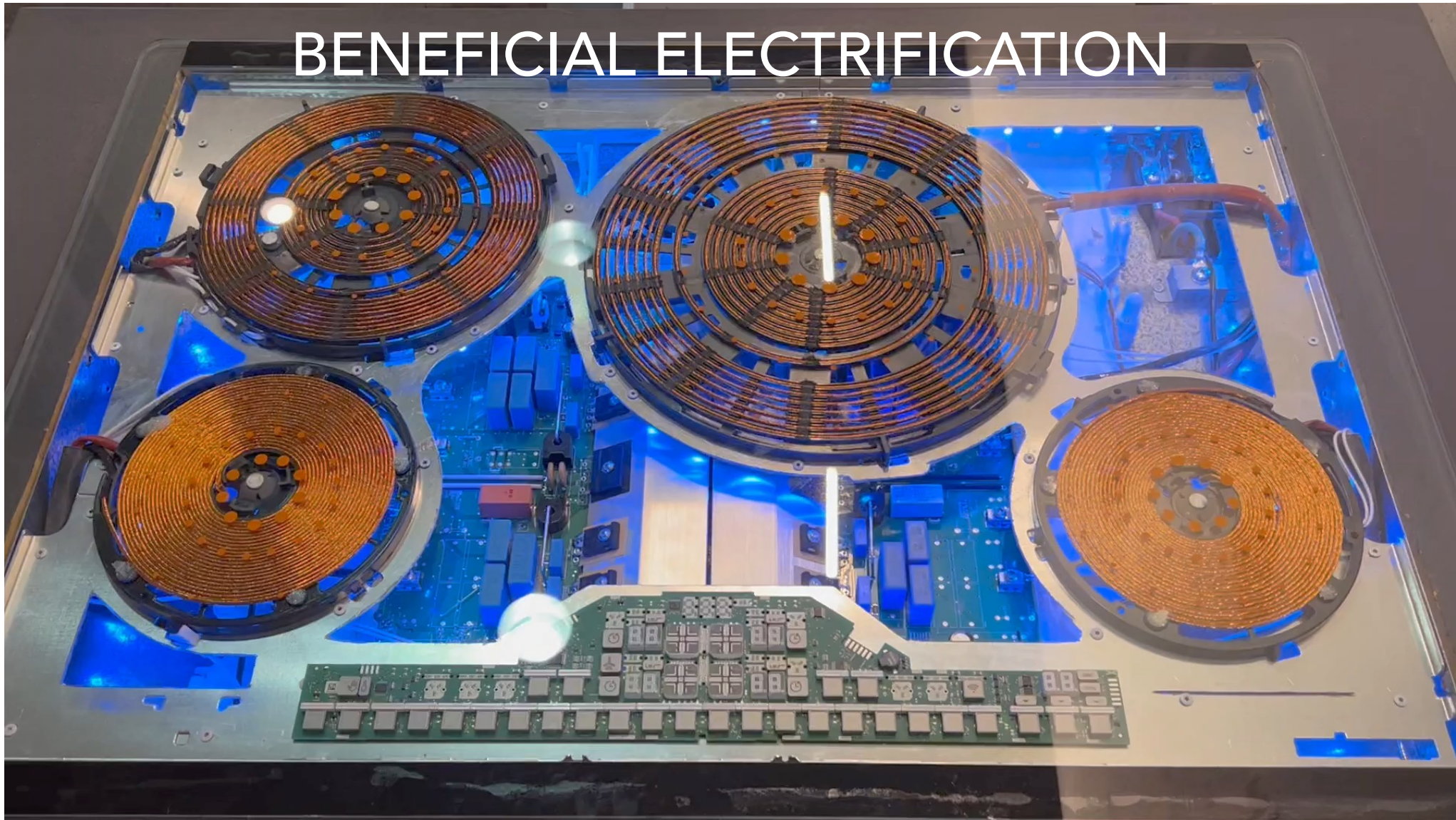
Wall R = 4.5



Infrared Photos of Iconic Buildings Taken on 0°F Mornings



BENEFICIAL ELECTRIFICATION



GENERATING CLIMATE OPTIMISM



Weekly report

7/15/24 - 7/21/24

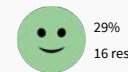
Management report

Climate Action Museum (2 units)

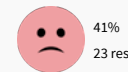
How do you feel right now about where humanity stands in the climate crisis?



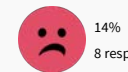
16%
9 resp.



29%
16 resp.



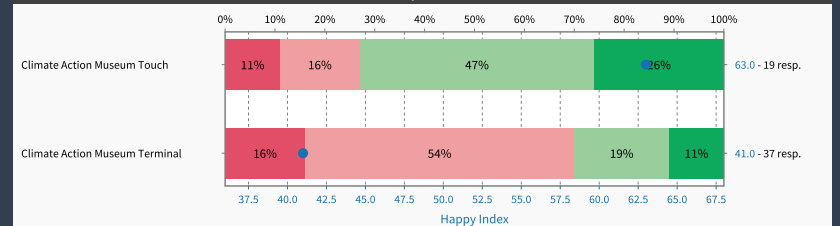
41%
23 resp.



14%
8 resp.

Happy Index: 49/100
Responses: 56

Comparison





PLEDGE CENTRAL



Pledge Climate Action to Your Neighbor

Thank You!

Climate Action

"We're the first generation to feel the impact
of climate change and the last generation
that can do something about it."
Jay Inslee, Governor of Washington
...to Our Generation.
Us. You and me.

