

Climate Positive Design

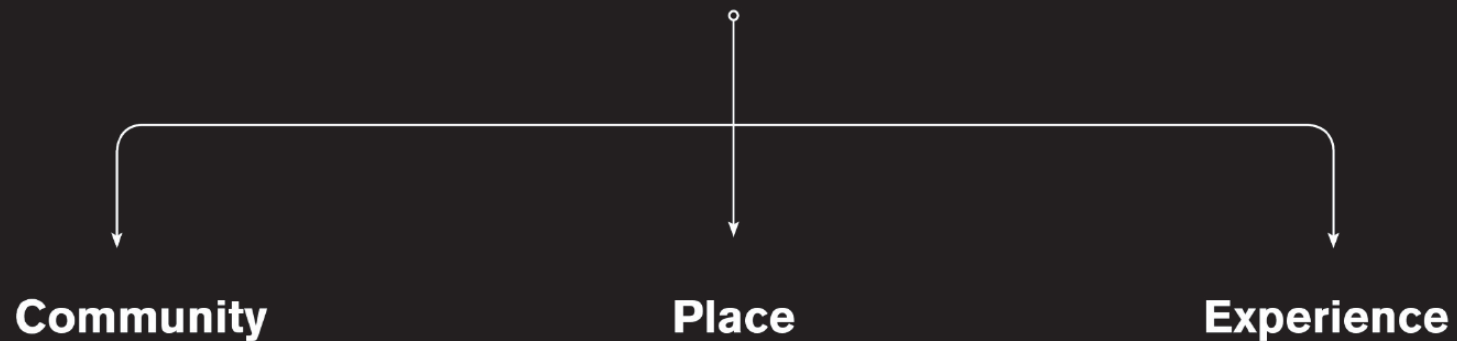
Presented by: Kate Lenahan



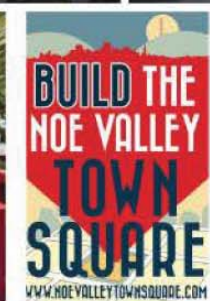
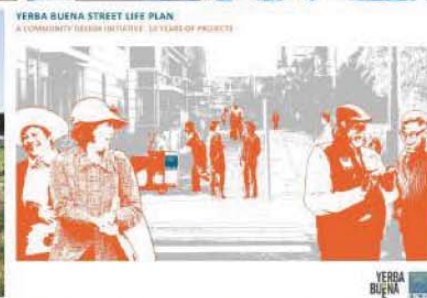
climate **positive** design

Kate Lenahan
Landscape Designer | CMG Landscape Architecture

**CMG is a mission-oriented studio working to
increase social and ecological wellbeing
through artful design.**





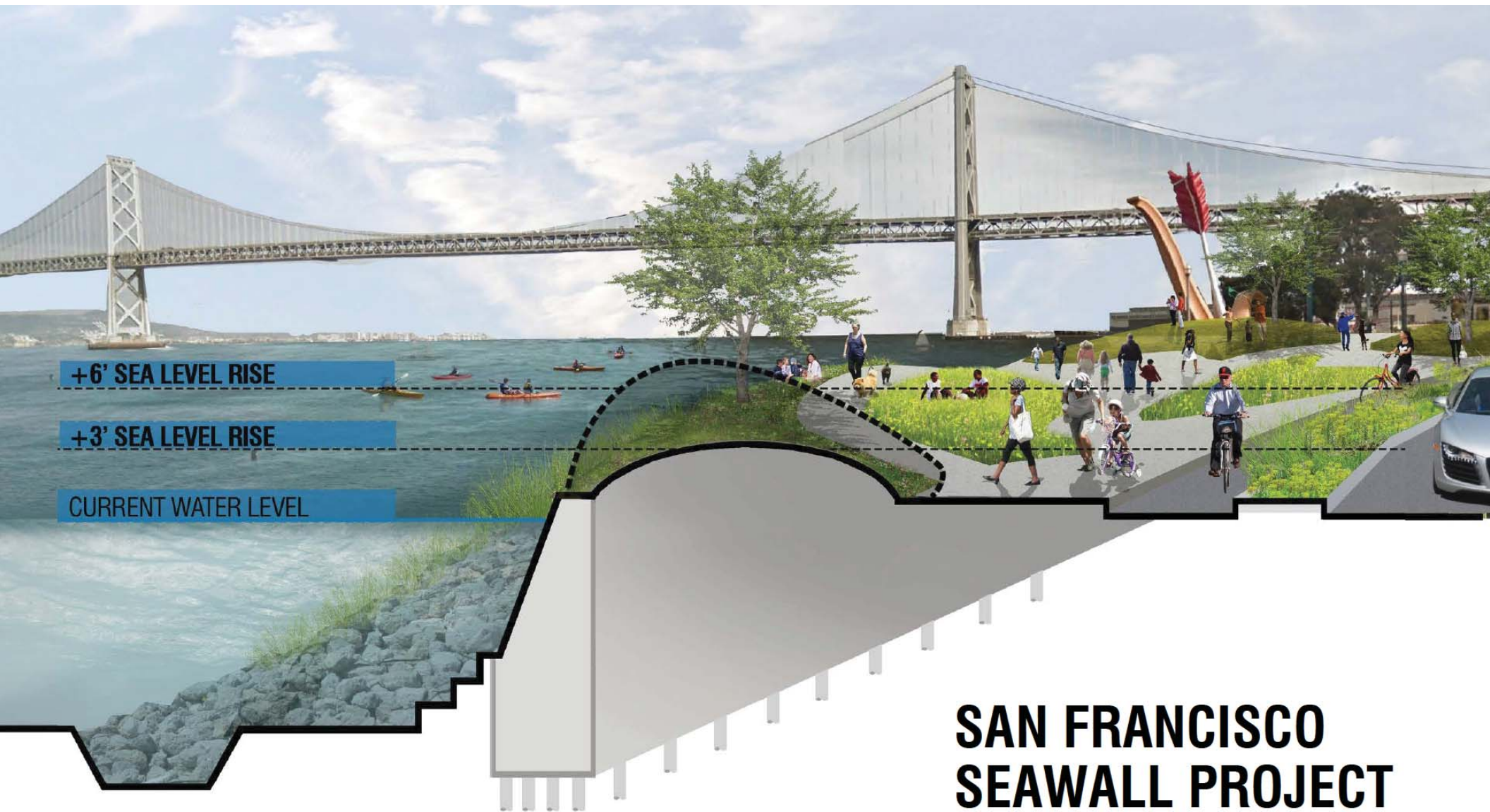


The grin tells the story – playground a success



SEA LEVEL RISE

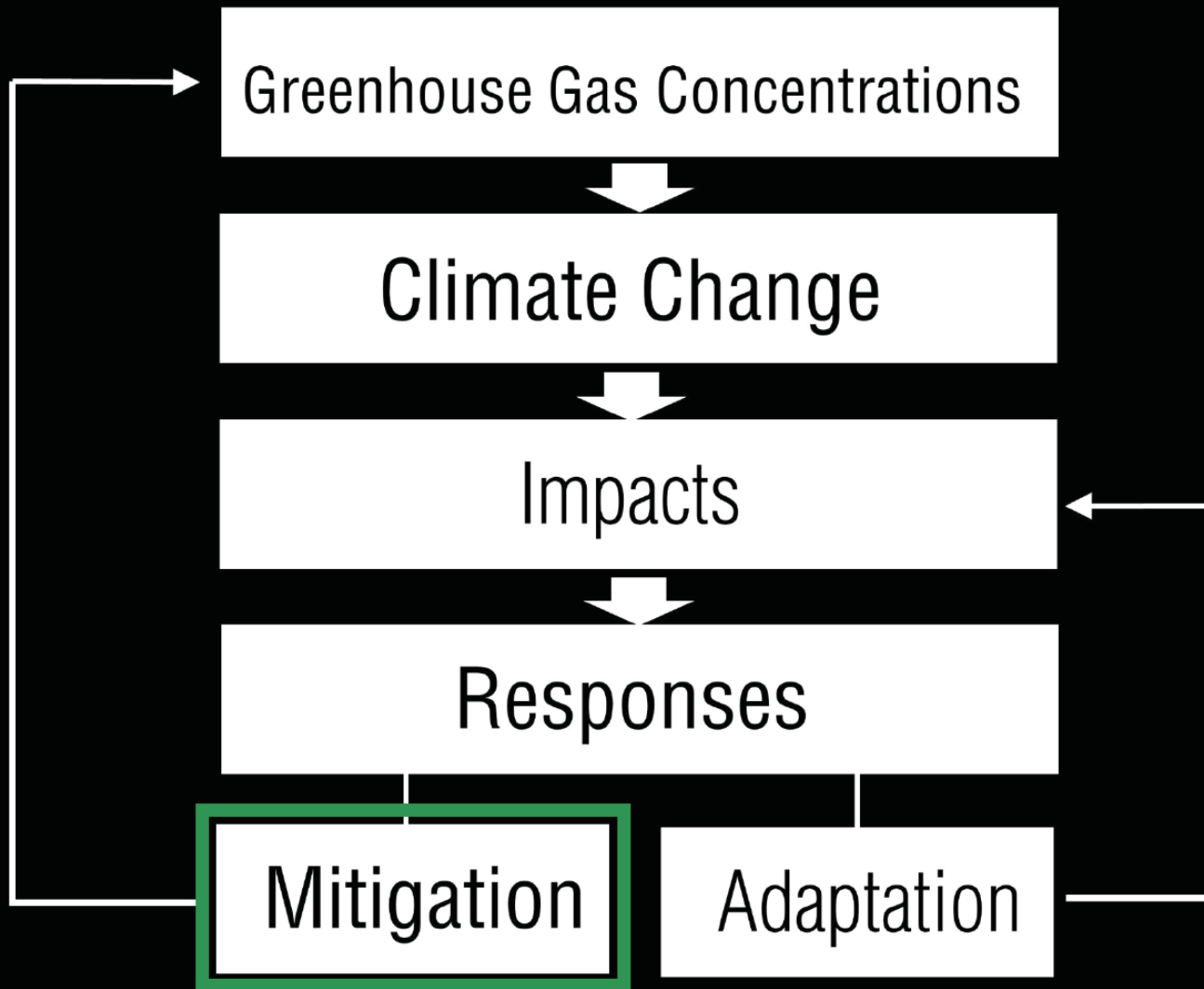




SAN FRANCISCO SEAWALL PROJECT

15°



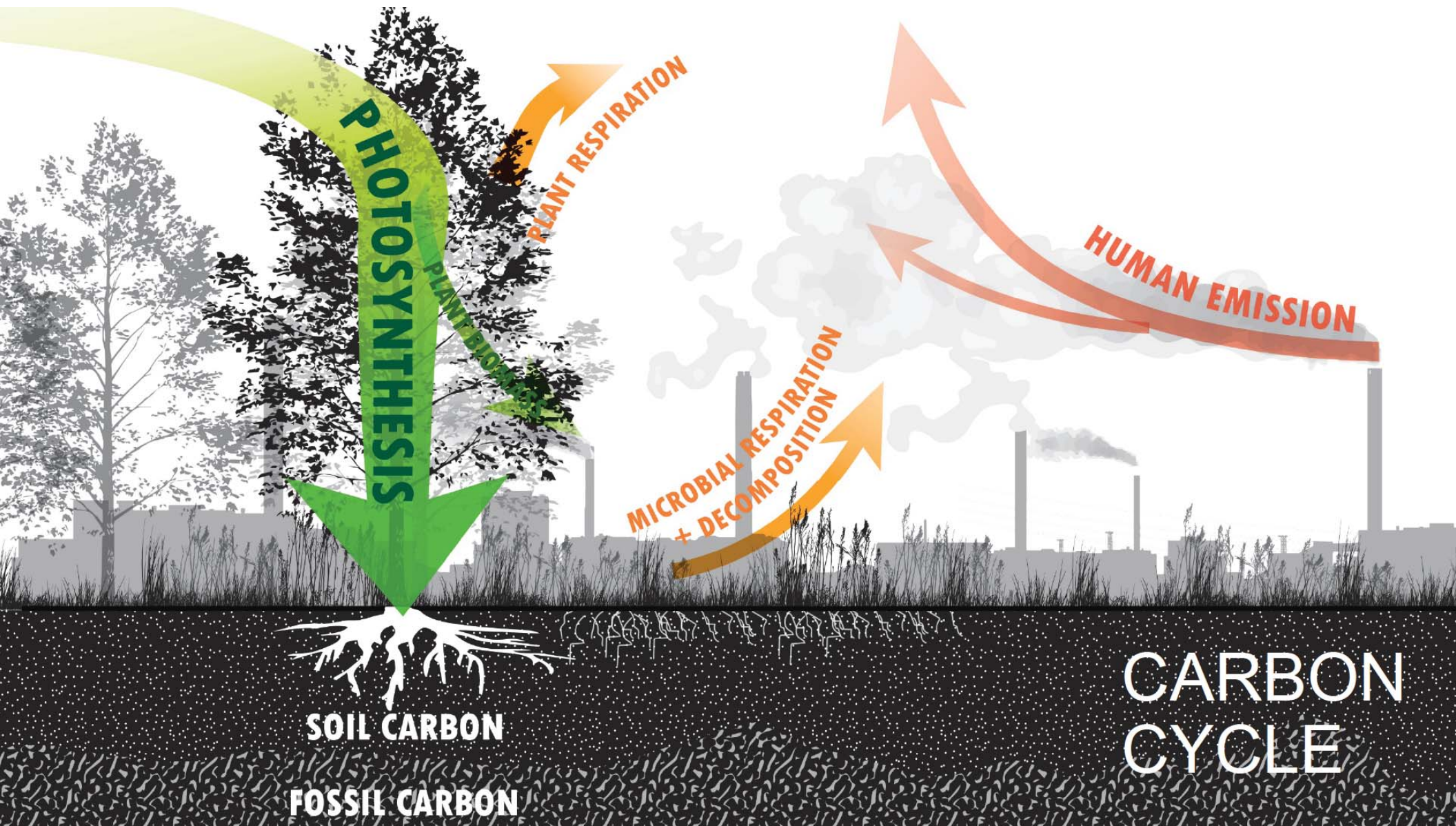


75% OF THE WORLD'S GHG EMISSIONS COME FROM CITIES

According to Architecture 2030, **the urban built environment accounts for 75% of annual global greenhouse gas emissions**

39% of these CO₂ emissions come from buildings

Project Drawdown argues that landscape-based solutions could sequester 149.6 gigatons of reduced CO₂ by 2050





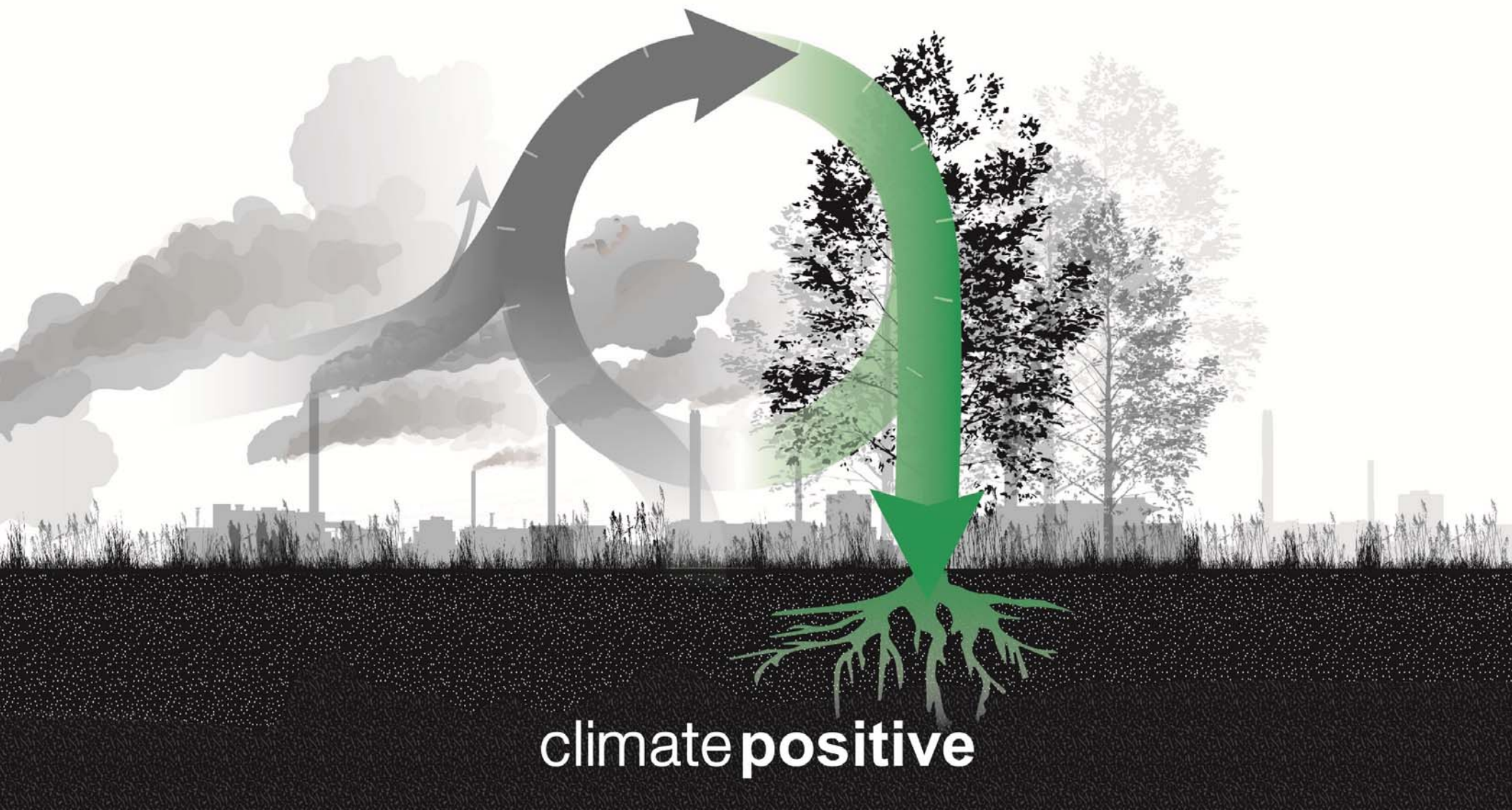
path
finder



REDUCE FOOTPRINTS



INCREASE
SEQUESTRATION



Materials - Plants + Maintenance =
Landscape Carbon Footprint

15

438 mT CO₂ emitted

1604 mT CO₂ sequestered



SOURCES

■ Transport ■ Construction ■ Site work ■ Materials



atelier ten, CMG 2018

Sources – Sinks + Costs =
Landscape Carbon Footprint

5% + 15% = 20% TOTAL CONTINGENCY

ENVIRONMENTAL PRODUCT DECLARATION (EPD)

ENVIRONMENTAL PRODUCT DECLARATION Mix 604

This Environmental Product Declaration (EPD) reports the impacts for 1 m³ of ready mixed concrete mix, meeting the following specifications:

- ASTM C94: Ready-Mixed Concrete
- UNSPSC Code 30111505: Ready Mix Concrete
- CSI Section 03 30 00: Cast-in-Place Concrete

COMPANY

PLANT

EPD PROGRAM OPERATOR

EarthSure
P O Box 2449
Vashon, WA 98070



DATE OF ISSUE

02/26/2019 (valid for 5 years until 02/26/2024)

ENVIRONMENTAL IMPACTS

Declared Product:

Mix 604 •
6.0SK 3/4 RECYCLED AD
Compressive strength: 4000 psi at 28 days

Declared Unit: 1 m³ of concrete

Global Warming Potential (kg CO ₂ -eq)	355
Ozone Depletion Potential (kg CFC-11-eq)	9.6E-6
Acidification Potential (kg SO ₂ -eq)	1.24
Eutrophication Potential (kg N-eq)	0.44
Photochemical Smog Creation Potential (kg O ₃ -eq)	26.3
Total Primary Energy Consumption (MJ)	2,436
Nonrenewable (MJ)	2,327
Renewable (MJ)	109
Total Concrete Water Consumption (m ³)	1.80
Batching Water (m ³)	0.08
Washing Water (m ³)	0.02
Nonrenewable Material Resource Consumption (kg)	1,855
Renewable Material Resource Consumption (kg)	2.44
Hazardous Waste Production (kg)	0.02
Nonhazardous Waste Production (kg)	3.28

Product Components: crushed aggregate (ASTM C33), natural aggregate (ASTM C33), Portland cement (ASTM C150), fly ash (ASTM C618), batch water (ASTM C1602), admixture (ASTM C494)

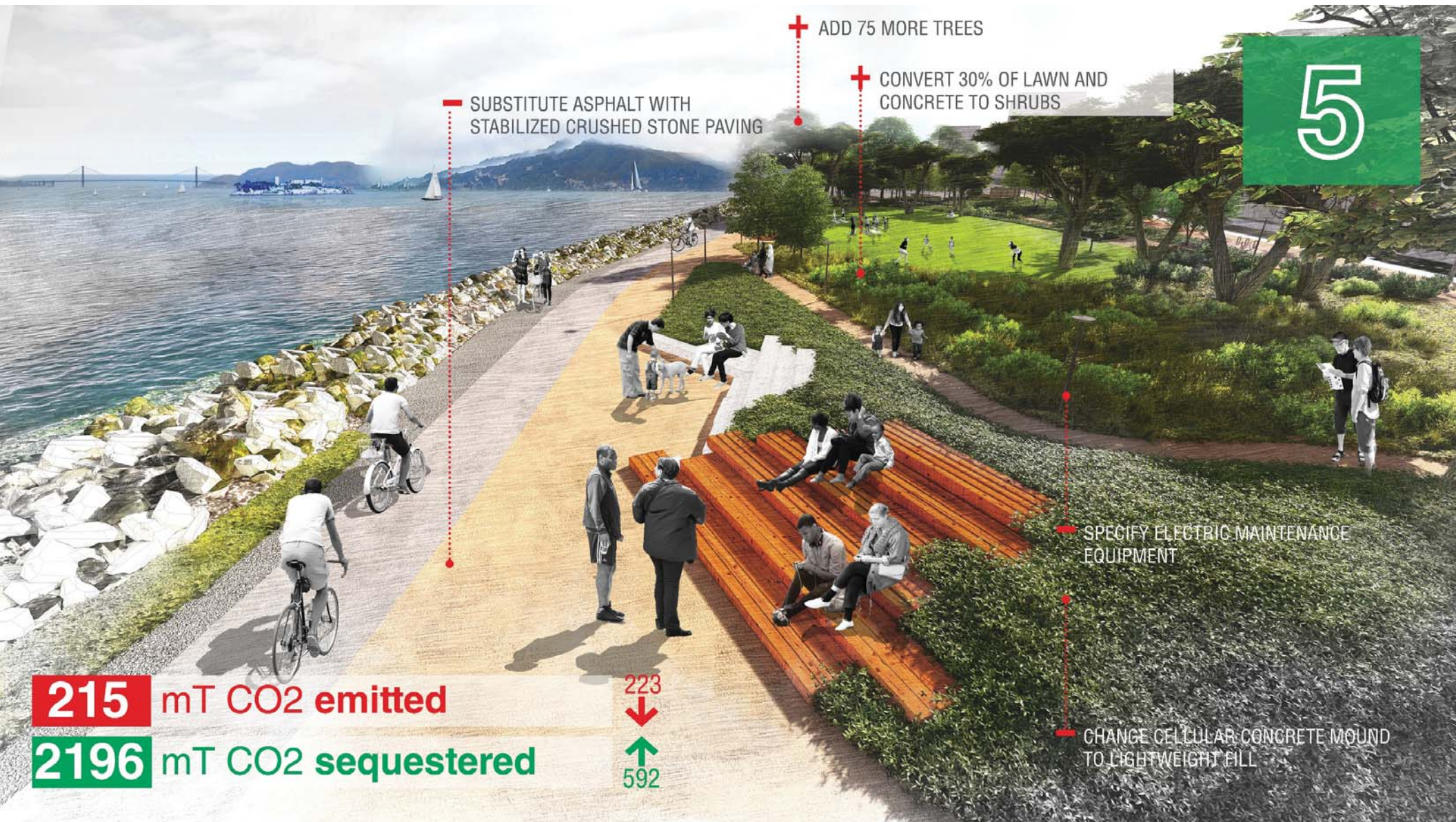
The Carbon Leadership Forum PCR: Product Category Rules (PCR) for ISO 14025 Type III Environmental Product Declarations (EPDs) for Concrete, Version 1.1 dated 12/4/2013, serves as the PCR for this EPD. <http://www.carbonleadershipforum.org>

PCR review was conducted by: Nicholas Santero • thinkstep (formerly PE International).

Independent verification of the declaration, according to ISO 14025:2006: ☐ internal ☒ external

Third party verifier: Rita Schenck (rita@iere.org) • Institute for Environmental Research and Education

LCA and EPD developer: Laurel McEwen (laurel.mcewen@climateearth.com) • Climate Earth



- SUBSTITUTE ASPHALT WITH
STABILIZED CRUSHED STONE PAVING

+ ADD 75 MORE TREES

+ CONVERT 30% OF LAWN AND
CONCRETE TO SHRUBS

5

- SPECIFY ELECTRIC MAINTENANCE
EQUIPMENT

- CHANGE CELLULAR CONCRETE MOUND
TO LIGHTWEIGHT FILL

215 mT CO2 emitted

2196 mT CO2 sequestered

223



592



194

159 mT CO₂ emitted

45 mT CO₂ sequestered

20

+ CONVERT 20% OF CONCRETE TO SHRUBS

- CONVERT 10% OF CONCRETE TO STABILIZED DECOMPOSED GRANITE

- CHANGE CONCRETE SITE WALLS TO WOOD

+ ADD 14 TREES

- CHANGE 2,000 SF STONE TO STABILIZED CRUSHED STONE

- ADD CEMENT SUBSTITUTIONS TO SITE CONCRETE

53

mT CO₂ emitted

152

mT CO₂ sequestered

106



107



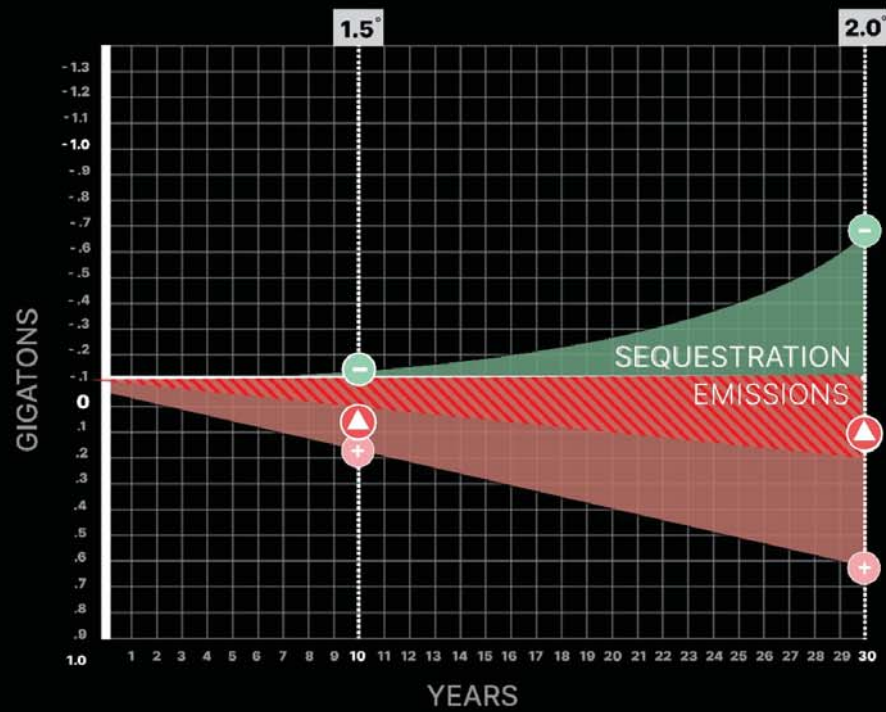
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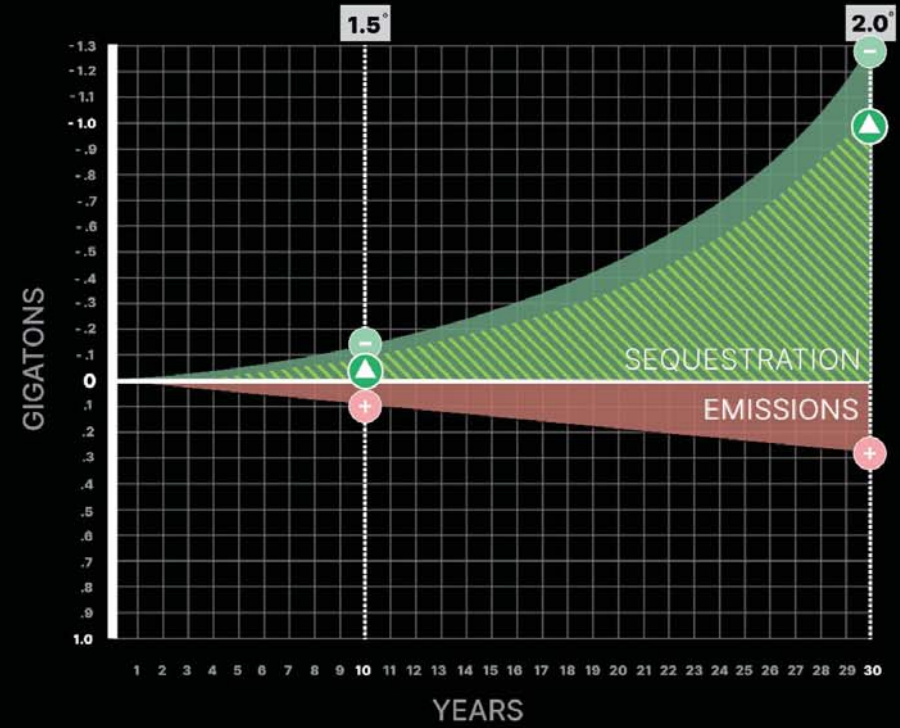
top 5 things **WE** can do



business as usual



climate positive design

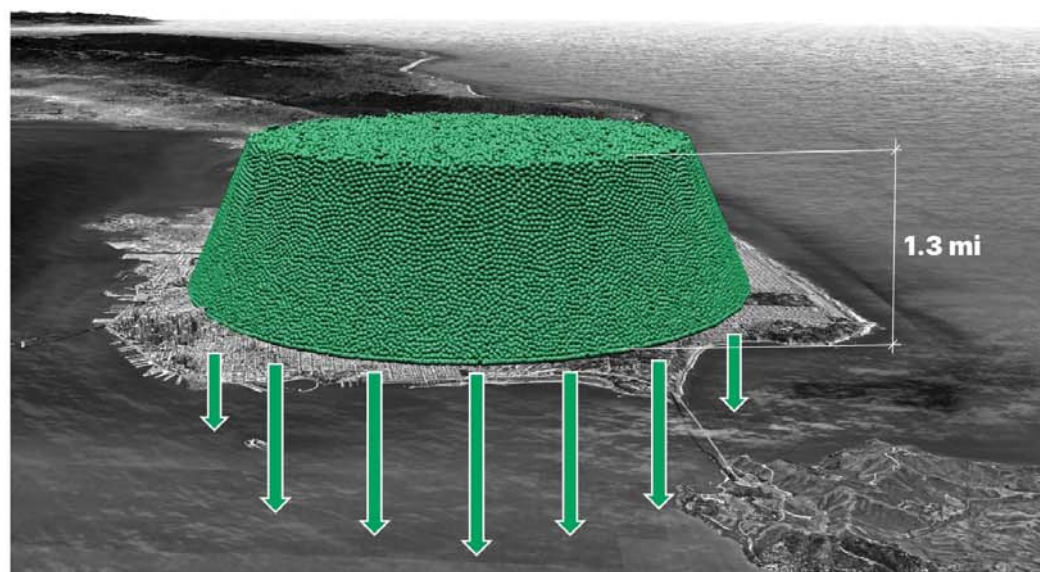
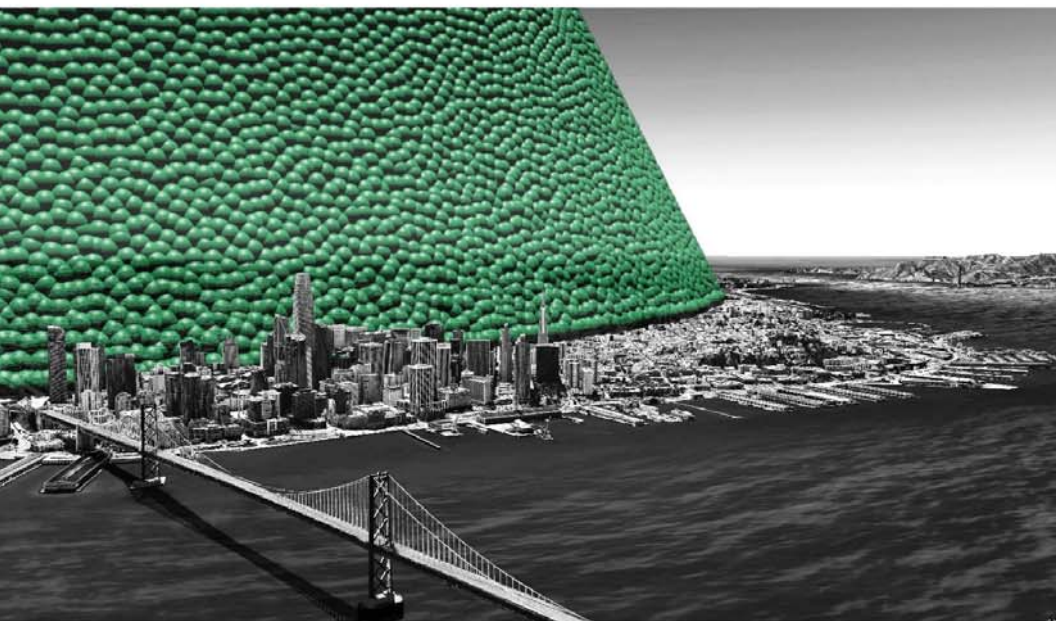




Goal of our projects sequestering more CO₂ than they emit **by 2030**

If we meet the **Climate Positive Design** goals through **2050**, our projects could **sequester 1 gigaton** of CO₂ beyond their emissions.

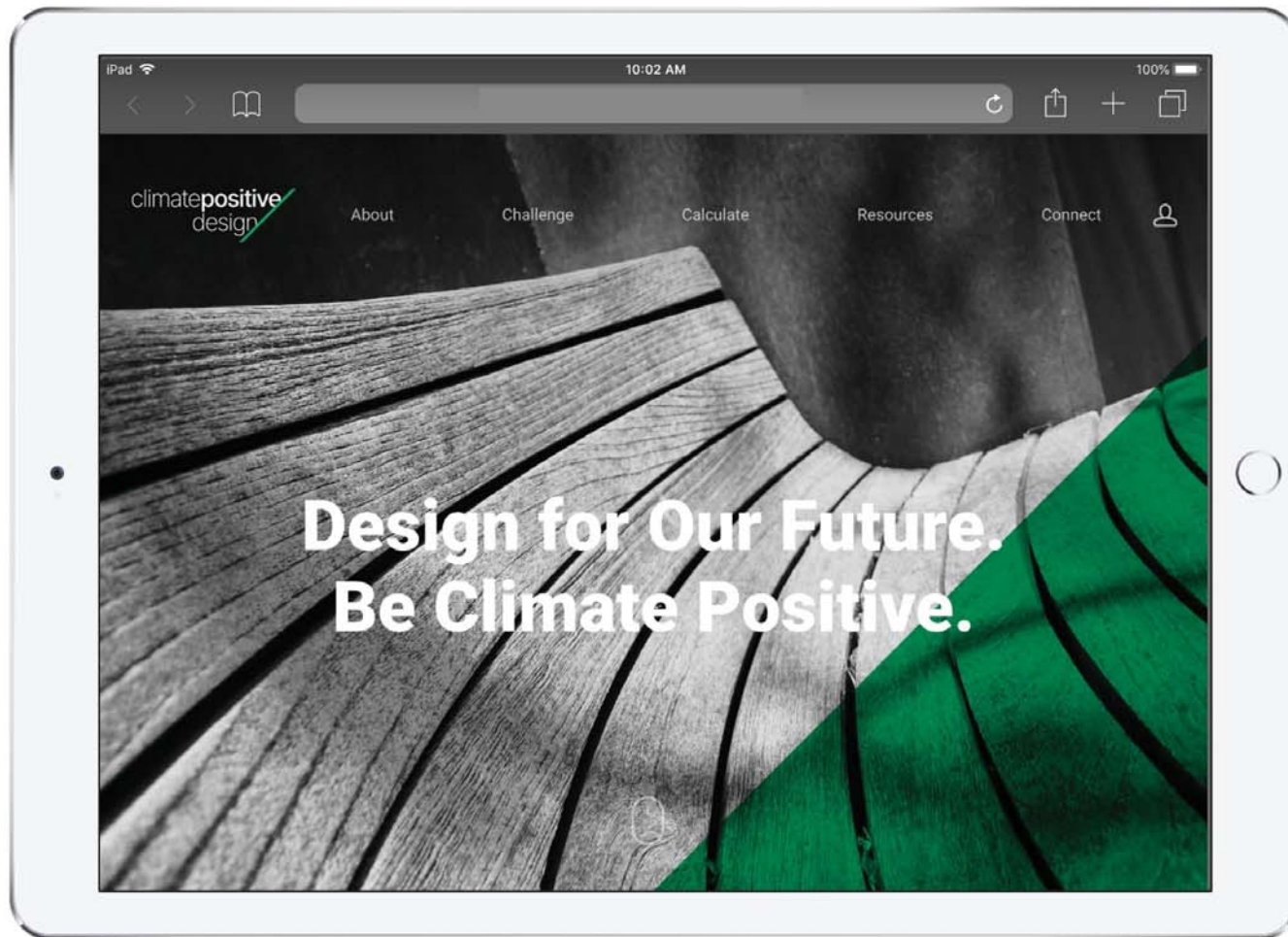
If we meet the **Climate Positive Design** goals through **2050**,



our projects could **sequester**
1 gigaton of CO₂
beyond their emissions.

HOW YOU CAN CONTRIBUTE

- Incorporate CPD into your work
- Log your projects
- Provide feedback through the 'Suggestion Box' on the Connect Page
- Donate (Go Fund Me page on 'Connect' website tab)
- Provide research data
- Ask product manufacturers for EPDs
- Help get the message out



climate**positive**
design



LEADERSHIP



EMPOWERMENT



COLLABORATION



EDUCATION

top 5 things **WE** can do



DISCUSSION. BASED ON YOUR EXPERIENCE

...

Pocket Park Project Summary:

3000 sq ft total

50% hardscape /
50% softscape

500 sq ft artificial turf

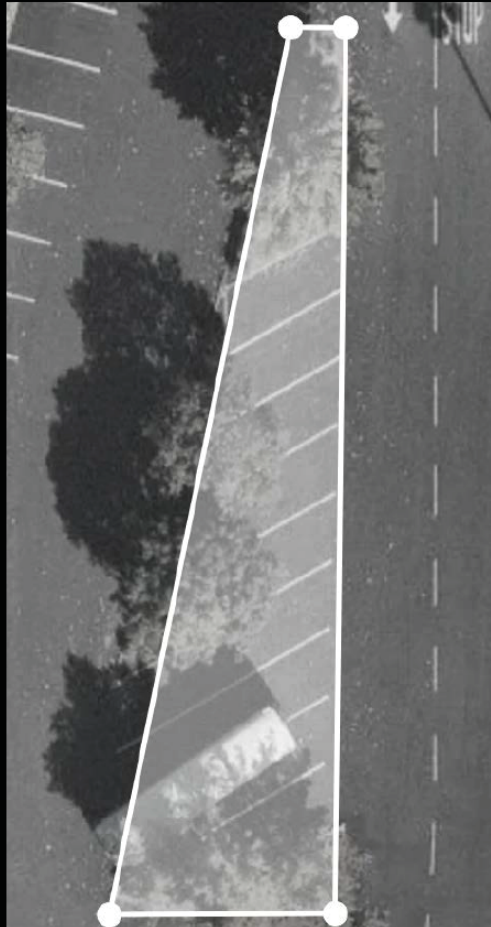
1000 sq ft concrete
pedestrian paving

3 small deciduous trees

3 small evergreen trees

800 sq ft shrubs

74 years to positive



1a. What changes would you make to the proposed landscape to improve its carbon impacts?

1b. Are there any opportunities to reduce our carbon footprint that we haven't addressed today?

2a. What are the obstacles to implementing these changes?

2b. How could we overcome these obstacles?







We envision green forested cities,
where abundant large trees are desired by all
and celebrated as sign of climate positive pride.

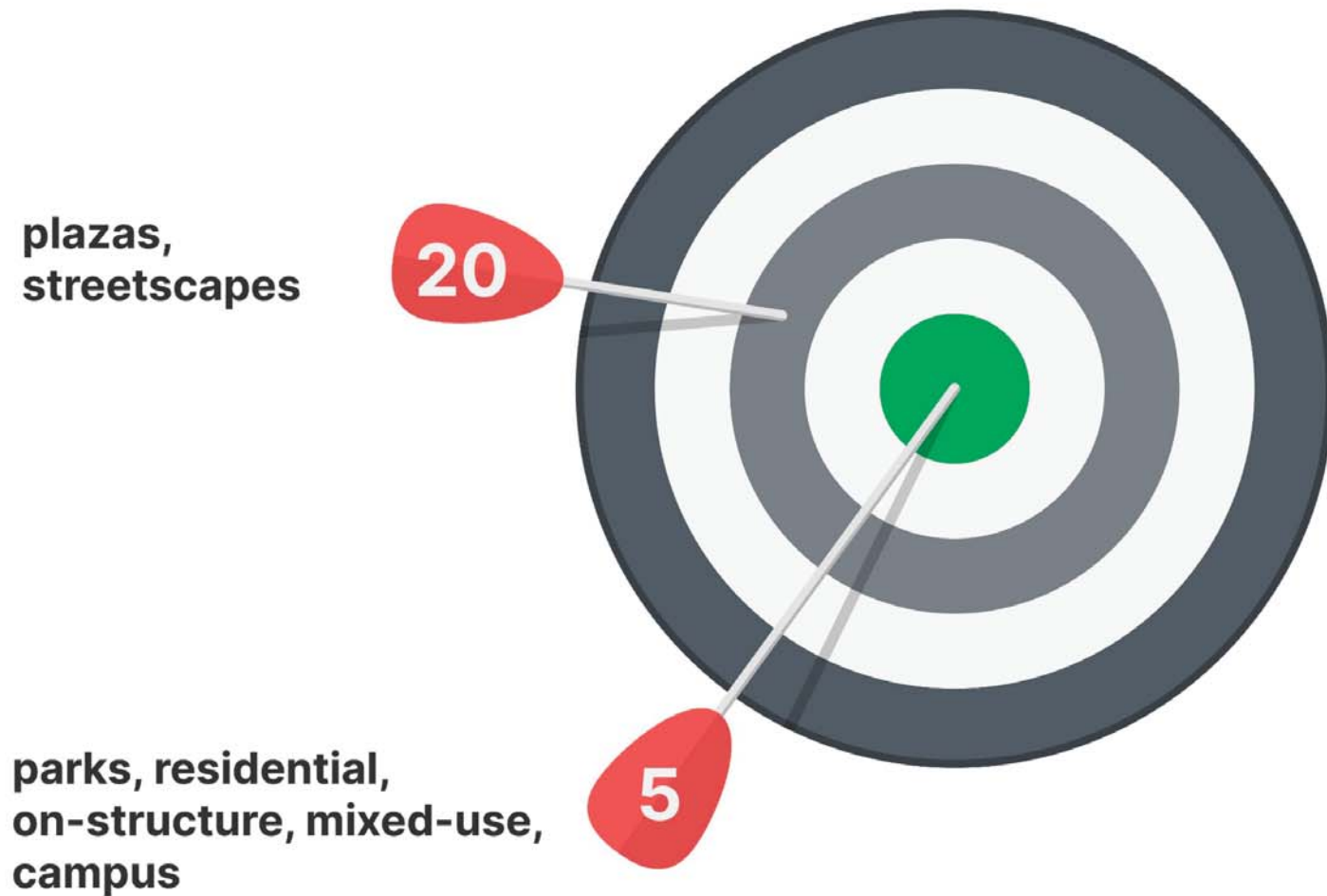
CMG 2019



climate**positive**
design

www.ClimatePositiveDesign.com

Suggested Targets – Years to **Positive**



CMG



LANDSCAPE
ARCHITECTURE
FOUNDATION



American Society of
Landscape Architects

atelier ten

**LACF
FAPC**



IFLA

INTERNATIONAL FEDERATION
OF LANDSCAPE ARCHITECTS



CSLA AAPC

CLIMATE POSITIVE DESIGN TOOLKIT

		USE AS SUBSTITUTE FOR	DESCRIPTION / USE	CO2 BENEFITS & CO-BENEFITS
PATHWAYS				
WOOD BOARDWALK/DECKING		CONCRETE, STONE, CONCRETE UNIT PAVERS	MINIMIZE AMOUNT OF CONCRETE AND STONE. SUPPORT/REINFORCE, OR NOT. SPECIFY TROPICAL HARDWOODS TO PROTECT OUR CARBON-RICH HARDWOODS. SPECIFY LOCAL SOURCE IF POSSIBLE.	CO2 IS STORED IN WOOD AND REMAINS THERE AS LONG AS ITS INTENSITY IS MAINTAINED.
DECOMPOSED GRANITE		CONCRETE, STONE, CONCRETE UNIT PAVERS	SPECIFY ECO-FRIENDLY OR ORGANIC BINDER.	LOWER EMBEDDED CARBON THAN OTHER PAVING MATERIALS. PERMEABILITY OF WATER THROUGH THE SURFACE IF NO BINDER IS USED.
ASPHALT		CONCRETE, STONE, CONCRETE UNIT PAVERS	SPECIFY LOCAL OR RECYCLED AGGREGATE.	LOWER EMBEDDED CARBON FROM OTHER PAVING MATERIALS.
CHIP SEAL		CONCRETE, STONE, CONCRETE UNIT PAVERS	SPECIFY LOCAL OR RECYCLED AGGREGATE FOR BASE AND TOP COAT.	LOWER EMBEDDED CARBON THAN OTHER PAVING MATERIALS.
CO2 SEQUESTERING CONCRETE		CONCRETE (TYPE III PORTLAND CEMENT), CONCRETE UNIT PAVERS		CO2 IS CAPTURED FROM FACTORIES AND REMAINS IN THE CONCRETE.
CONCRETE WITH CEMENT SUBSTITUTIONS		CONCRETE (TYPE III PORTLAND CEMENT), CONCRETE UNIT PAVERS	SPECIFY MAXIMUM ALLOWABLE PENETRATION OF COMBUSTIBLE SUBSTITUTIONS SUCH AS SLAG, GYPSUM, GLASS, PEZZOLAN, OR OTHER FILL.	LOWER EMBEDDED CARBON FROM TRADITIONAL CONCRETE WITH PORTLAND CEMENT.
RECYCLED-CONTENT UNIT PAVERS		CONCRETE UNIT PAVERS	SPECIFY HIGH % RECYCLED CONTENT.	REDUCE HARVESTING OF VIRGIN MATERIALS.
ENGINEERED WOOD FIBER (EWFF)		ROOFING SURFACING	FLAT AREAS	WATER INFILTRATION. LIGHTER EMBEDDED CARBON THAN WOOD CHIPS. PROVIDES END-OF-LIFE BENEFIT FOR WOOD RE-USE.
WIRELOD WIRE FARMING (WWF) OR TEXTILE-REINFORCED CONCRETE (TRC)		REBAR	SPECIFY LARGE WIRE SPACING AND LIGHT WARE IF POSSIBLE. SPECIFY GLASS REINFORCED FIBER.	LOWER EMBEDDED CARBON.
NATURAL DRAINAGE SWALES AND RIPORETENTION AREAS		HERB PIPE, EAST, LIDEN	NATURAL DRAINAGE STRATEGIES THAT MINIMIZE THE USE OF PAVING.	PERMEABILITY OF WATER THROUGH THE SURFACE. HABITAT CREATION IN DRAINAGE WAYS.
LIGHTWEIGHT FILL		FOAM, CELLULAR CONCRETE	USE ON KNEE BOOTS.	LOWER EMBEDDED CARBON THAN FOAM OR CELLULAR CONCRETE.
RECYCLED MATERIALS FROM THE SITE - CONCRETE		CONCRETE, ASPHALT	SEATING AREAS, PATHWAYS, TRAILS	PREVENTS CO2 EMISSION FROM OFF-ROADING. MINIMAL EMBEDDED CARBON FOR IN-USE.
RECYCLED MATERIALS FROM THE SITE - ASPHALT		CONCRETE, STONE, ASPHALT	CAN BE BLENDED INTO AGGREGATE BASE.	PREVENTS CO2 EMISSION FROM OFF-ROADING.
RECYCLED MATERIALS FROM THE SITE - STONE		CONCRETE, ASPHALT	CAN BE BLENDED INTO AGGREGATE OR KEPT IN LARGER PIECES FOR PATHWAYS.	MINIMAL EMBEDDED CARBON DUE TO RE-USE.
AGGREGATES		CONCRETE, STONE, ASPHALT	SEATING AREAS, PATHWAYS, TRAILS.	LOWER EMBEDDED CARBON THAN OTHER PAVING MATERIALS.
WALLS/FENCES/FURNISHINGS				
WOOD		ALUMINUM, STEEL, CONCRETE	MINIMIZE AMOUNT OF CONCRETE. FENCING. DO NOT SPECIFY TROPICAL HARDWOODS TO PROTECT OUR CARBON-RICH HARDWOODS. SPECIFY LOCAL SOURCE IF POSSIBLE.	CO2 IS STORED IN WOOD AND REMAINS THERE AS LONG AS ITS INTENSITY IS MAINTAINED.
RAMMED EARTH		ALUMINUM, STEEL, CONCRETE	MINIMIZE AMOUNT OF CONCRETE. FENCING.	
RECYCLED MATERIALS FROM THE SITE - WOODENERS		ALUMINUM, STEEL, CONCRETE	PREVENTS CO2 EMISSION FROM OFF-ROADING.	PREVENTS EMBEDDED CARBON OF IMPROVED MATERIALS.

PAGE 1 OF 3

		USE AS SUBSTITUTE FOR	DESCRIPTION / USE	CO2 BENEFITS & CO-BENEFITS
PLANTING STRATEGIES				
AFORRESTATION		REMOVING TREES/ROOFRESTORATION		SEQUESTRATES TREES HAVE A SIGNIFICANT NUMBER SEQUESTRATION THAN FORESTED TREES. SPECIFY TALL TREES 30+ FEET.
CONSTRUCTED WETLANDS			ONLY CONSTRUCT WHERE NATURAL WATER SOURCE EXISTS.	HABITAT, WATER INFILTRATION, BIOPHILIA.
TINY FORESTS		WIDE TREE AND PLANT SPACING	USE TREE PLANT SPACING THAT EXISTS IN NATURAL FORESTS RATHER THAN TYPICAL PLANT SPACING AGGREGATES.	HABITAT, WATER INFILTRATION, BIOPHILIA.
NATIVE + ADAPTIVE PLANTING/LONG-LIVED TREES, SHRUBS, PLANTS		LAWN, LARGE AREAS OF PAVED OPEN SPACE, HIGH MAINTENANCE LANDSCAPES THAT REQUIRE EQUIPMENT + LAWN, HERDS	SELECT SPECIES THAT HAVE LONGER GROWING SEASONS IN YOUR REGION.	HABITAT, IRRIGATION REDUCTION, WATER INFILTRATION, BIOPHILIA.
MULTI-LAYERED PLANTING STRATEGIES		SINGLE-LAYER PLANTING	LOWER, UNDER, MID, AND UPPER STORY TREES AND PLANTS	HABITAT, IRRIGATION REDUCTION, WATER INFILTRATION, BIOPHILIA, POSSIBLY FOOD SOURCES.
GREEN ROOFS		TRADITIONAL ROOFS, DARK COLORED ROOFS	COOLING THE FLOOR BELOW AND REDUCING COOLING ENERGY NEEDS BY 20%. EXTENSIVE GREEN ROOFS WITH MINIMAL SOIL AND PAVING ARE IDEAL.	HABITAT, BIOPHILIA.
VINES		ARCHITECTURAL WALLS	USED TO INCREASE SEQUESTRATION IN AREAS WITH LIMITED HORIZONTAL SPACE.	HABITAT, BIOPHILIA.
NO-MOW GRASS, MEADOW		LAWN	SPECIFY NATIVE, DROUGHT-TOLERANT, AND LOW WATER USE WHERE POSSIBLE.	HABITAT, IRRIGATION REDUCTION, WATER INFILTRATION, BIOPHILIA, POSSIBLY FOOD SOURCES.
BAMBOO		LIMITED OR SHORT PLANTING IN POST-RESTORATION AREAS	SUPER SEQUESTERER. BAMBUS WHERE HARVESTED OR CAPTURED AS A REGENERATIVE BUILDING MATERIAL.	BUILDING MATERIAL, HABITAT, WATER INFILTRATION, BIOPHILIA.
HABITAT PROTECTION / RESTORATION				
COASTAL WETLANDS - SALT MARSHES, MANGROVES, SEA GRASSES		REMOVING WETLANDS, FORMAL LANDSCAPES	ONLY IMPLEMENT IN LOCATIONS/CLIMATES AS APPROPRIATE.	HABITAT, WATER INFILTRATION, BIOPHILIA, SEA LEVEL RISE PROTECTION, FRESH WATER AND WASTEWATER FILTRATION.
FORESTS		REMOVING WETLANDS, FORMAL LANDSCAPES	ONLY IMPLEMENT IN LOCATIONS/CLIMATES AS APPROPRIATE.	HABITAT, WATER INFILTRATION, BIOPHILIA.
SOILS				
COMPOST		CHEMICAL FERTILIZERS, ESPECIALLY THOSE INCLUDING NITROGEN (NDS)	SPREAD OVER THE SOIL. IT WILL IMPROVE SOIL QUALITY BY ADDING CARBON.	NITROGEN OXIDE (N2O) COMMONLY FOUND IN TYPICAL FERTILIZERS IS 300 TIMES MORE POTENT THAN CO2. MINIMIZING ITS USE IS EXTREMELY IMPORTANT.
BIOCHAR AMENDMENTS		CHEMICAL FERTILIZERS, ESPECIALLY THOSE INCLUDING NITROGEN (NDS)	STORE CO2 OF DECOMPOSED BIOMASS. WATER INTO THE SOIL. IT WILL IMPROVE SOIL QUALITY BY ADDING CARBON.	NITROGEN OXIDE (N2O) COMMONLY FOUND IN TYPICAL FERTILIZERS IS 300 TIMES MORE POTENT THAN CO2. MINIMIZING ITS USE IS EXTREMELY IMPORTANT. POTENTIALLY REDUCES WASTE PRODUCTION, IMPROVES FERTILITY, SEQUESTERS CARBON, INCREASING THE CARBON IN THE SOIL WILL INCREASE THE QUALITY.
ORGANIC FERTILIZERS		CHEMICAL FERTILIZERS, ESPECIALLY THOSE INCLUDING NITROGEN (NDS)		
WOOD MULCH		GRAVEL MULCH		SAVES WATER, IMPROVES SOIL QUALITY, DENYANTS PESTS, STOPS WEEDS, PREVENTS RELEASE OF WOOD INTO THE ENVIRONMENT. IF AGRICULTURE EXISTS IN THE SOIL.
EXISTING SOIL AMENDED IN PLACE		IMPORT SOIL		PREVENTS CO2 EMISSION FROM REMOVING AND IMPORTING SOIL. MAINTAIN SOIL HABITAT.
COVER CROPS		LEAVING SOIL EXPOSED	PLANT COVER CROPS WHILE SOIL IS EXPOSED WHILE WAITING TO PLANT. INCLUDES LEGUMES, GRASSES, BRASSICA, AND MONOCOTYLEDONS.	PREVENTS RELEASE OF CARBON FROM SOIL EXPOSURE TO THE AIR. HELPS CARBON IN THE SOIL, MAINTAINING SOIL QUALITY.

PAGE 2 OF 3



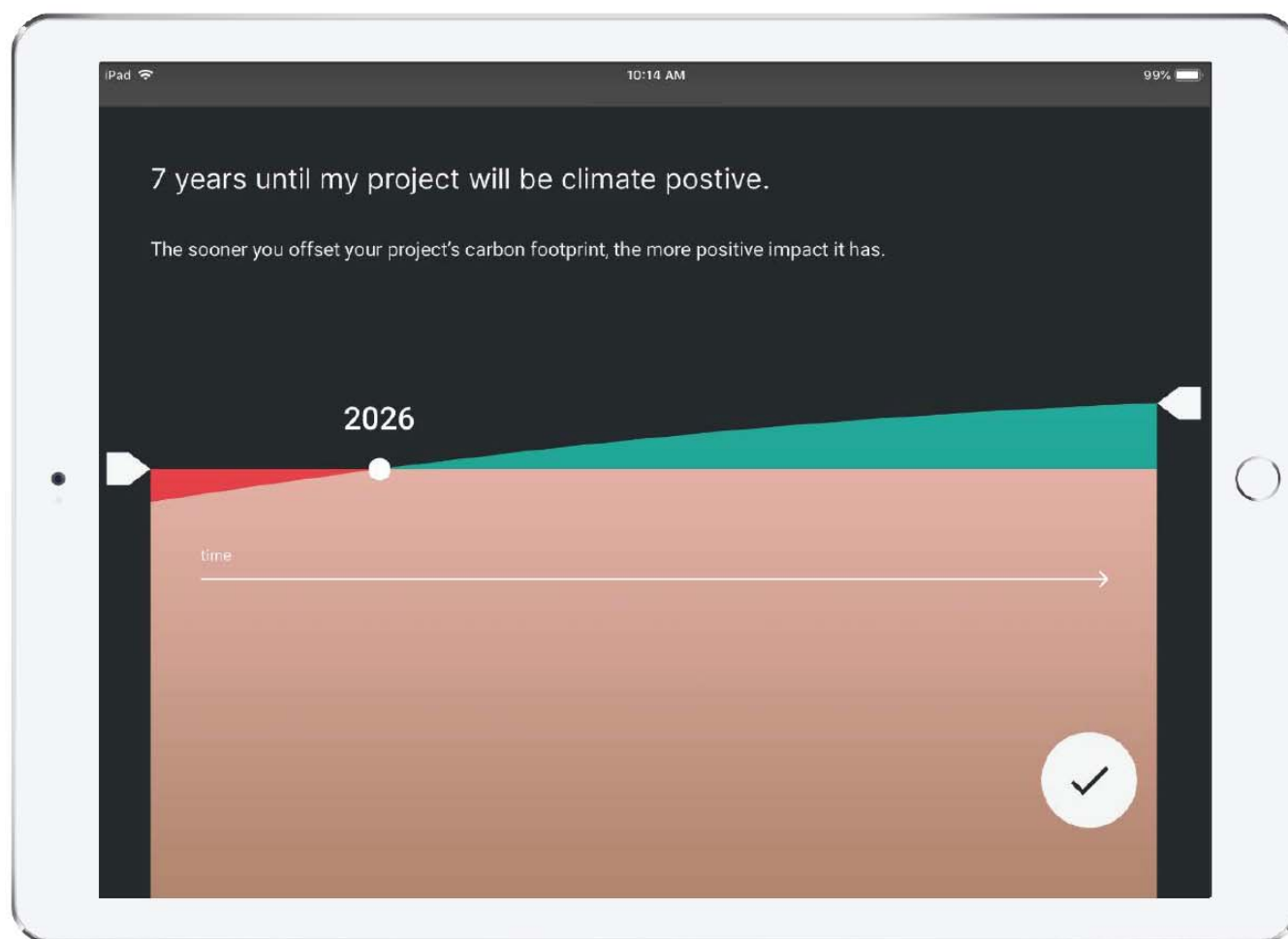
path
finder



REDUCE FOOTPRINTS



INCREASE
SEQUESTRATION





New Project

SCVWD Parking Lot

Community Pocket Park

What best describes your project?

Park

Choose your system of measurement

Imperial

CALCULATE FOOTPRINT

← Draw your site boundary

Q Santa Clara Valley Water District, 5750 A...



mapbox

← Draw your site boundary
3,038 square feet



mapbox



MATERIALS PLANTS MAINTENANCE

walls, curbs & headers fences, gates site elements drainage, irrigation subsurface elements

Aggregate Base Compacted

Area ☐ X Depth 0 inches

Stabilized Crushed Stone

Area ☐ X Depth 0 inches

Artificial Turf

Area ☐ 500 sf

633 lbs of CO₂ emitted

Asphalt Concrete

Area ☐

Concrete Unit Pavers

Area ☐ X Depth 0 inches

Detectable Warning Pavers - Concrete

MATERIALS PLANTS MAINTENANCE

walls, curbs & headers fences, gates site elements drainage, irrigation subsurface elements

Area ☐ X Depth 0 inches

Concrete - Pedestrian Cement Substitutes

Area ☐ X Depth 0 inches

Concrete - Pedestrian

Area ☐ X Depth 3 inches

1000 sf

4,879 lbs of CO₂ emitted

Concrete - Pervious

Area ☐ X Depth 0 inches

Concrete Subslab

Area ☐ X Depth 0 inches

Detectable Warning Pavers - Plastic

Area ☐

500 sq. ft. artificial turf

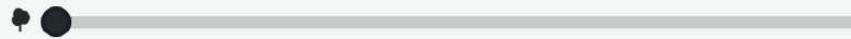
1000 sq. ft. pedestrian concrete for plaza and pathways

Growth Zone

- ☐ north
- ☐ central
- ☒ south



Deciduous Medium - Mature height 35-50ft (10-15m)



Deciduous Small - Mature height below 35ft (10m)



Evergreen Large - Mature height above 50ft (15m)



Evergreen Medium - Mature height 35-50ft (10-15m)



Evergreen Small - Mature height below 35ft (10m)



MATERIALS

PLANTS

MAINTENANCE

wetlands

trees

lawn

shrubs

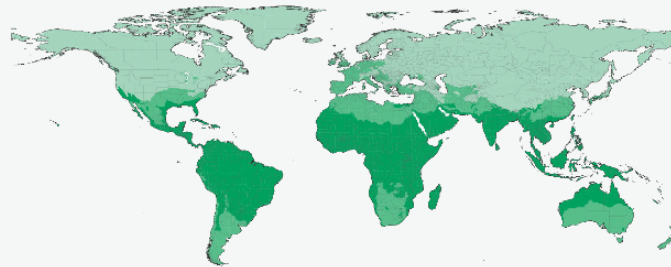
35,042 lbs of CO₂ sequestered

Growth Zone

☐ north

☐ central

☒ south



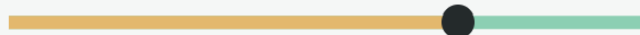
Total area

Area



Foliage

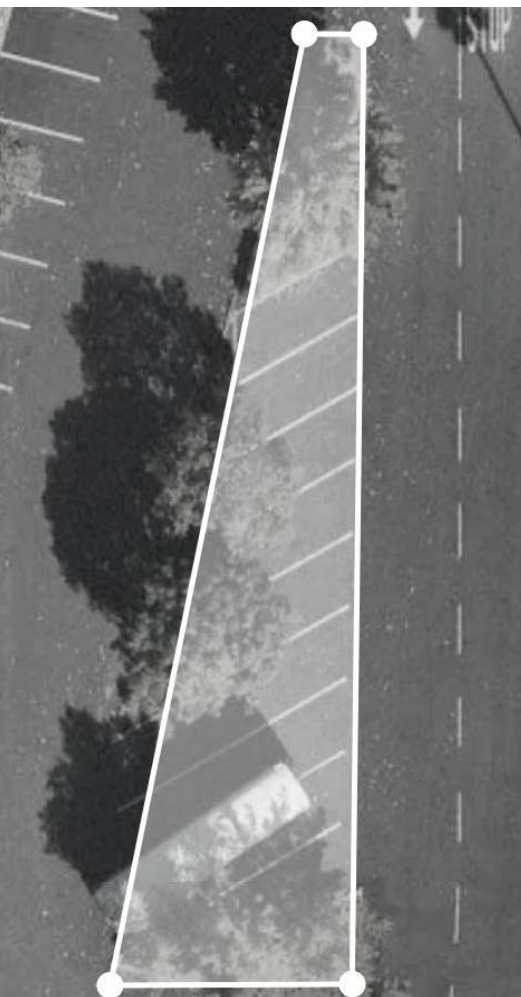
Deciduous 70%



30% Evergreen

Shrub sizes

800 sq. ft. shrubs



74
years to positive

Climate Positive Design Scorecard

Project Name **SCVWD Parking Lot**
Type of Project **Park**

Net Impact over 50 years

Total Embodied Carbon from Materials	5,512 lbs CO ₂ -eq
Total Carbon Sequestered by Plants over 50 years	39,681 lbs CO ₂ -eq
Total Operational Carbon from Maintenance over 50 years	34,974 lbs CO ₂ -eq

1.102 tons

Total Area

Impervious area
Permeable area
Planted area

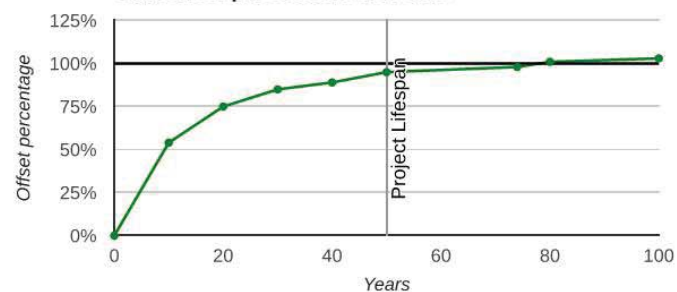
2,300 sq feet

1,500 sq feet
800 sq feet
800 sq feet

0.05 acres

65% of total area
35% of total area
35% of total area

Carbon sequestration over time



Embodied carbon profile

● Paving



MATERIALS

PLANTS

MAINTENANCE

curbs & headers

fences, gates

site elements

drainage, irrigation

subsurface elements

Stabilized Crushed Stone

Area

☐

500

sf

Depth

×

3

inches

155 lbs of CO₂ emitted

Artificial Turf

Area

☐

Asphalt Concrete

Area

☐

Concrete Unit Pavers

Area

☐

Depth

×

0

inches

Detectable Warning Pavers - Concrete

Area

☐

Depth

×

0

inches

Concrete - Pedestrian Cement Substitutes

Area

☐

Depth

×

3

inches

500sf1,833 lbs of CO₂ emitted

Concrete - Pedestrian

Area

☐

Depth

×

0

inches

Concrete - Pervious

Area

☐

Depth

×

0

inches

Concrete Subslab

MATERIALS

PLANTS

MAINTENANCE

wetlands

trees

lawn

shrubs

Evergreen Small - Mature height below 35ft (10m)

☐

3

trees

4 × Lawn4,065 lbs of CO₂ sequestered

Low-mow fescue/meadow

Area

☐

500

sf

Minimal management

Area

☐

Moderate management

Area

☐

Intensive management

Area

☐

2 × Shrubs

References

de Klein, J. J., & van der Werf, A. K. (2014). Balancing carbon sequestration and GHG emissions in a constructed wetland. Ecological engineering, 66, 36-42.

Gu, C., Crane, J., Hornberger, G., & Carrico, A. (2015). The effects of household management practices on the global warming potential of urban lawns. Journal of environmental management, 151, 233-242.

Replace
artificial turf
with low mow
grass

Use pedestrian
cement
substitutes

Convert half of
concrete area
to stabilized
crushed stone

MATERIALS

PLANTS

MAINTENANCE

wetlands

trees

lawn

shrubs

19,976 lbs of CO₂ sequestered

Growth Zone

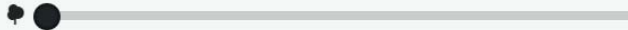
☐ north

☐ central

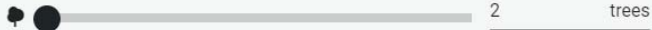
☒ south



Deciduous Large - Mature height above 50ft (15m)



Deciduous Medium - Mature height 35-50ft (10-15m)



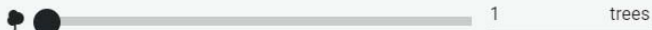
Deciduous Small - Mature height below 35ft (10m)



Evergreen Large - Mature height above 50ft (15m)



Evergreen Medium - Mature height 35-50ft (10-15m)



Evergreen Small - Mature height below 35ft (10m)



5
years to
positive

Add 3 medium
trees

MATERIALS

PLANTS

MAINTENANCE

wetlands

trees

lawn

shrubs

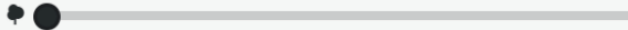
19,976 lbs of CO₂ sequestered

Growth Zone

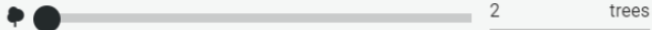
- ☐ north
- ☐ central
- ☒ south



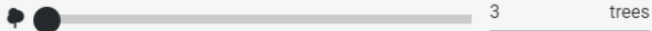
Deciduous Large - Mature height above 50ft (15m)



Deciduous Medium - Mature height 35-50ft (10-15m)



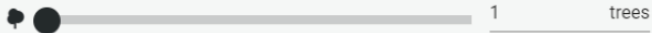
Deciduous Small - Mature height below 35ft (10m)



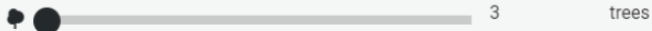
Evergreen Large - Mature height above 50ft (15m)



Evergreen Medium - Mature height 35-50ft (10-15m)

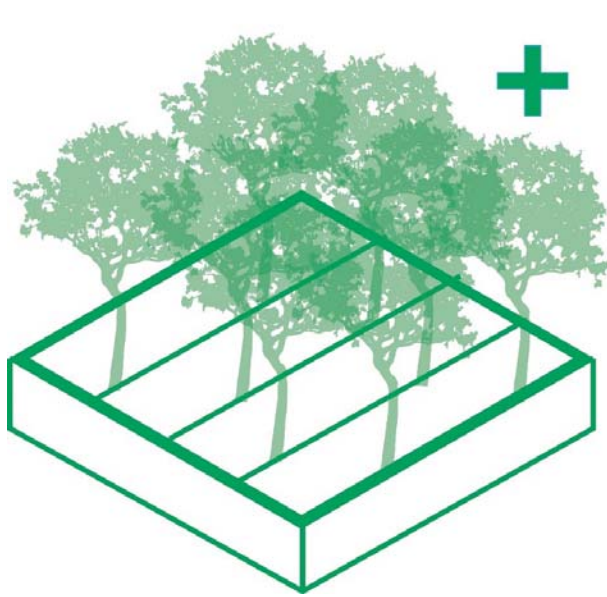


Evergreen Small - Mature height below 35ft (10m)

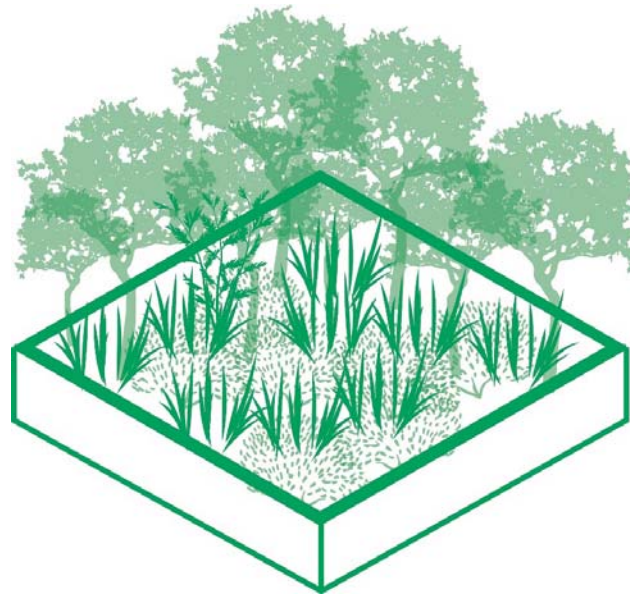


Add 3 medium trees

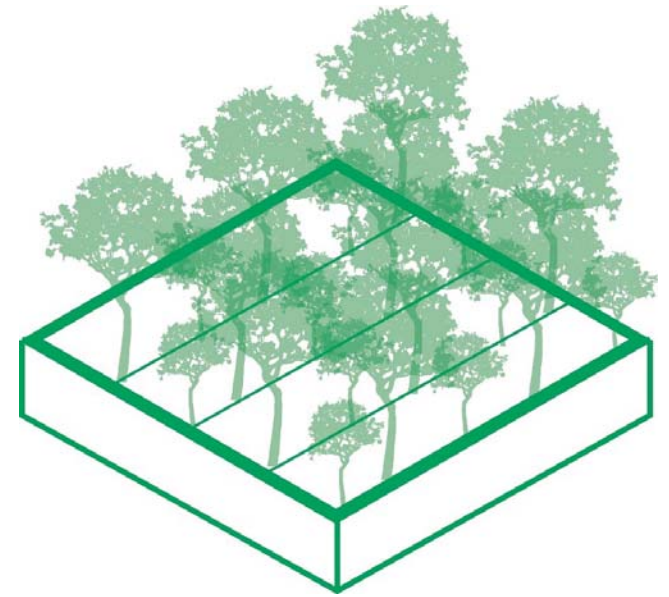
URBAN AFFORESTATION



Afforestation



Carbon Sink
Palettes



Tiny Forests

End of Summit

- 1) Thank you so much for attending! Enjoy lunch, go network and visit tables.
- 2) Keep an eye out for our follow up emails in the coming weeks.
- 3) Please turn in your Feedback Forms

