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IT'S ZERO OR NOTHING:

SOLUTIONS FOR THE POST-CARBON ECONOMY

ERIC COREY FREED

Founding Principal, organicarchitect

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The original presentation
contained
AUDIO
&
VIDEO
not included in this PDF.



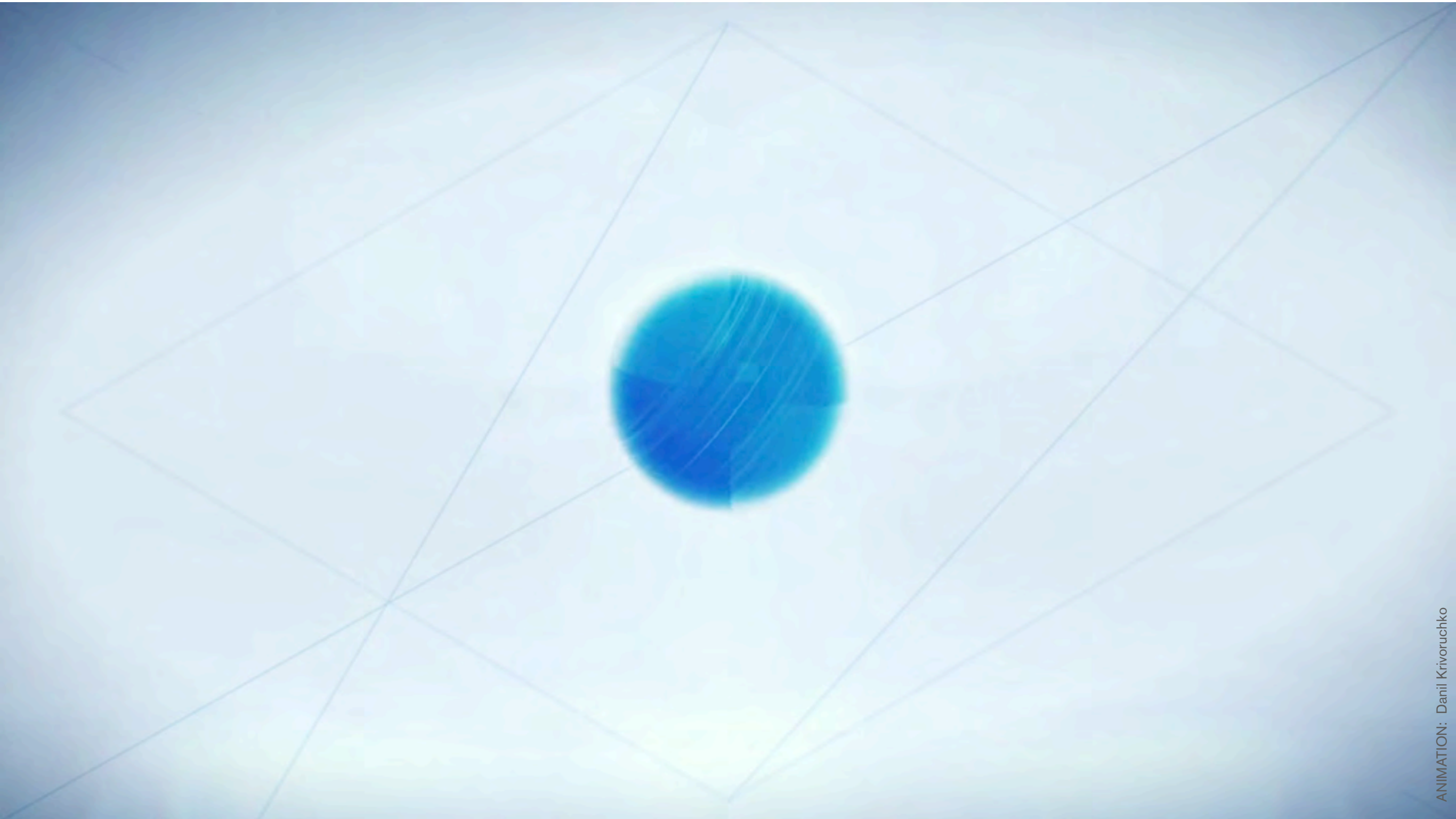
LEARNING OBJECTIVES

- **Discover how biomimicry (study of nature as designer) can teach us how to transform built environment**
- **Understand new methods to sell these ideas to the entire team**
- **Find inspiration for your own designs**
- **Learn about how to achieve bio-inspired design, solving some of the building industry's most difficult challenges**
- **Learn about how to achieve bio-inspired design, solving some of the building industry's most difficult challenges**
- **Learn about some incredibly exciting design solutions modeled on designs found in Nature.**

AGGENDAA

- **Dealing with Stupidity**
- **Avoiding Fear**
- **Climate Effects**
- **Kettle Logic**
- **If Aliens Attacked**
- **Carbon Diet**
- **Building Dinosaurs**
- **Frank Lloyd Wright as 1st Green Architect**
- **Regenerative Buildings**
- **How Man Builds/How Nature Builds**
- **3D Printing**
- **Stopping the Decline**





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A man with dark hair, wearing a blue button-down shirt and khaki pants, stands in the center of the frame. He is smiling slightly and has his hands in his pockets. The background features a golf course with a green fairway and a sand trap. In the distance, there are large, rugged mountains under a clear blue sky. A bridge is visible on the left side of the image.

ericcoreyfreed

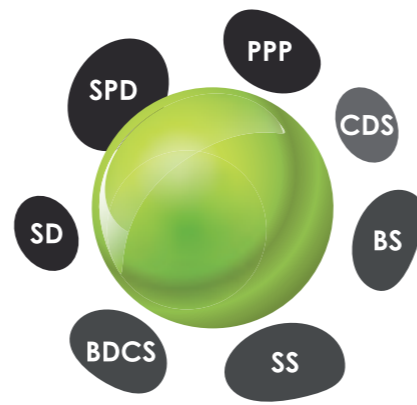
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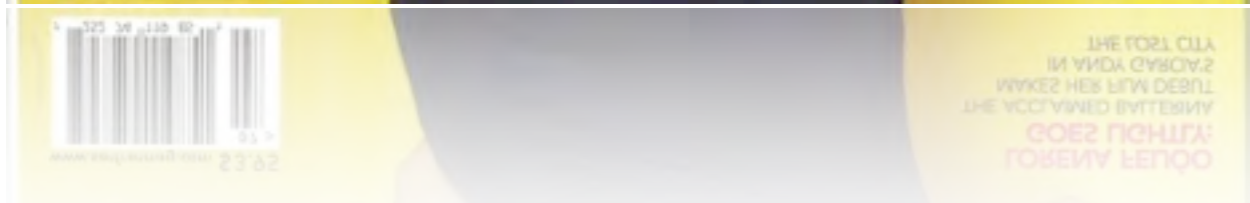
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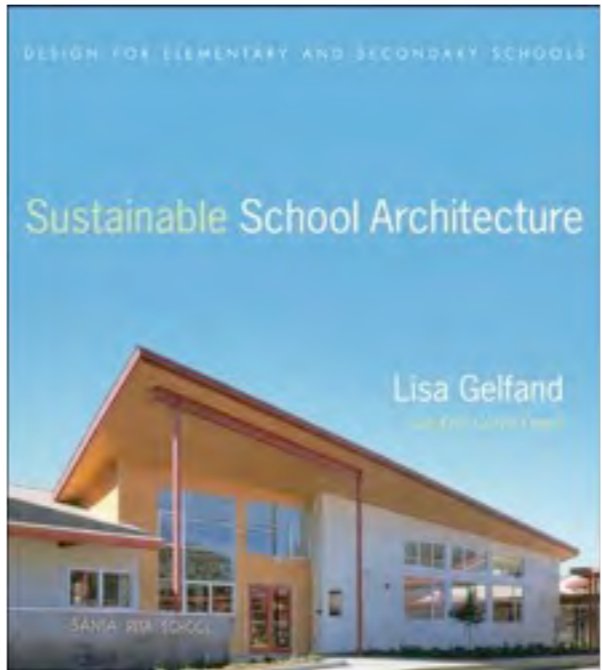
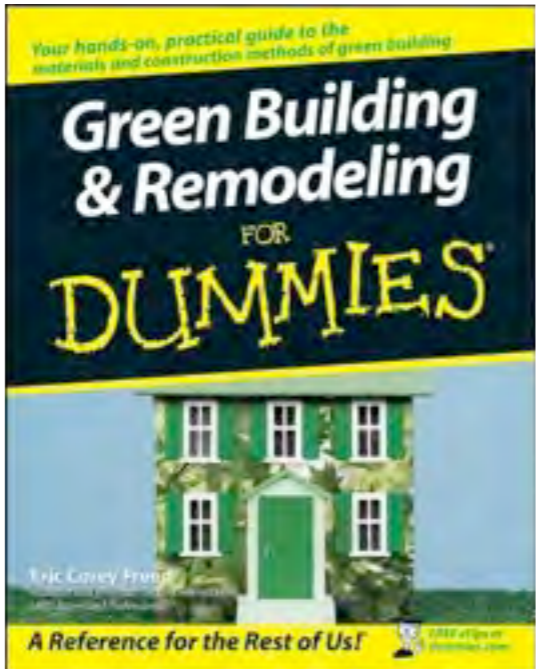
UC Berkeley Extension



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CityUniversity
of Seattle





SEEING GREEN

THE ROOF HOLDS SECRETS AND UNTAPPED POTENTIAL WHEN IT COMES TO GREEN HOME DESIGN. TRADITIONALLY A PLACE FOR CHRISTMAS LIGHTS AND LOST FRISBEES, THE ROOF OF MOST HOMES COULD POSSIBLY PRODUCE ALL OF A HOME'S ENERGY NEEDS. THIS FEAT OF MAGIC COMES FROM SOLAR PANELS, AN OLD TECHNOLOGY.

SOLAR PANELS (AKA: PHOTOVOLTAIC PANELS, OR PV PANELS) ARE THE LATEST STATUS SYMBOL, ALONGSIDE HYBRID CARS, FOR THOSE WHO LIKE TO SHOW OFF THEIR GREEN APTITUDE. AND WITH GREEN CONSCIOUSNESS ON THE RISE, BARE ROOFS MIGHT GO THE WAY OF THE DINOSAUR. RECENTLY OVERHEARD AT A CONFERENCE: "EVERYONE WHO IS ANYONE PUTS SOLAR ON THEIR ROOFS."

LIGHT YEARS

The Earth receives more energy from the sun in just one hour than the world uses in an entire year.



SOLAR INSPIRATION

WRITTEN BY ERIC COREY FREED



CURRENT THINKING

The principle behind a solar panel is simpler than you might expect: French scientist Edmond Becquerel in 1839 first discovered the photovoltaic effect—which makes solar power possible. When sunlight strikes the panel's thin wafers of silicon, the electrons get "jazzed" and start moving, and this produces electrical current.

Companies are seeking ways to produce more efficient solar panels, yet all panels essentially use the same type of solar cells used since Bell Labs produced the first silicon solar panels in 1954. Consider this: It is a 53-year-old product based on a 168-year-old scientific discovery. With that kind of history, solar power is hardly a trend or a risky new alternative.



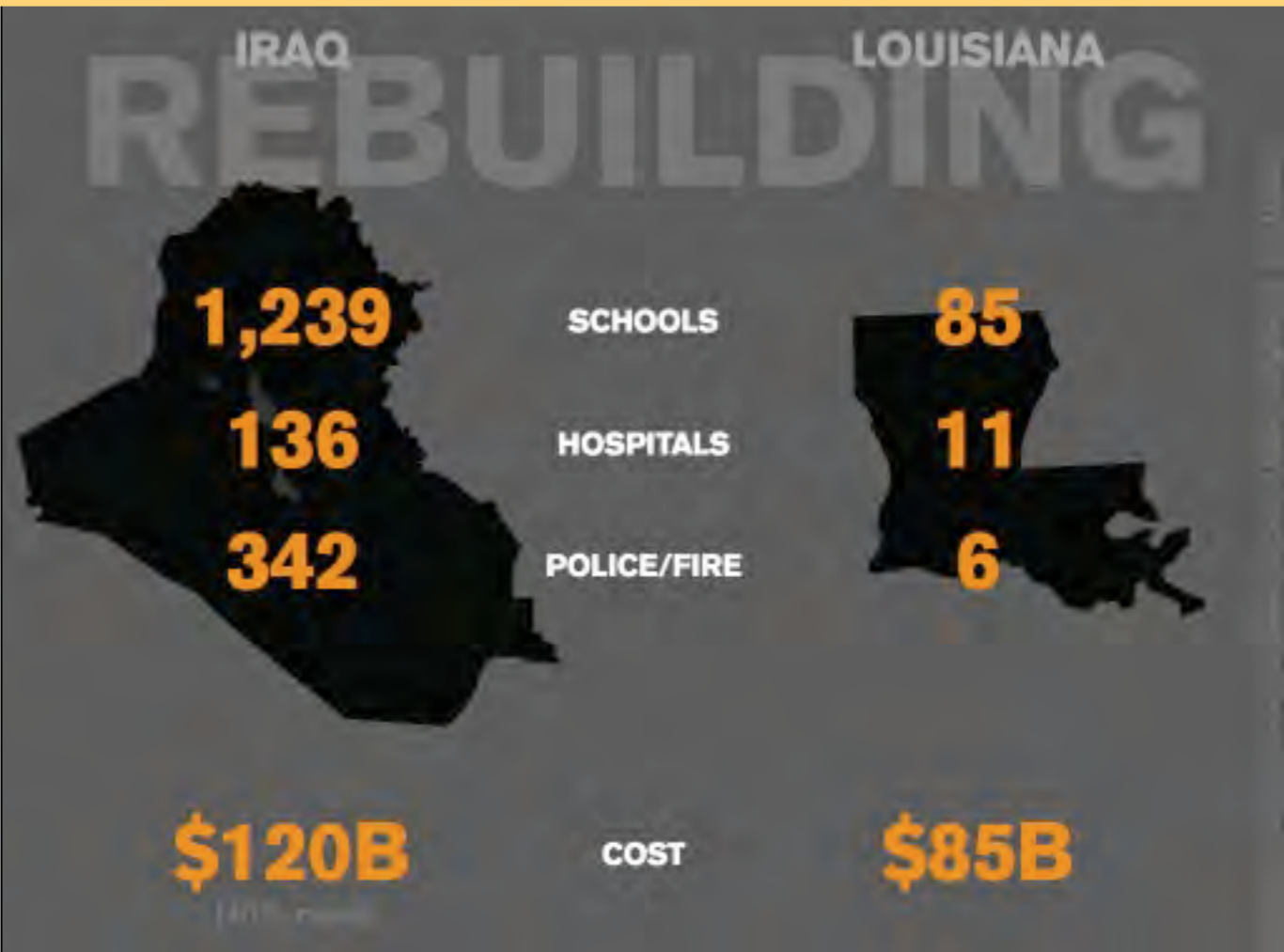




SOURCE: University of Detroit Mercy



SOURCE: Center for Responsive Politics, OpenSecrets.org



LIVE
SAN FRANCISCO

Eric Corey Freed
ORGANIC ARCHITECT FOUNDER

MARKET ALERT
9572.16
140.12

FOX BUSINESS

INTERNET TECHNOLOGY TOP STORIES

AKAMAI (AKAM) 18.78 0.90

S&P 1038.30 18.80 NASDAQ 2073.20 49.22

11:46 a ET

Eric Corey Freed
Author/Architect

LIVE
7:54 a PT

Eric Corey Freed
URBAN RE:VISION EXECUTIVE DIRECTOR

FOX FIFTY TOP STORIES WEATHER

UPS (UPS) 57.19 0.03

DOW 10293.90 38.54 S&P 1088.75 6.15 NASDAQ 2139.61 17.21

Eric-Corey Freed
Author
Green Building
for Dummies

American Standard
Style That Works

green//build//pro

Eric Corey Freed
FOUNDER, ORGANIC ARCHITECT

smartplanet

Eric Corey Freed
Executive Director
organicARCHITECTURE

LIVE
7:54 a PT

GREENER TAXES

FOX FIFTY TOP STORIES WEATHER

CHARLES SCHWAB (SCHW) 18.10 0.21

DOW 10293.30 39.14 S&P 1088.70 6.20 NASDAQ 2139.47 17.35

ERIC COREY FREED

LIVE

**GREEN BUILDINGS HAVE HIGHER
WORKER PRODUCTIV. IN FACTORIES**

FOX FIFTY TOP STORIES

YAHOO! INC (YHOO) 17.34 0.47

DOW 9570.50 141.78

FOX BUSINESS

INTERNET TECHNOLOGY TOP STORIES

S&P 1038.25 18.85 NASDAQ 2072.96 49.46

11:46 a ET



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 The Desert Sun
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Money
FOR YOU, YOUR FAMILY, YOUR FUTURE

DON'T APOLOGIZE



THE
UNCHAINED
GODDESS

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CFL



LED

Greenest Choice?

Get A
BRAIN!
MORANS



Cardinals

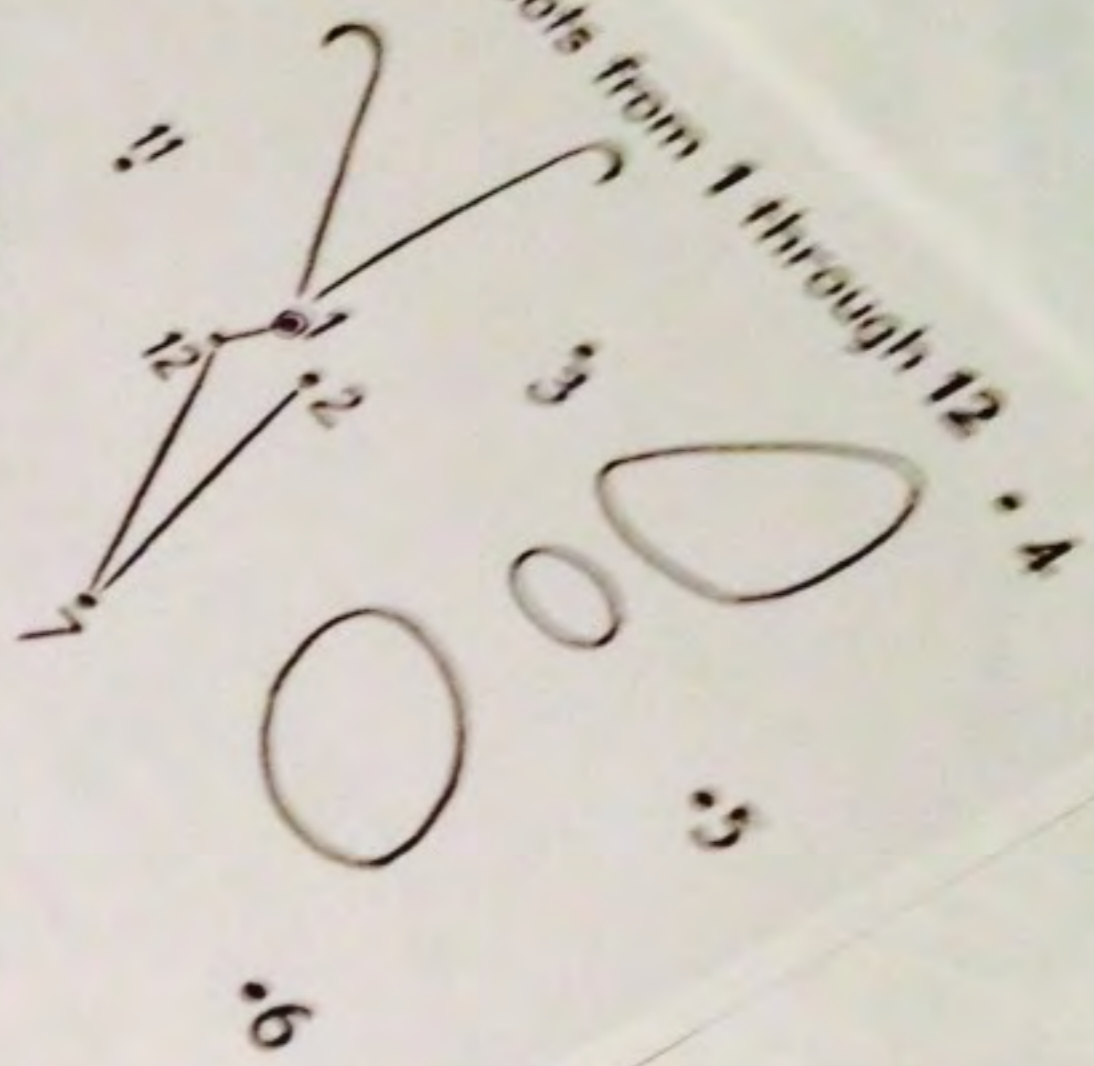




CLIP: The Newsroom, Season 2, 2013



dodo
SAPIENS



Connect the dots from 1 through 12



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Baseball®*

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The coach is waiting for his next beer.
The pitcher is waiting for her first bra.
The team is waiting for a miracle.
Consider the possibilities.

**WALTER
MATTHAU**

**TATUM
O'NEAL**



Paramount Pictures Presents
A STANLEY R. JAFFE PRODUCTION A MICHAEL RITCHEE FILM

"THE BAD NEWS
Bears"

Also Starring **VIC MORROW** Written by **BILL LANCASTER** Produced by **STANLEY R. JAFFE**
Directed by **MICHAEL RITCHEE** Music Adapted by **JERRY FIELDING** In Color A Paramount Picture

PG PARENTS STRONGLY CAUTIONED
SOME MATERIAL MAY BE INAPPROPRIATE FOR CHILDREN UNDER 10



POSTERWINE.COM

POSTERWINE.COM

Produced by **STANLEY R. JAFFE** Written by **BILL LANCASTER** Directed by **MICHAEL RITCHEE**
Starring **WALTER MATTHAU** and **TATUM O'NEAL** Also Starring **VIC MORROW**
Music Adapted by **JERRY FIELDING** In Color A Paramount Picture

Bears



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flat

green
promise

liso sin brillo
prácticamente sin olor

green
promise

semi-mate
prácticamente sin olor





U.S. GREEN BUILDING

LEED PLATINUM

2009











**what will my
client think?**





BD+C Survey
October 2013









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










1. PROJECT

New My current Projects My Projects My Groups' Projects

MY PROJECTS (53)

Find








- 1  **Marketing Plan** 
Active / 47% / Group / iLiv
- 2  **User Stories Design & Implementation** 
Active / 5% / Group / iLiv
- 3  **All-In Release 2013.10** 
Active / 20% / Group / iLiv
- 4  **Building iLiv** 
Active / 0% / Group / iLiv
- 5  **iLiv 2013 Q4** 
Active / 65% / Group / iLiv
- 6  **iLiv Board Meetings** 
Active / 62% / Generic / iLiv Board
- 7  **AC + KT combined personal** 
Active / 100% / Generic / iLiv
- 8  **Customer Development: Business Model Canvas** 
Active / 97% / Generic / Brigitte's All-in Feedback
- 9  **iLiv GBCI Shared Work** 
Active / 83% / Generic / iLiv
- 10  **iLiv LBNL** 
Active / 16% / Generic / iLiv
- 11  **UI/UX, Wording, and Other Fixes** 
Active / 91% / Generic / iLiv
- 12  **User Stories 2012** 
Active / 66% / Generic / iLiv
- 13  **1872 Market Street** 
Active / 31% / LEED Certification ND 2009 /

2. TEAM

Role Involved Group Involved People Group

PEOPLE IN MY PROJECTS (40)

Find

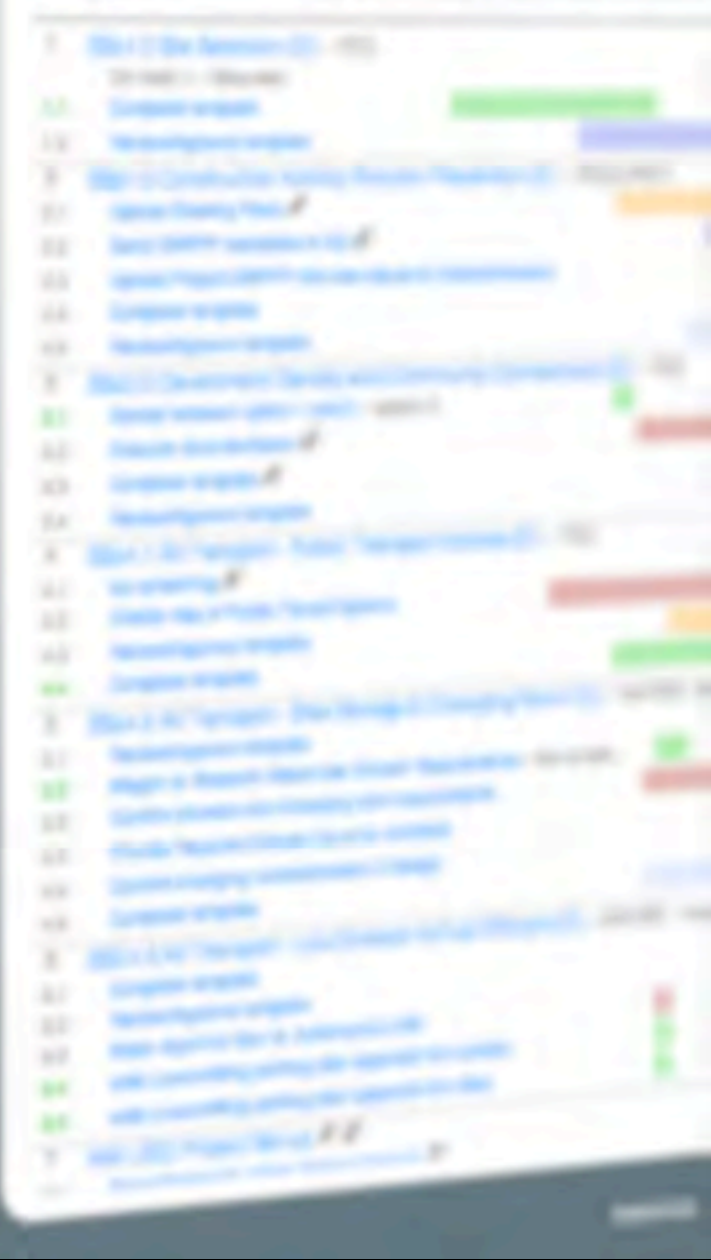
- Project Admin**
UI/UX, Wording, and Other Fixes
Andrew Culver, Project Admin
User Stories 2012
CEO, Contributors, Project Admin
User Stories Design & Implementation
Storyteller, Project Admin
-  **Ann Edminster** (1)
iLiv LBNL
Everyone, Practitioner scientist
-  **Anne Banta** (1)
GREENBUILD SF 2012
Central Concrete
-  **Betty Fitzpatrick** (1)
KT + AC Wedding
Guest
-  **Bill Reed** (2)
Bill Reed IP (Prototype)
Project Admin
iLiv LBNL
Friendly yet impatient instigator, Everyone, IP Practitioner
-  **Brigitte Dajczer** (1)
GREENBUILD SF 2012
iLiv Technologies
-  **Buckminster Fuller** (2)
1872 Market Street
Green Rater
Bayside Building Project
Project Architect
-  **Cece Culver-Grey** (14)
1872 Market Street
Building Scientist, Project Admin
All-in Release 2013.2
Customer Support, Email Marketing
Bayside Building Project
Project Admin, Interior Design Manager
Customer Development, Bill
Cece
iLiv 2013 Q4

3. TIME

No filters applied

BAYSIDE BUILDING PROJECT

Active / 100% / 2013 / Green Rater / Bill





How integrative is
your process?

integrative.iLiv.com

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“EricOrNothing”

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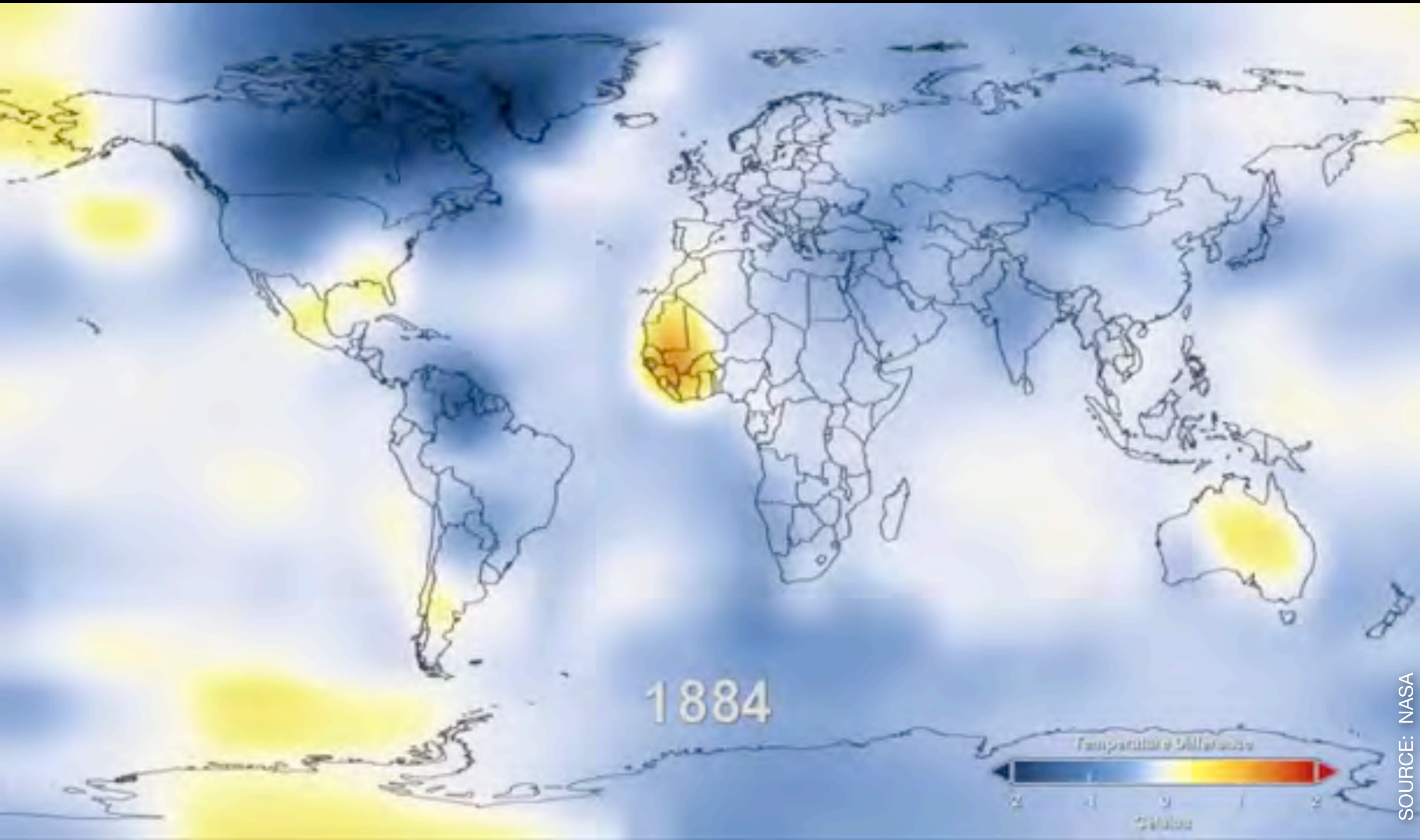
40% off

F E A R

F E A R



STILL: The Wizard of Oz (1939)



THE LAST GENERATION

NUMBER OF DEATHS

	2010	2030	
Climate	Diarrheal Infections	85,000	150,000
	Heat & Cold Illnesses	35,000	35,000
	Hunger	225,000	380,000
	Malaria & Vector Borne Diseases	20,000	20,000
	Meningitis	30,000	40,000
	Environmental Disasters	5,000	7,000
	Total	380,000	400,000

each year

400,000

deaths from

climate change



CLIMATE



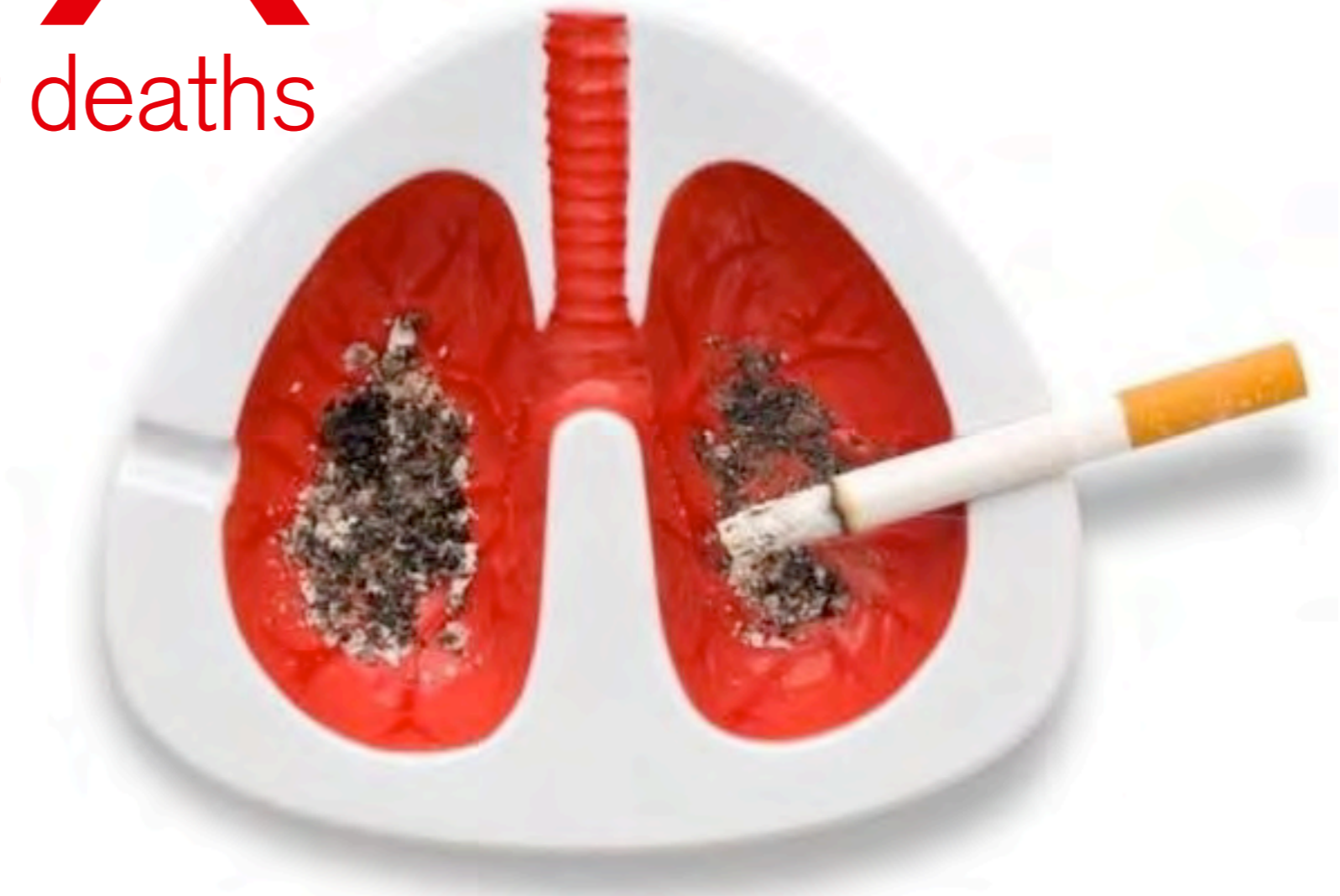
2010 2030



2010 2030



2.5x
annual lung cancer deaths





10x

annual breast cancer deaths



Strokes
129,476



Accidents
120,859



Alzheimer's
83,494



Diabetes
69,071

what would



LOOK LIKE?!



January 8, 2013

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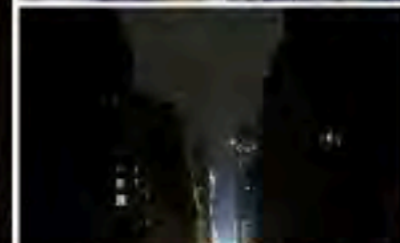
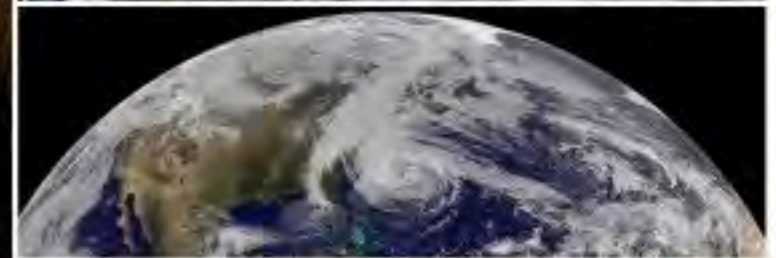
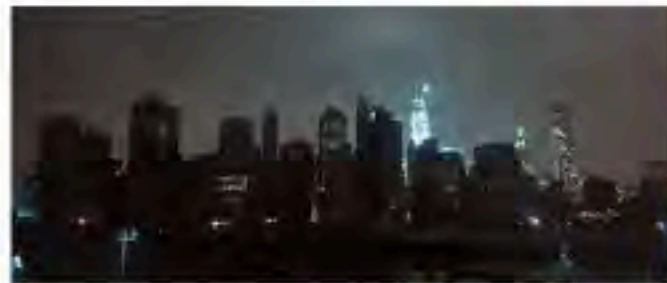
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UNDER SIEGE

AT LEAST 33 DEAD... MILLIONS WITHOUT POWER... PUBLIC TRANSIT DOWN



June 19, 2013

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1 minute ago

'CLIMATE FISCAL CLIFF'



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AP: **Federal agent accused of Hawaii murder takes stand** 27 minutes ago **FROM AP: APNewsBreak: Romney warns a**

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1 minute ago

FROM AP: Obama aims to tackle pollution, climate change

1 minute ago

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'WE NEED TO ACT'





cost of

extreme weather

now surpasses

education budget



\$2.6 Billion
for Education



\$8 Billion
for Oil Subsidies

CONCRETE
INDUSTRY

3 tons

per year
for every person
on Earth



1
LUMBER INDUSTRY

16 trees
per year
for every person
on Earth

Before it's too late. wwf.org



SOURCE: WWF



STEEL **6000**

pounds
per year
for every person
in US



ExxonMobil

91,800,000
total per day

3,921,000 barrels
per day



**“The Stone Age
didn't end because
we ran out of stones.”**

Former Saudi oil minister
Sheik Ahmed Zaki Yamani

TRASH &
Quick-
OUT OF SIGHT, OUT OF
OF MIND!
-Fix
AGS

IT DEFINITELY DOES SOMETHING

CO₂
B-Gone
Aerosol Spray

NET WT. 12.5 OZ (354 g)

INSTRUCTIONS:
SPRAY TWICE AND
HOPE FOR THE BEST

Essence

A photograph of a melting ice cream cone on a dark asphalt surface. The ice cream is light green and is melting into a large puddle on the left side of the cone. The cone itself is a light brown wafer. The asphalt is dark and has some small puddles of melted ice cream scattered around. The text "climate effects" is overlaid in a green, sans-serif font on the left side of the image.

climate
effects



10%
more turbulence

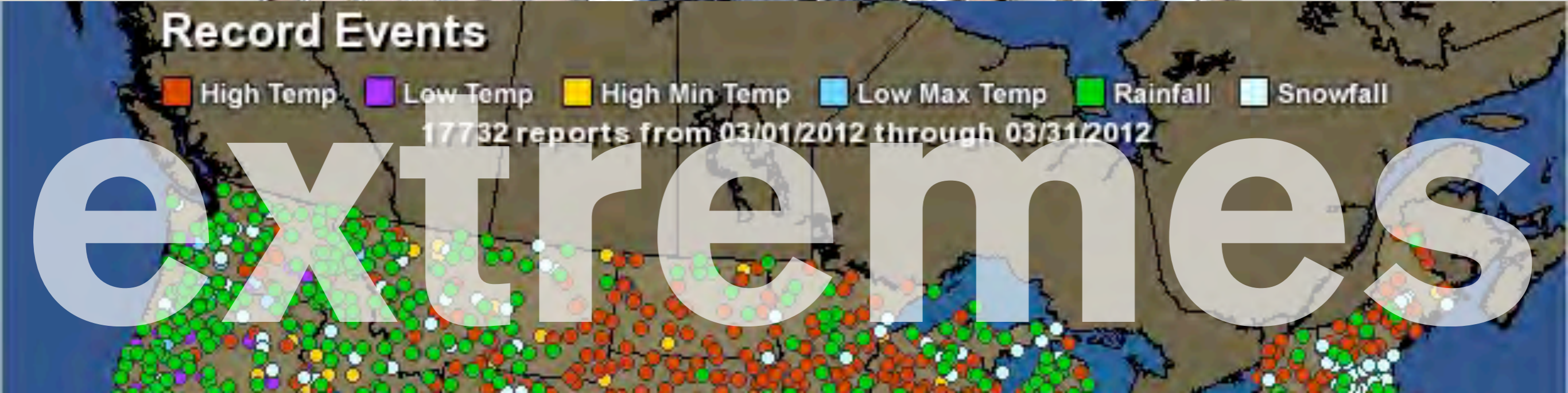




The Colbert Report

Wednesday, 30 October 2013





YOU

MOTHER NATURE

sneaks up
on you

MOTHER
NATURE

YOU



coffee





deadly fungus

70

years





40%

decrease in catch

by 2050

27%

decrease in wheat
by 2050

wine production

73%

by 2050



hops quality since 1954

1%





temperature

**SAVE THE EARTH,
ITS THE ONLY
PLANET
WITH CHOCOLATE**







PHOTO: Jerry James Stone

NBC NEWS WASHINGTON

NIGHTLY
NEWS
with BRIAN WILLIAMS

msnbc.com

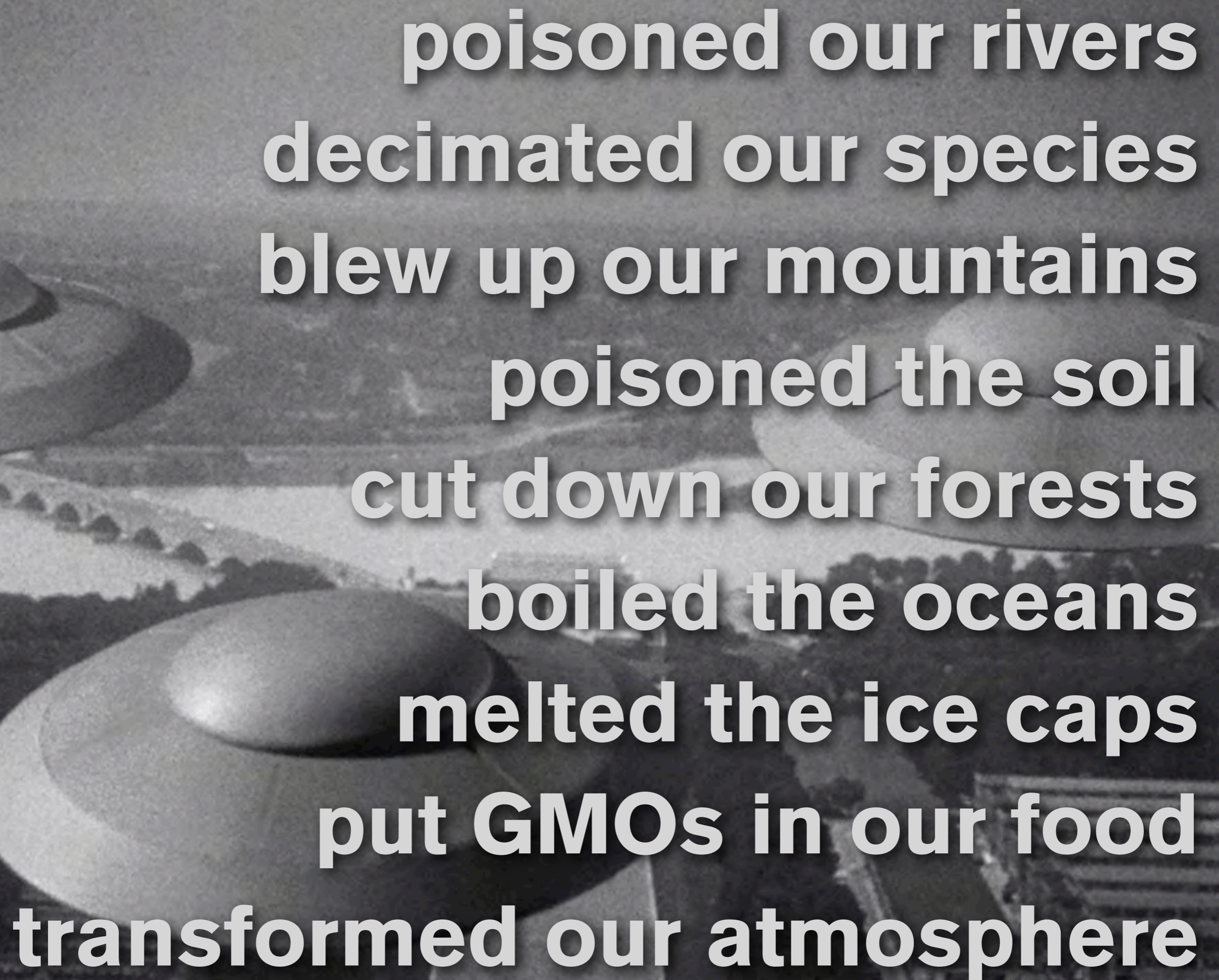
CLIP: Brian Williams, NBC Nightly News, February 26, 2013

NBC News: February 26, 2013

Aliens might be surprised to learn that in a Universe of **unlimited starlight**, humans **kill for energy** buried in the sand.

– Neil deGrasse Tyson



An aerial photograph of a rural landscape. The foreground and middle ground are dominated by several large, circular agricultural fields, likely for irrigation. A winding river or canal cuts through the landscape. The background shows more fields and a line of trees. The overall tone is somewhat desaturated, with a focus on the geometric patterns of the land.

**poisoned our rivers
decimated our species
blew up our mountains
poisoned the soil
cut down our forests
boiled the oceans
melted the ice caps
put GMOs in our food
transformed our atmosphere**







MOVIECLIPS.COM

CLIP: The Arrival (1996)

Republicans Vote To Repeal Obama-Backed Bill That Would Destroy Asteroid Headed For Earth

NEWS · Politics · Our Annual Year 2011 · ISSUE 47·50 ISSUE 47·05 · Feb 2, 2011

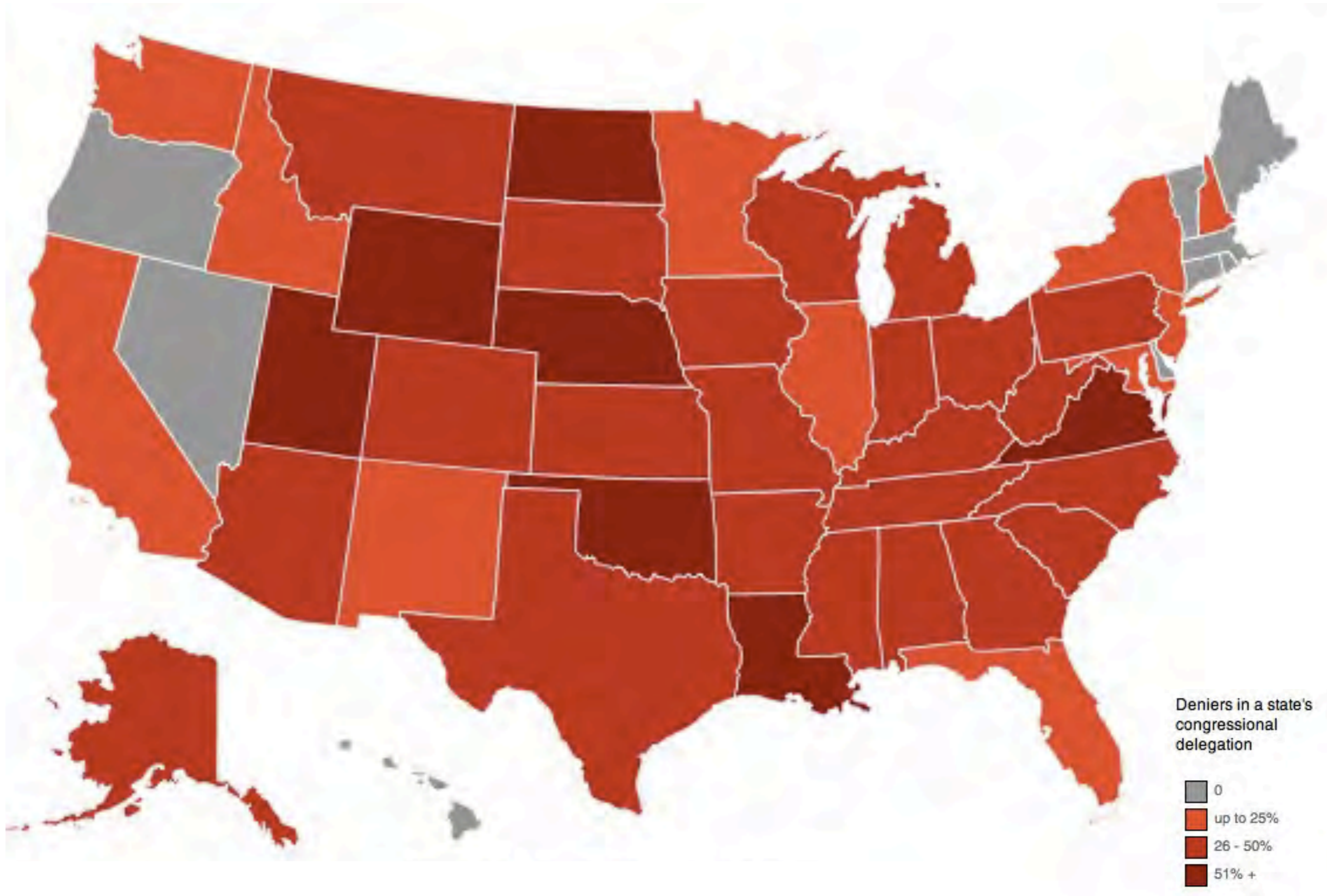


House Republicans say the bill, which was passed to stop the giant asteroid from hitting Earth, is 'big government at its worst.'

government at its worst,

House Republicans say the bill, which was passed to stop the giant asteroid from hitting Earth, is 'big

Climate Deniers by Representative





Taken from 'Top of The Pops:
1962 - 2002' by Jeff Simpson

© BBC

Freud's Kettle Logic



1. I returned the kettle undamaged;
2. It was already damaged when I borrowed it;
3. I never borrowed it in the first place.

- 1. There is no climate change;**
- 2. Climate change is not manmade;**
- 3. Manmade climate change can be easily fixed with clean coal.**

ClimateDesk Live
December 3, 2012



Rep. Ed Markey
(D) Massachusetts


Evolution and the Big Bang
are **“lies straight from
the pit of hell.”**

Serves on the House
Science Committee



September 2012
speaking to his
Constituents

Paul Broun, Jr.
Rep. 10th District Georgia (R)



Can't use wind turbines
cause **they would**
slow down the wind.

Serves on the House
Energy Committee

September 26 2009

speaking to the
Energy Committee

Joe Barton

Rep. 6th District Texas (R)



MY SPOUSE
IS SLEEPING
AROUND

LEPOINT




“we need to act.”

Climate Change Speech

June 25, 2013

Georgetown University

Washington, D.C.

A photograph of President Barack Obama speaking at a wooden podium. He is wearing a light blue, short-sleeved button-down shirt and a watch on his left wrist. He is gesturing with his right hand. In the background, there are several large white wind turbines against a clear blue sky with some light clouds. The scene is outdoors, likely at a wind farm.

“We have subsidized
oil companies for a century.
I think that's long enough.”

– President Obama

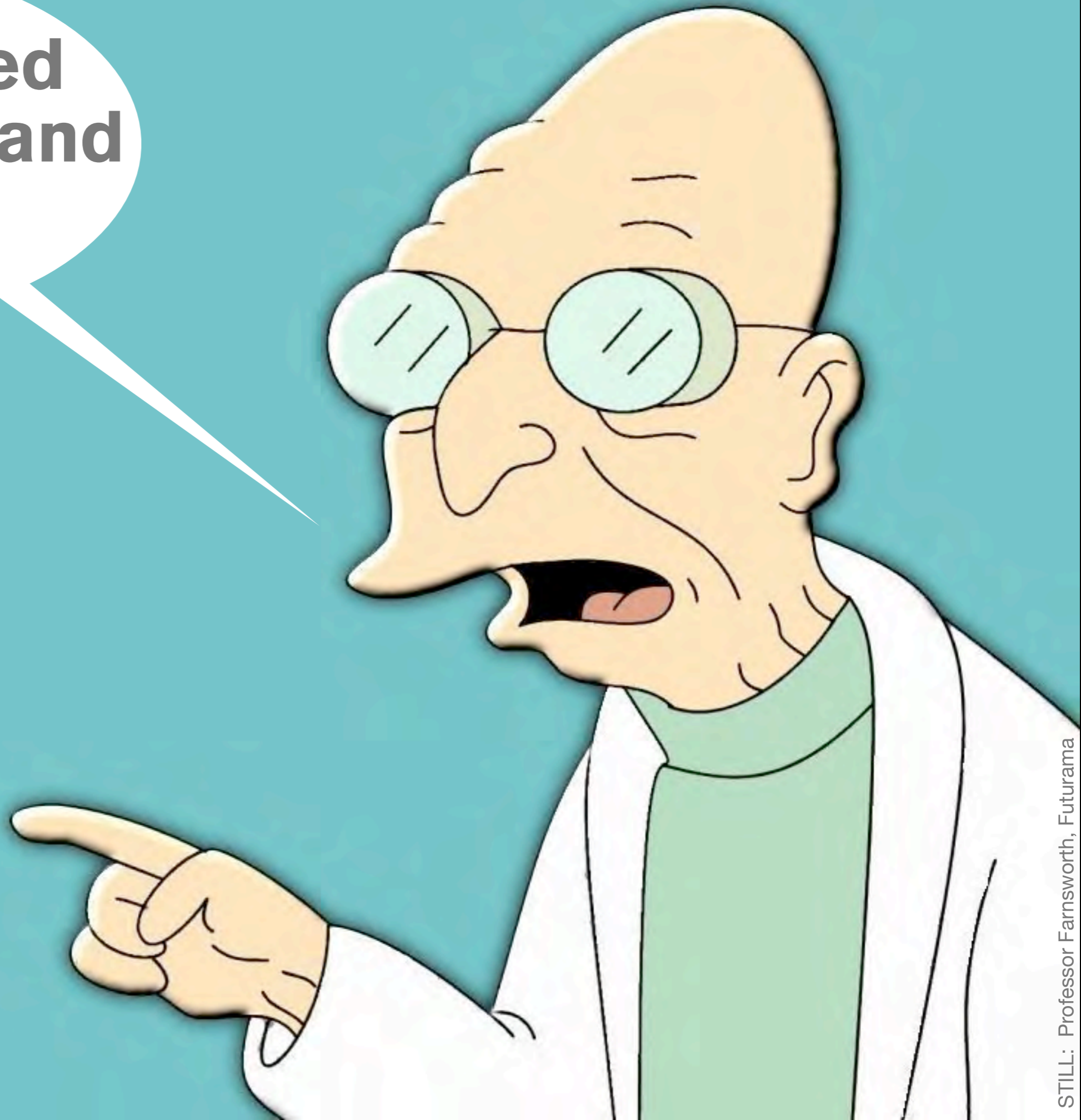
WE ALL
HATE YOU
SANDY

HAL-74

CONTROL ROOMS
GRID FLOOR
74
GOODS RECEIVED
06/09/04
02 OF 10

carbon

**have you tried
eating right and
exercising?!**



84 hard capsules



alli[®]
60 mg hard capsules
orlistat

weight loss aid
can help you lose more
weight than dieting alone



**have you tried
eating right and
exercising?!**

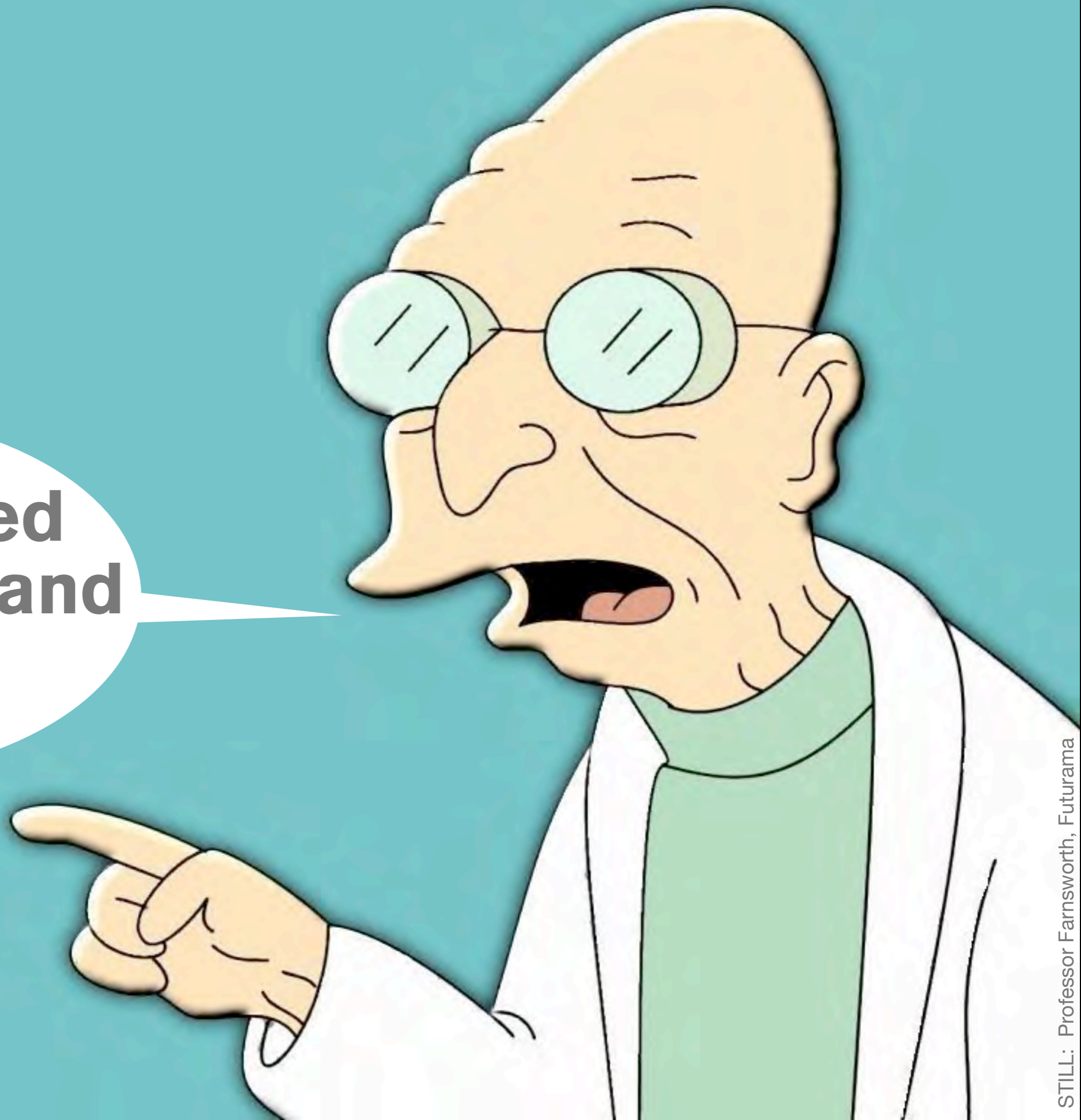



Simply
Organic.

cayenne

NET WT. 2.89 OZ. (82g)

**have you tried
eating right and
exercising?!**









**have you tried
cutting emissions
and fossil fuels?!**



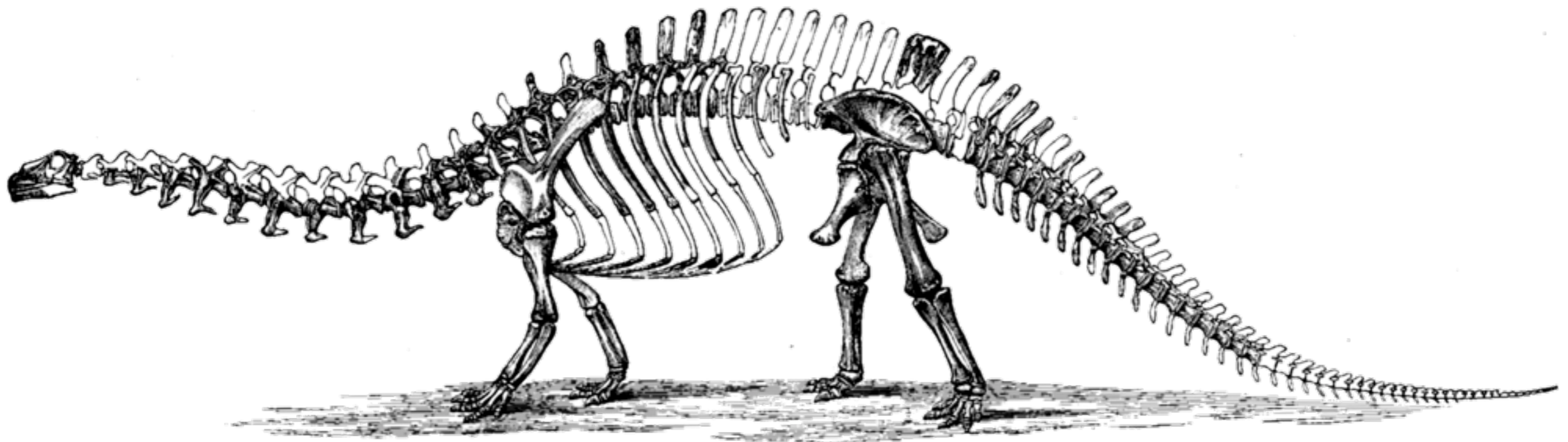


CLEAN

COAL?











this is
DEAD







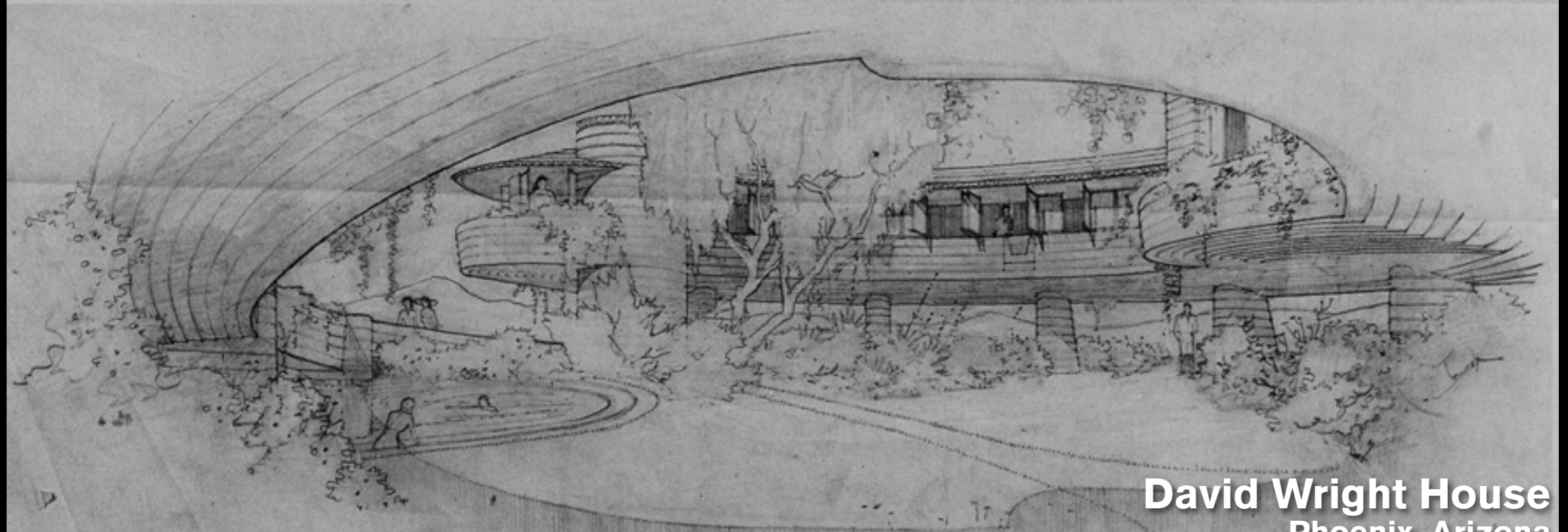
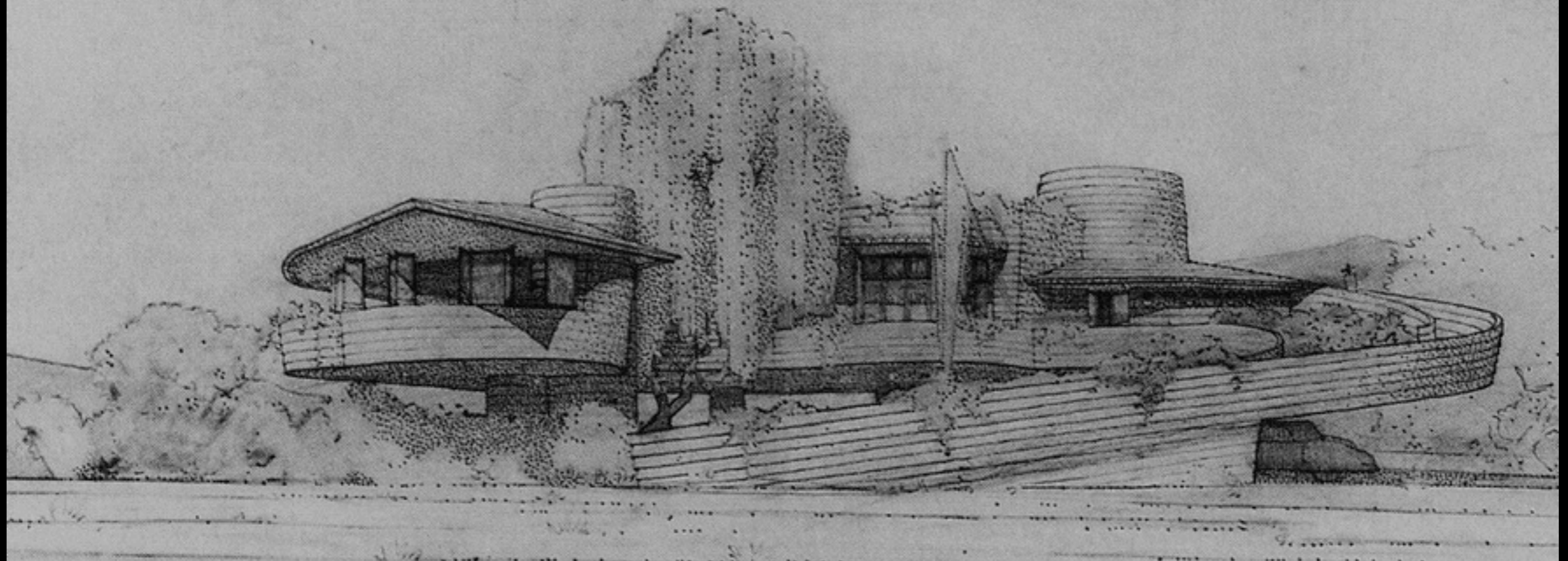
Vauban, Germany



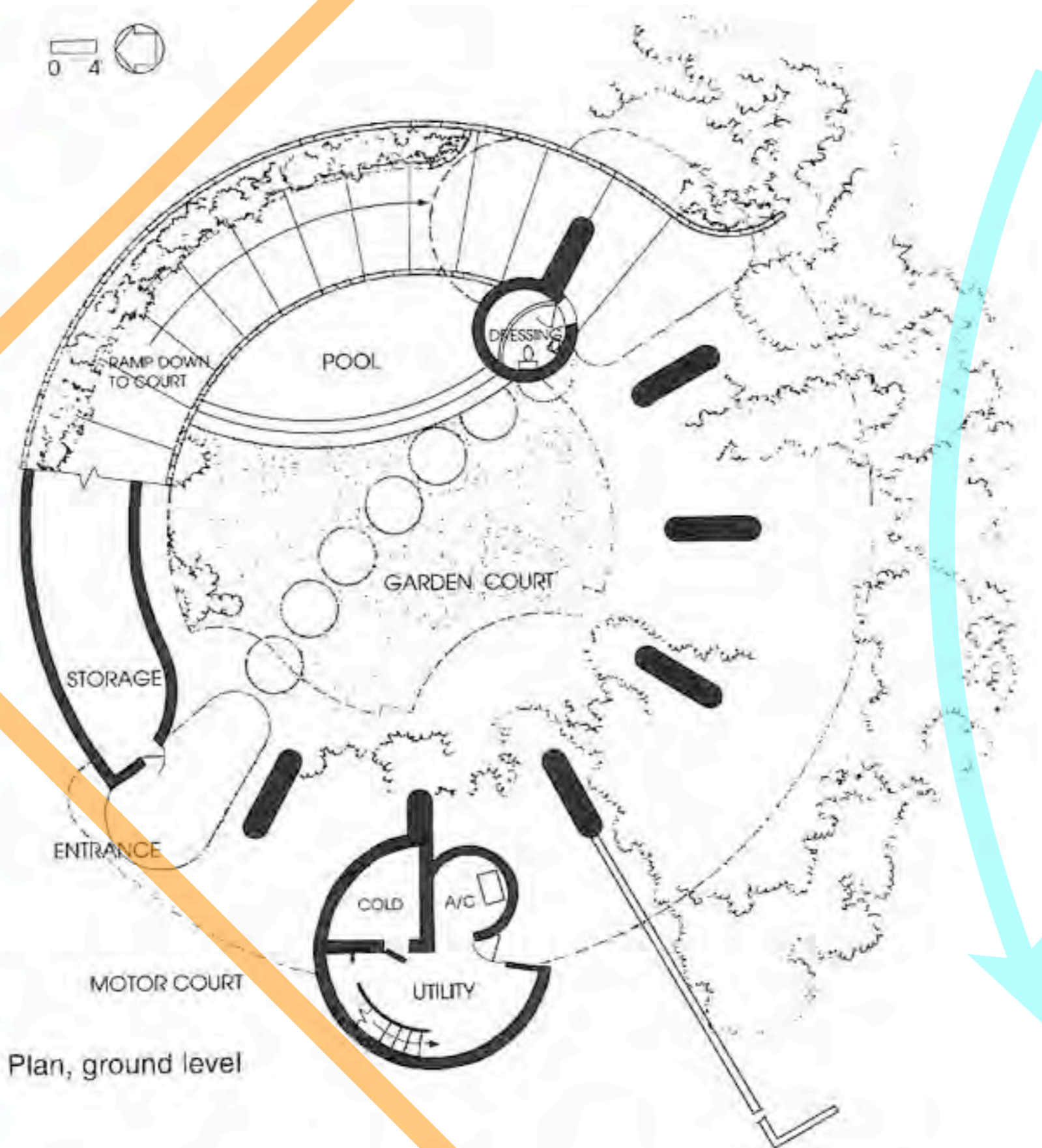
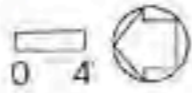
22.4



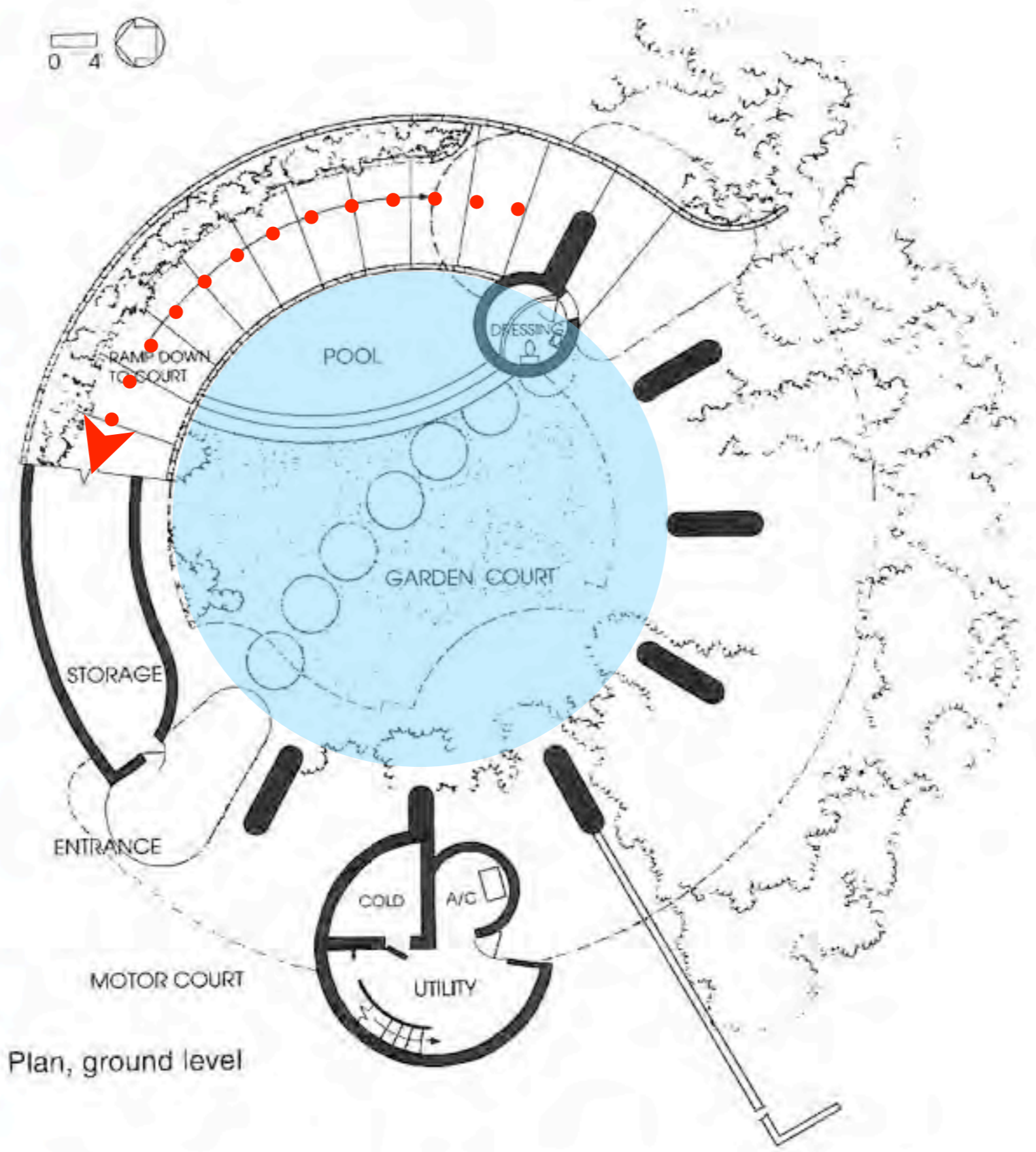
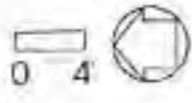




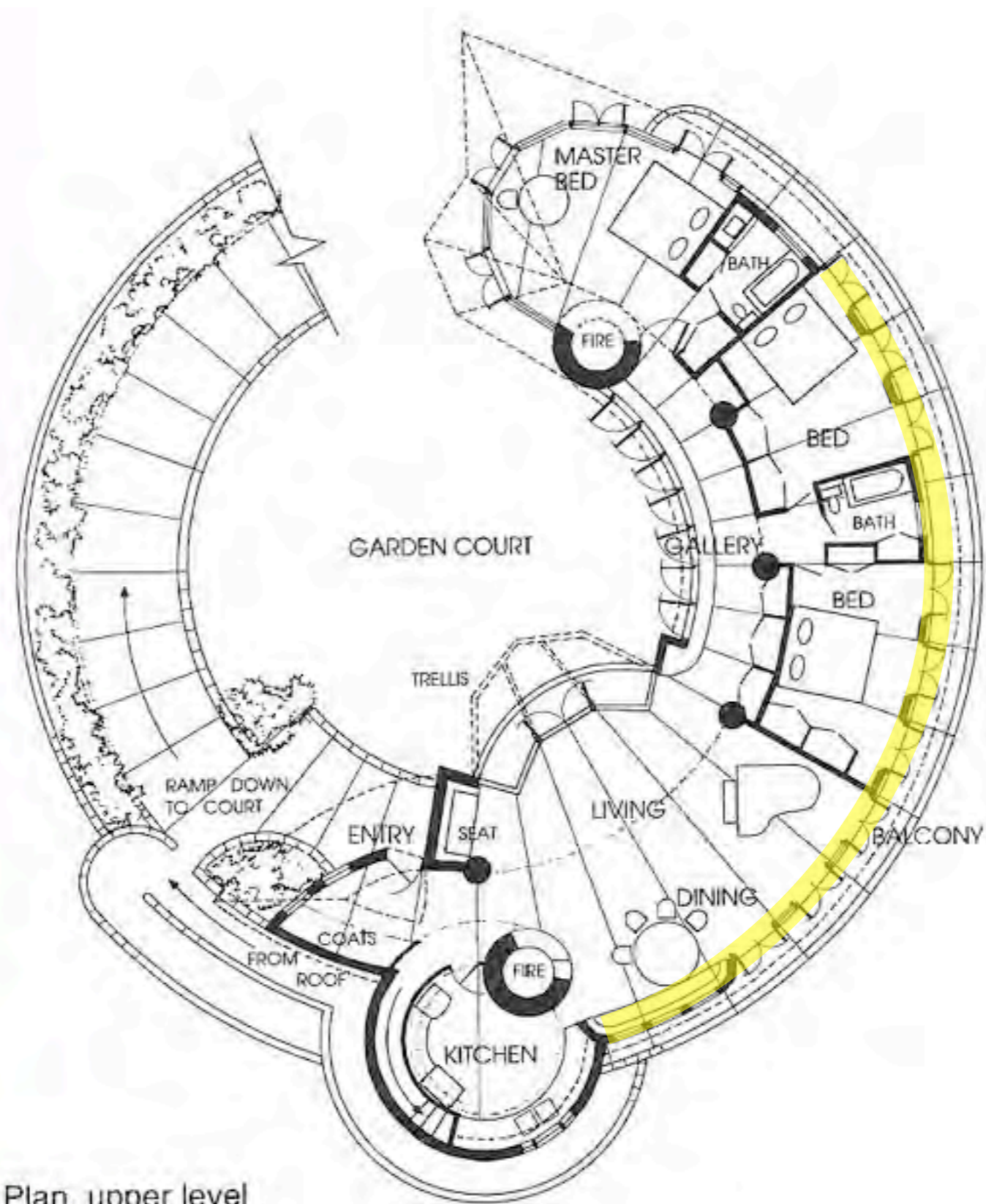
David Wright House
Phoenix, Arizona
Frank Lloyd Wright, 1951



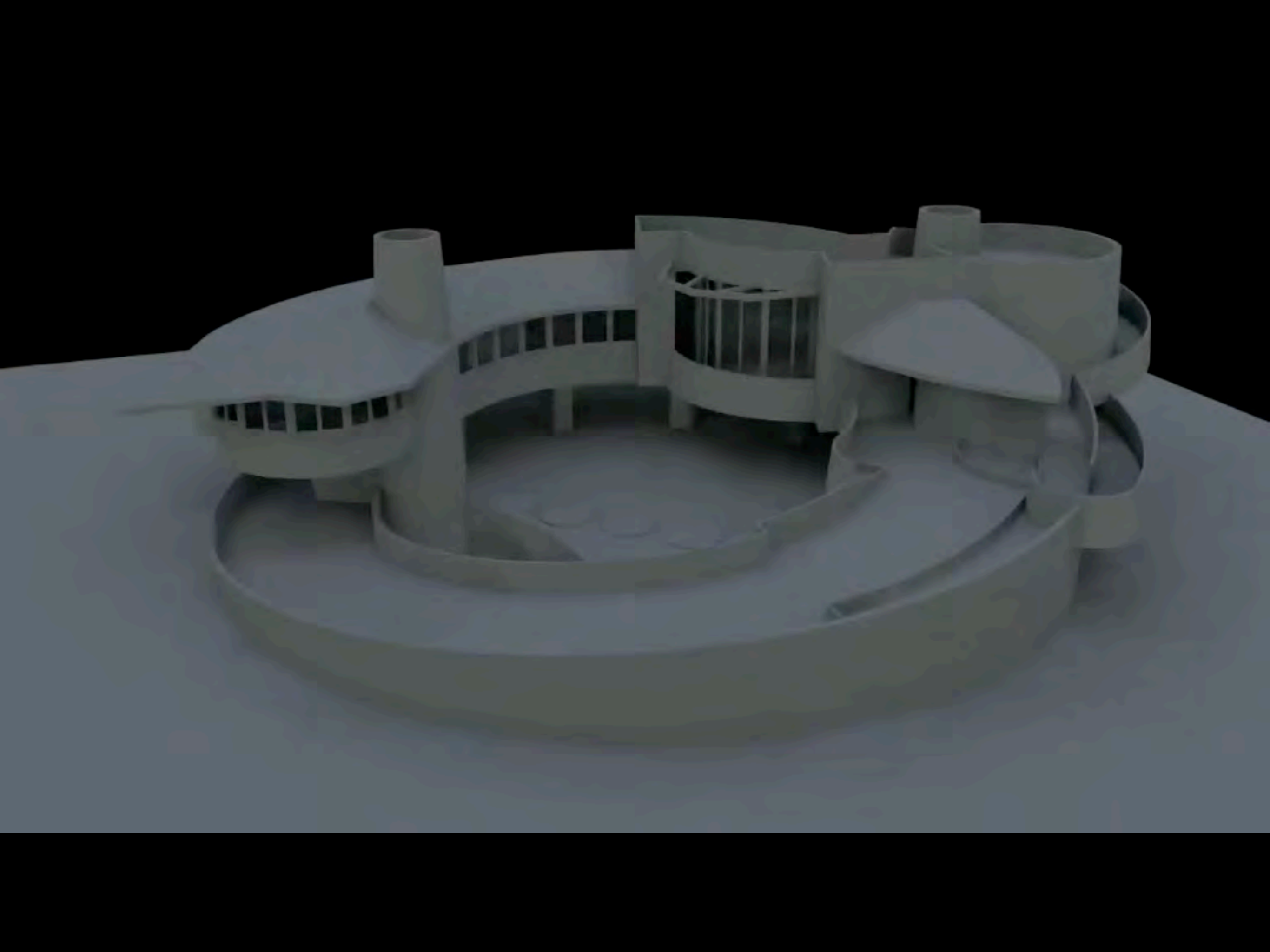
Plan, ground level



Plan, ground level



Plan, upper level






















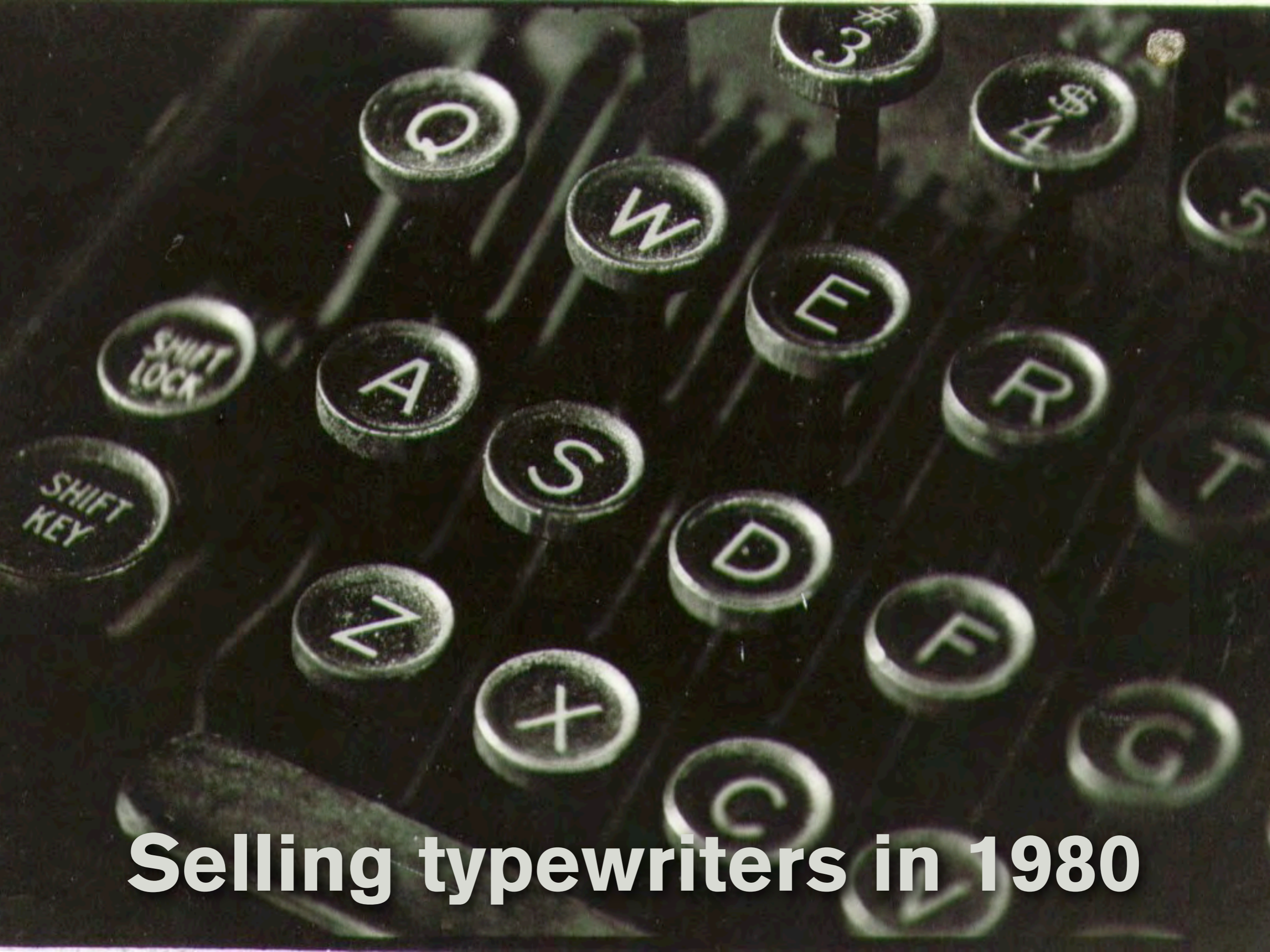


formaldehyde
VOCs
drought
smog
asthma
carbon
mining
pesticides
climate





integrated
holistic
experiential



Selling typewriters in 1980

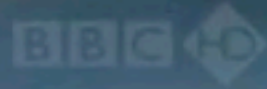


CLIP: Old Spice Commercial (2013)



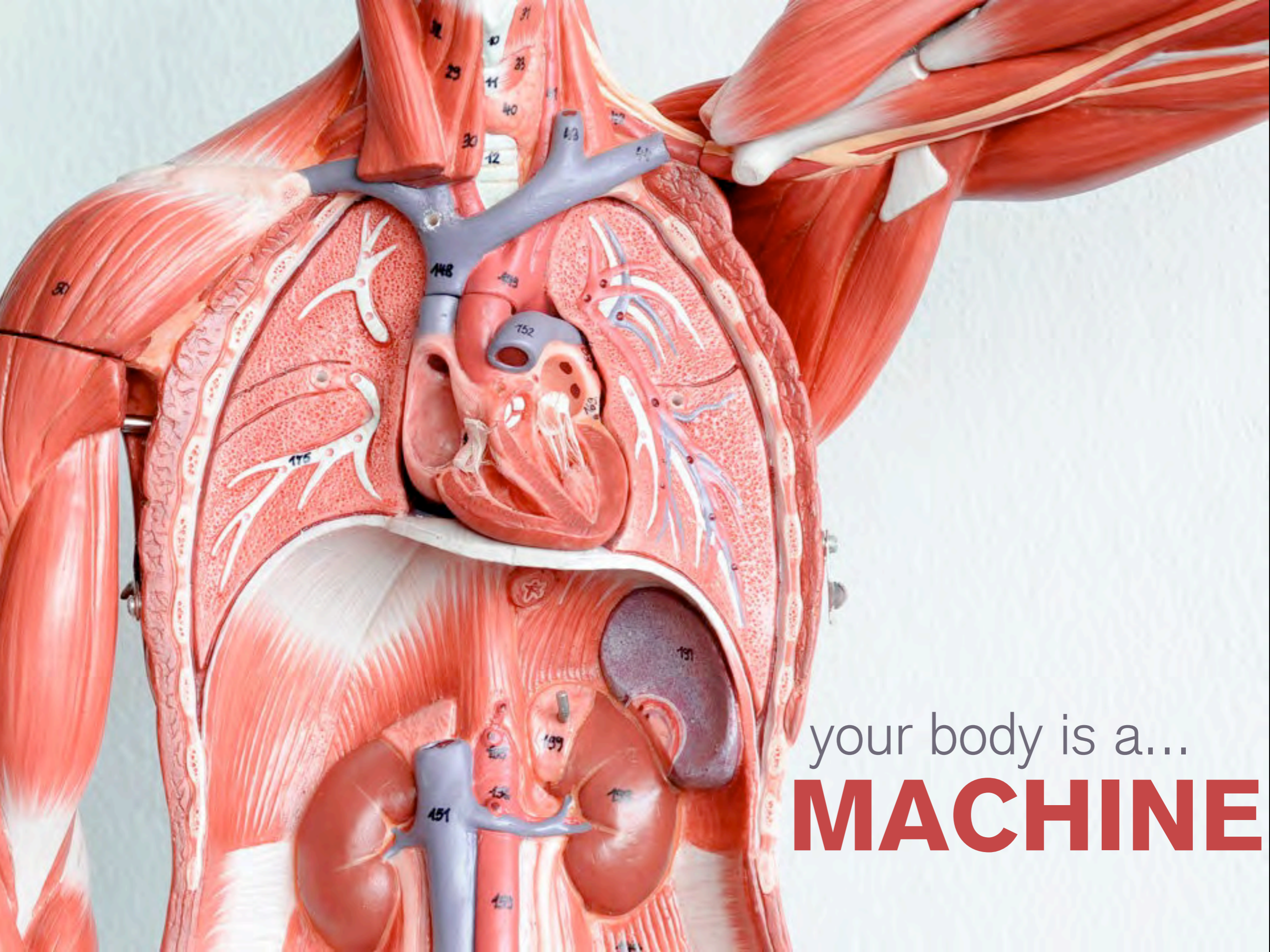






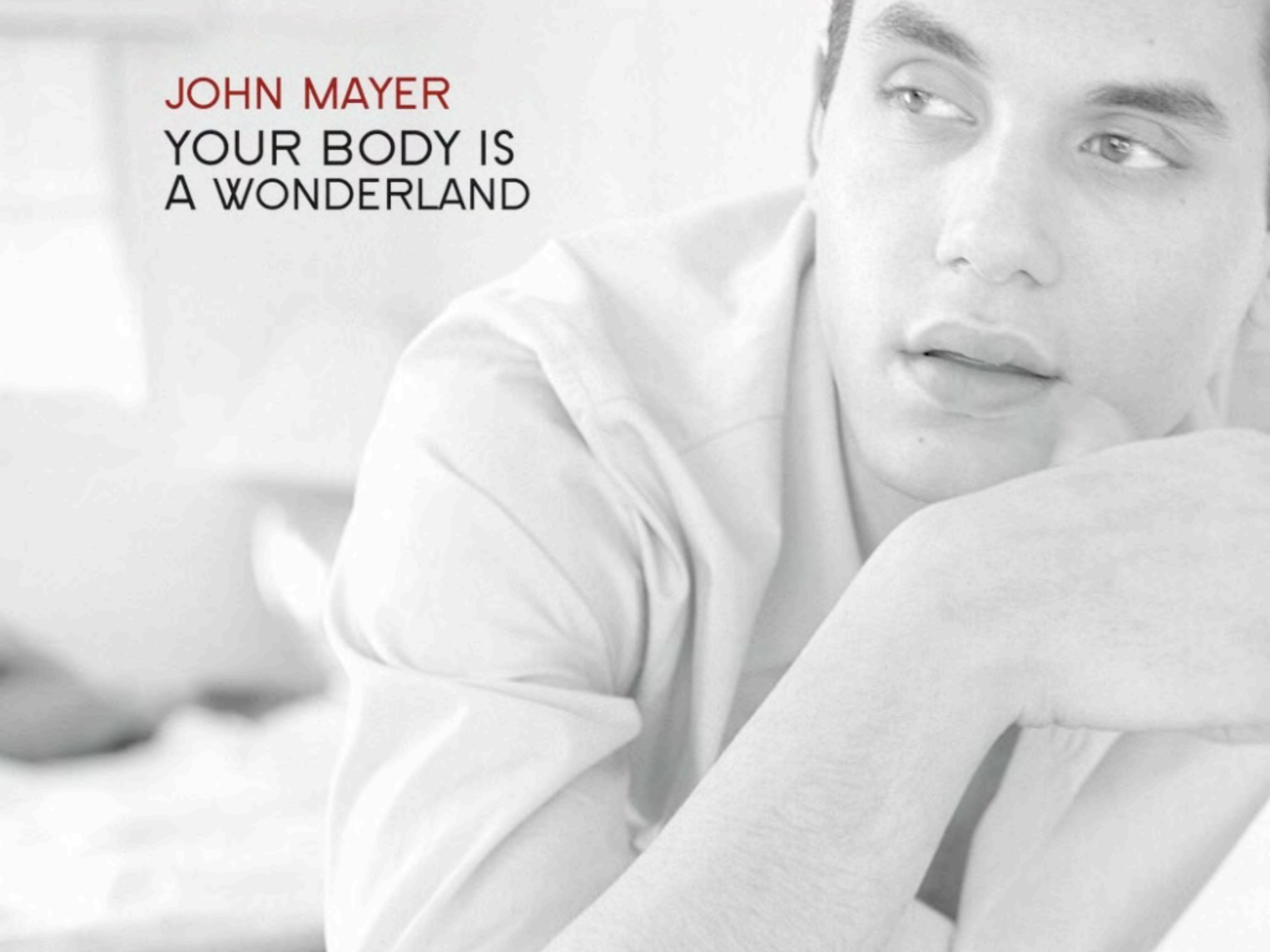
your body is a...

HABITAT



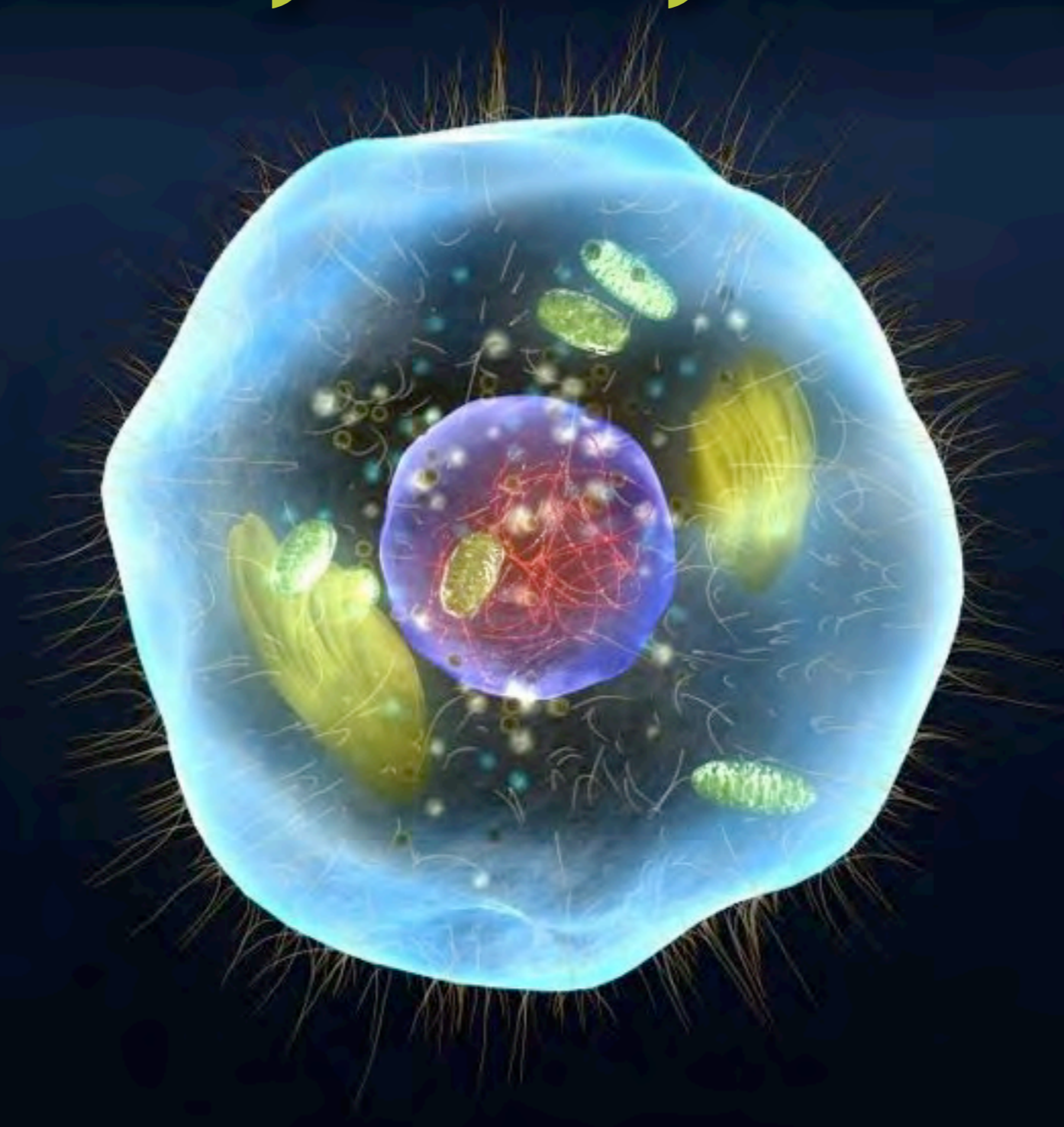
your body is a...
MACHINE

JOHN MAYER
YOUR BODY IS
A WONDERLAND





50,000,000,000,000 cells
per day



ELEVENTH RIB

TWELFTH RIB

TRANSVERSE PROCESSES OF FIRST LUMBAR VERTEBRA

TWELFTH RIB

DIAPHRAGMATIC AREA

DIAPHRAGMATIC AREA

AREA FOR TRANSVERSALIS TENDON

AREA FOR QUADRATUS LUMBORUM

AREA FOR TRANSVERSALIS TENDON

AREA FOR QUADRATUS LUMBORUM

AREA FOR P. SOAS URETER

L. RENAL ARTY.

R. RENAL ARTY.

AREA FOR TRANSVERSALIS TENDON

AREA FOR QUADRATUS LUMBORUM

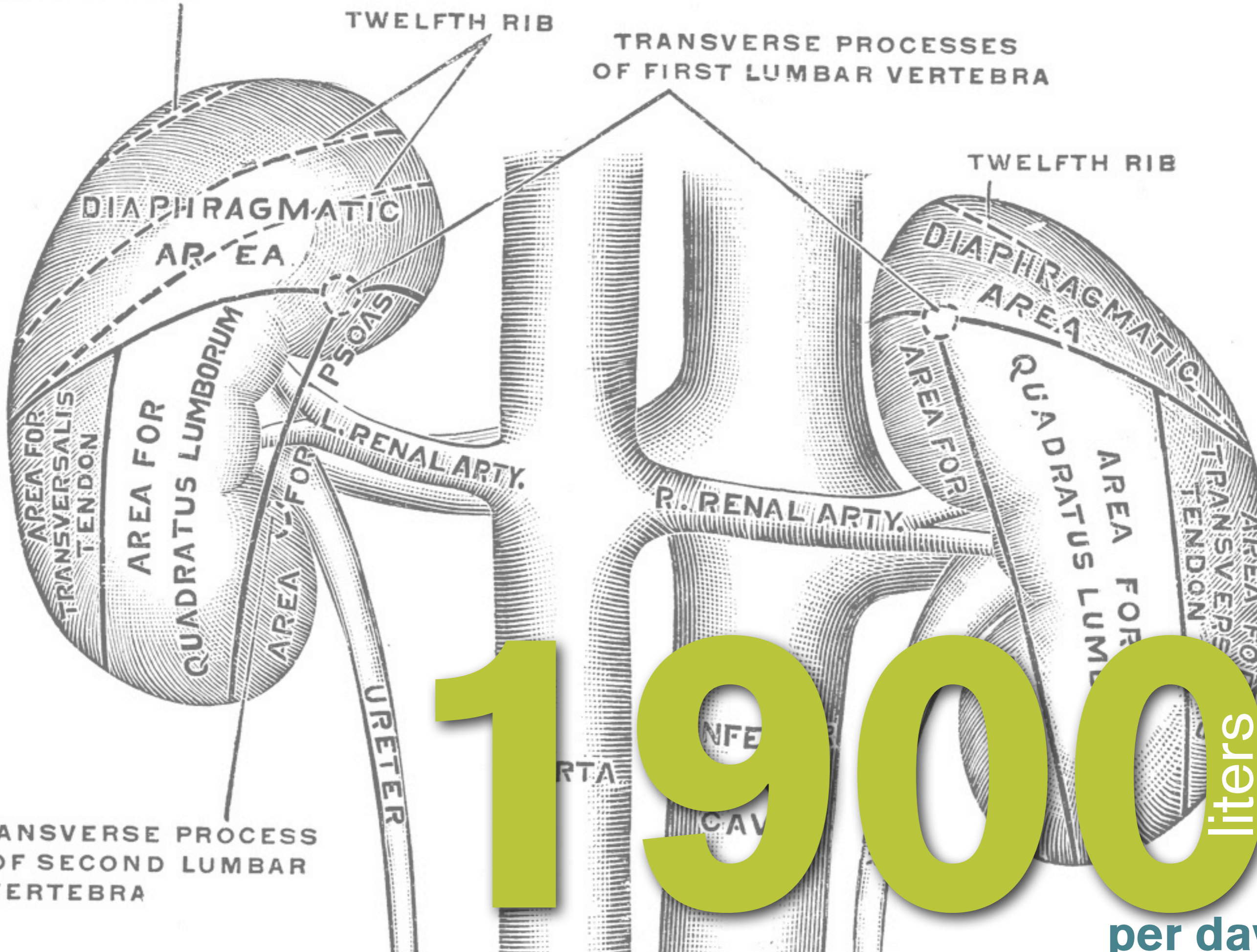
AREA FOR TRANSVERSALIS TENDON

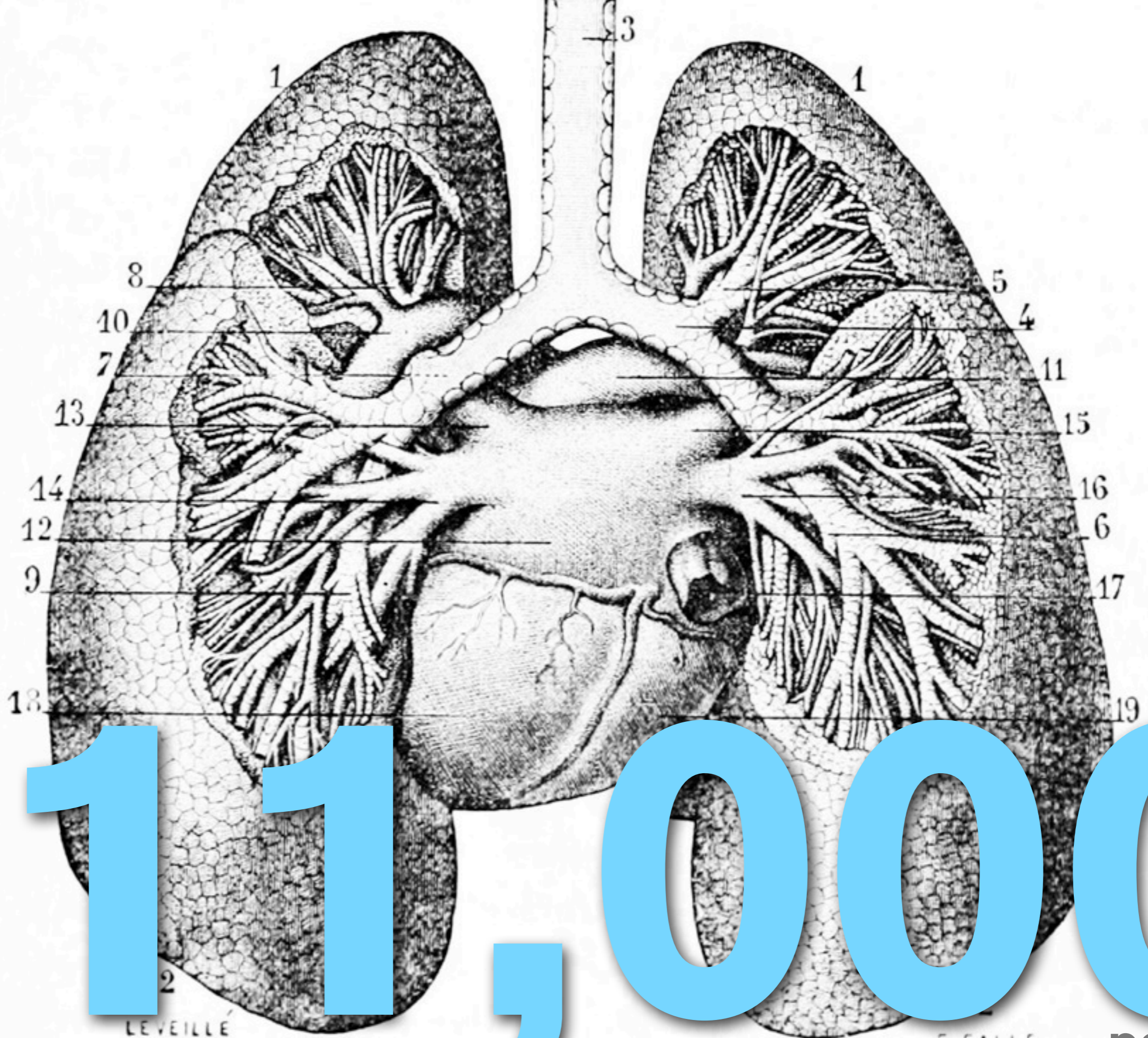
AREA FOR QUADRATUS LUMBORUM

TRANSVERSE PROCESS OF SECOND LUMBAR VERTEBRA

19000 liters

per day

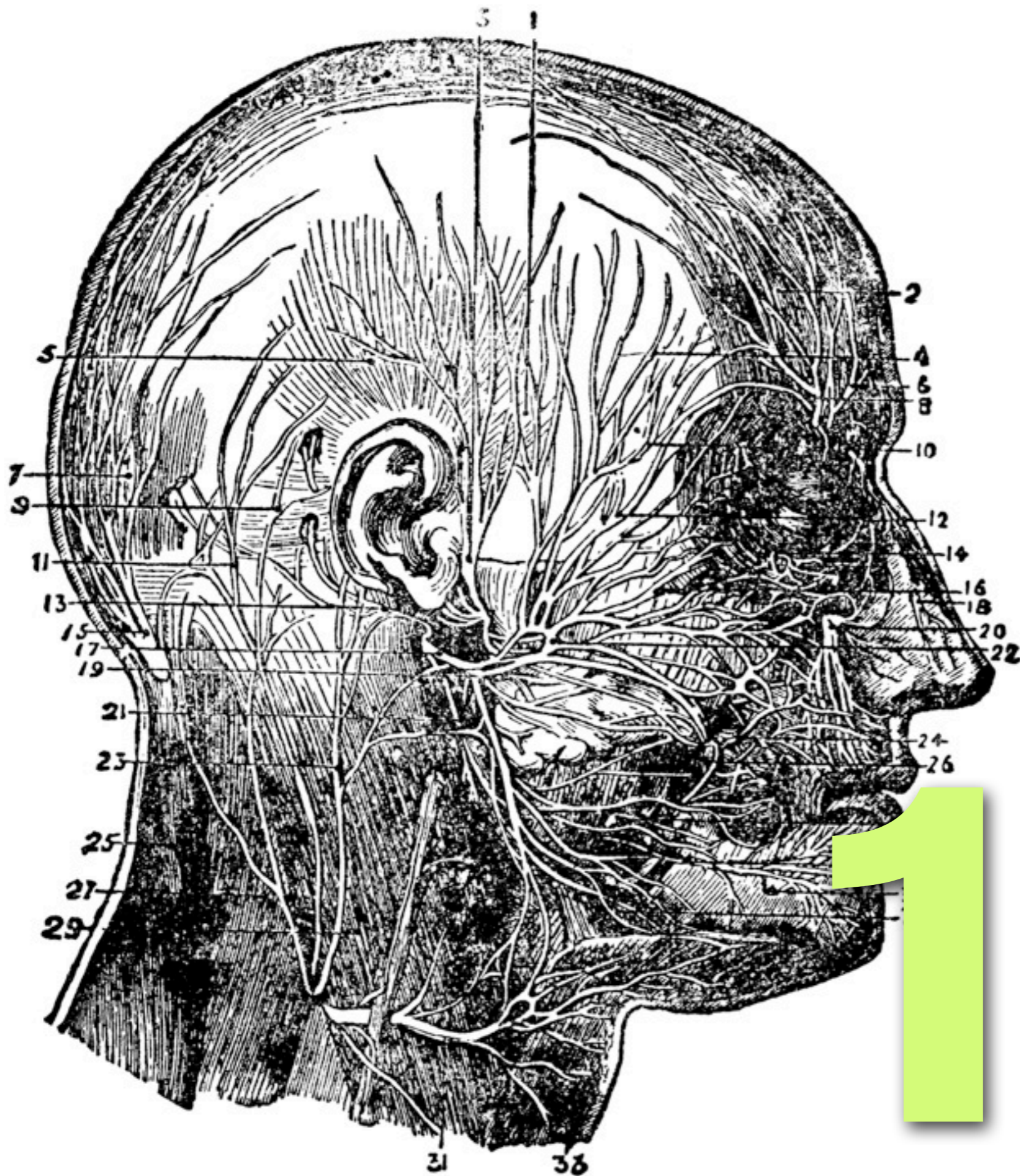




LEVEILLÉ

E. SALLE

11,000 liters per day



170
miles per hour



4X

as much as concrete



20000 watts

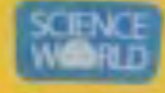


lifetime
50
tons



14
times

YOU FART
A BALLOON'S
WORTH OF GAS
A DAY



We can inspire.

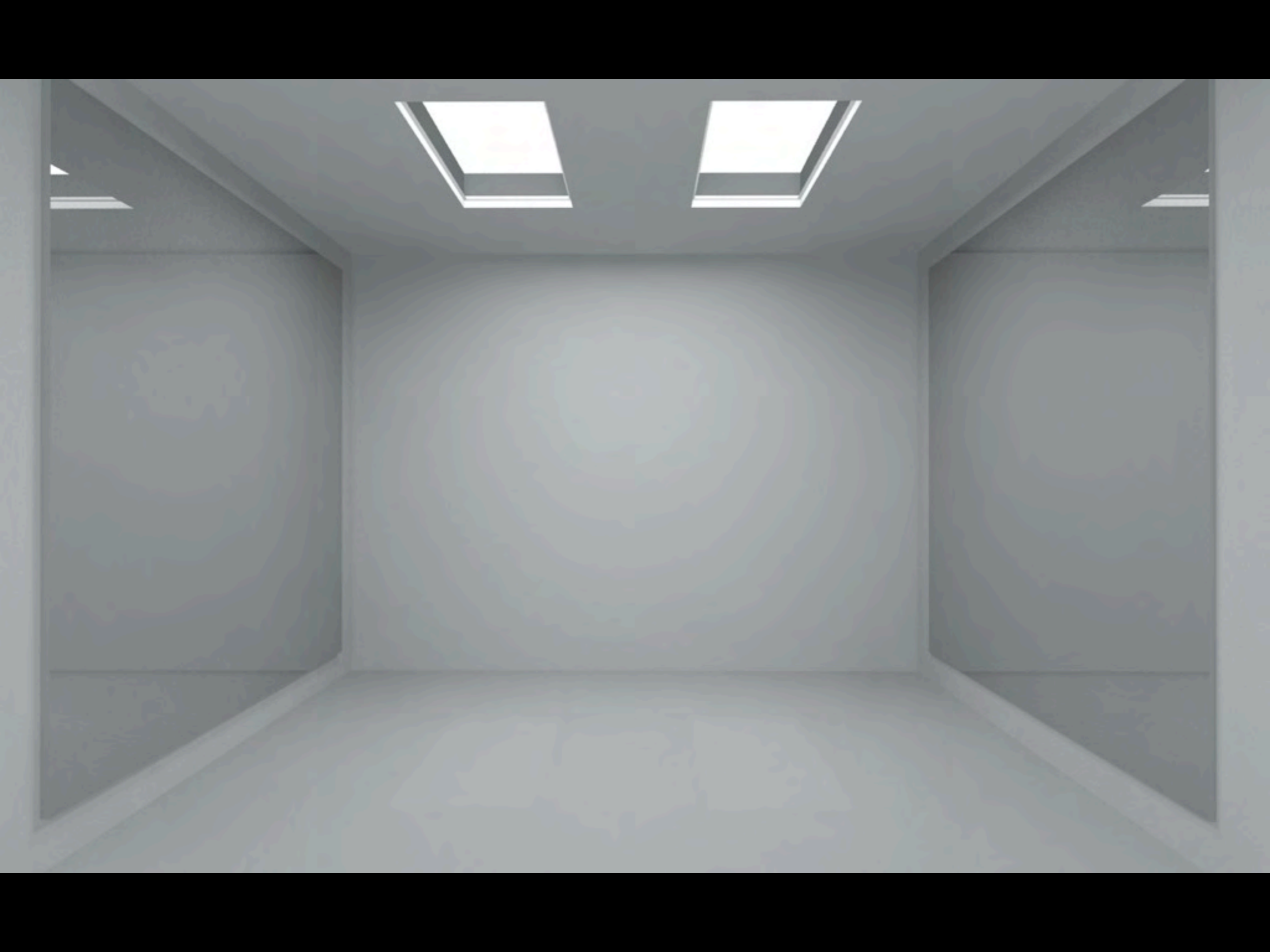






PHOTO: Alex McLean

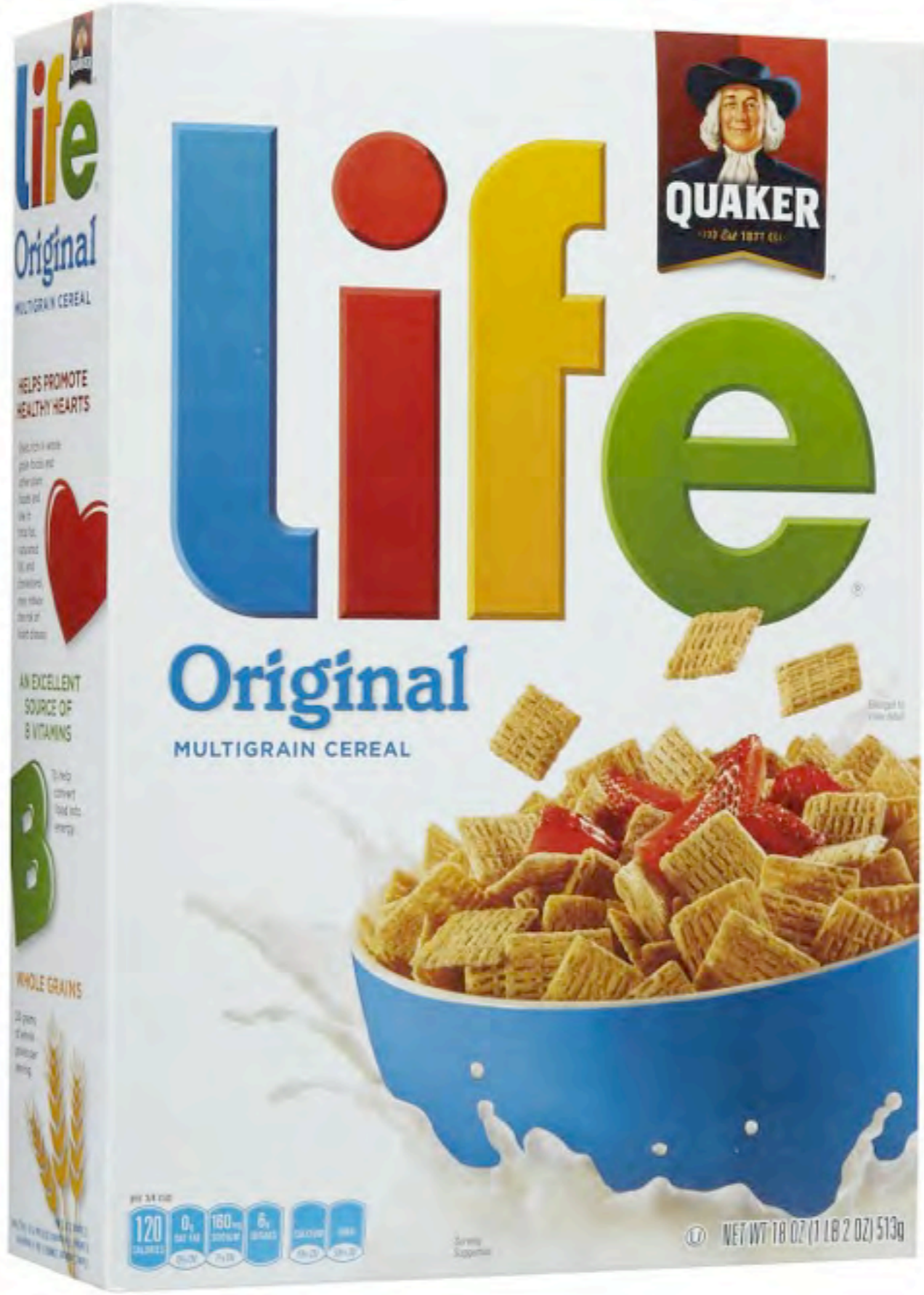




CLIP: The Money Pit (1986)

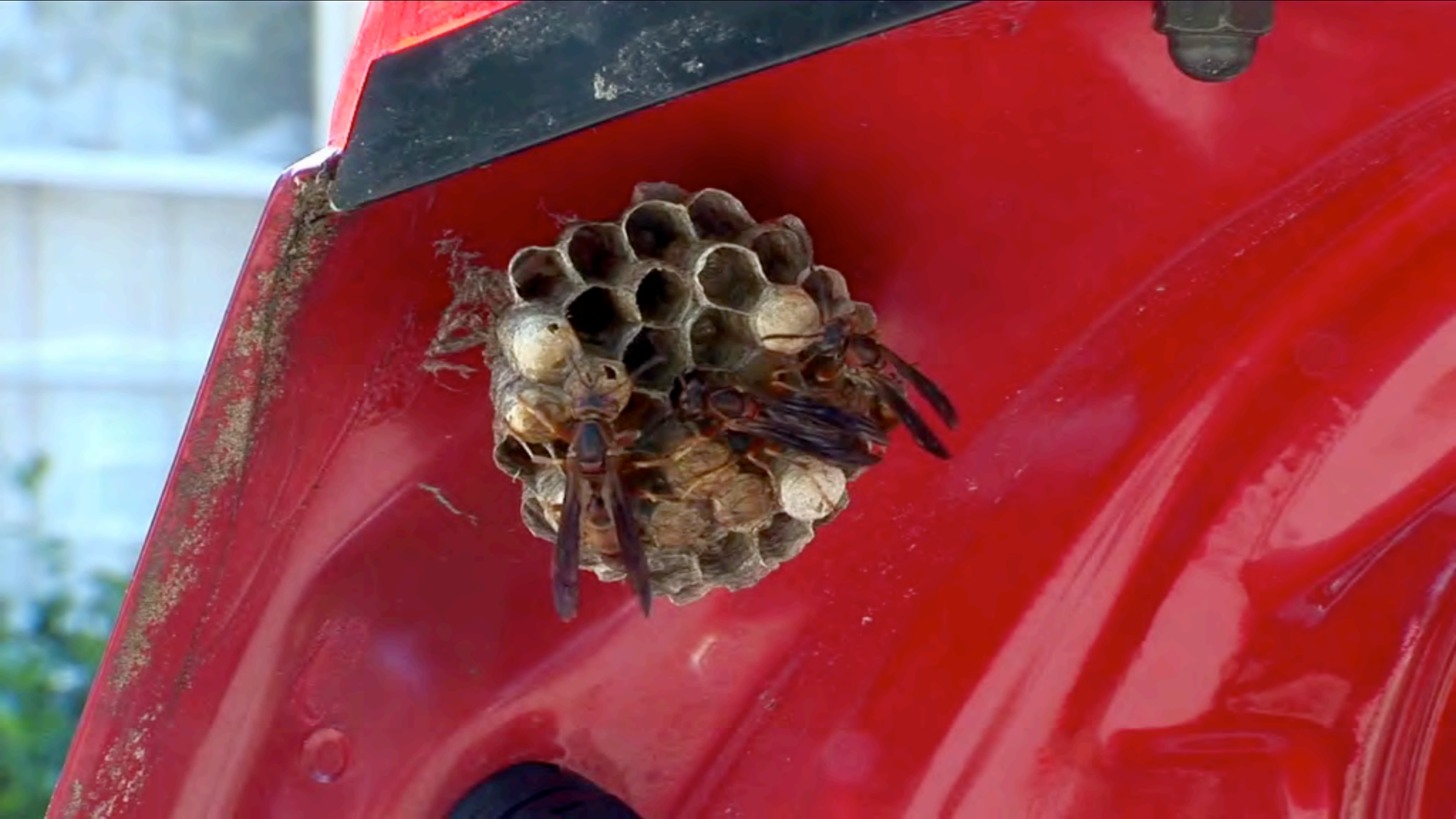






NATURE BY NUMBERS



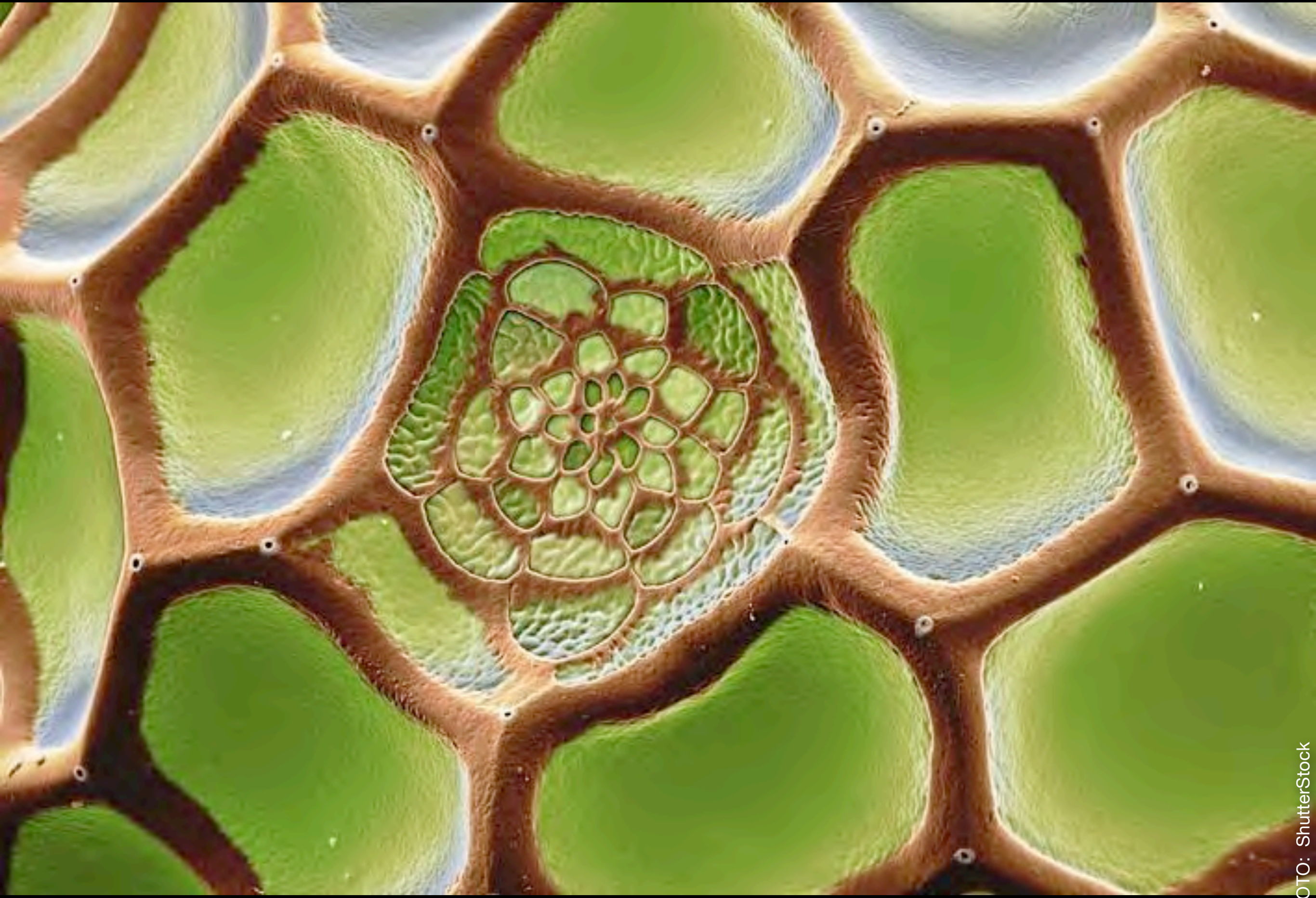






birds already have houses







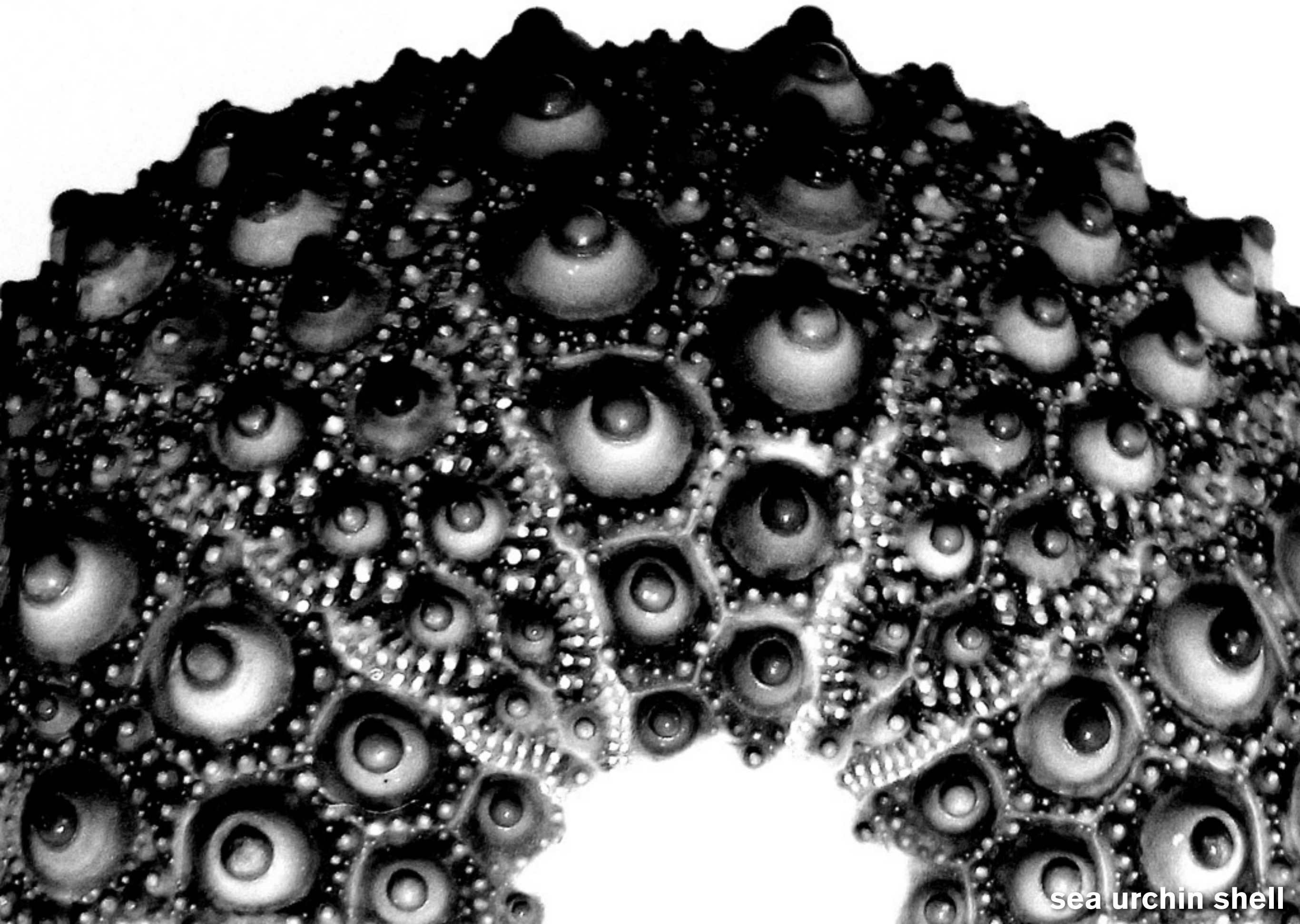












sea urchin shell

3.8 billion years of research and development...













PHOTO: Eric Corey Freed



how humans build





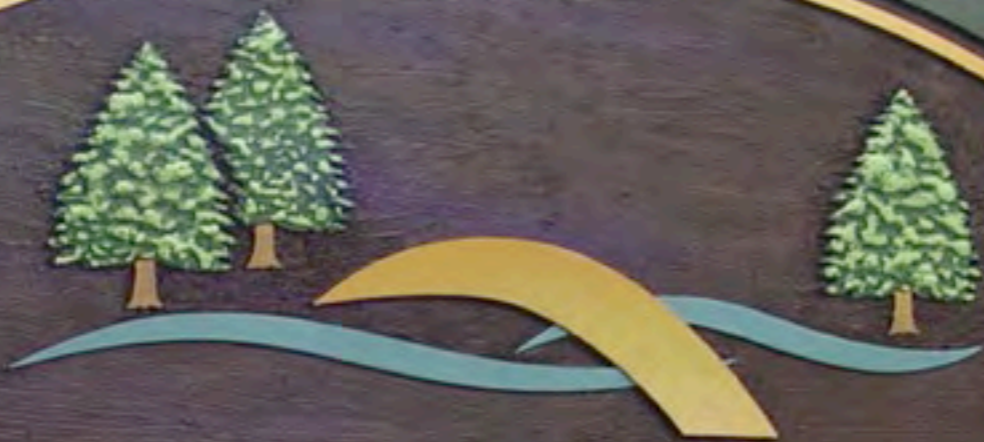
+ ST. GOD'S
MEMORIAL HOSPITAL
LEAVELL







- 550—TREE BEGAN GROWING
- 570—MOHAMMED BORN
- 640—ALEXANDRIAN LIBRARY BURNED
- 732—SARACENS DEFEATED AT TOURS
- 800—CHARLEMAGNE CROWNED
- 896—ALFRED THE GREAT FRAMES LAWS
- 1000—LEIF ERICSON LANDS ON AMERICAN COAST
- 1066—BATTLE OF HASTINGS
- 1147—THE SECOND CRUSADE
- 1215—MAGNA CARTA SIGNED
- 1302—MARINER'S COMPASS IN EUROPE
- 1429—JOAN OF ARC
- 1492—AMERICA DISCOVERED
- 1588—SPANISH ARMADA DESTROYED
- 1620—LANDING OF PILGRIMS
- 1750—FRANKLIN'S DISCOVERIES IN ELECTRICITY
- 1776—DECLARATION OF INDEPENDENCE
- 1815—BATTLE OF WATERLOO
- 1861—CIVIL WAR
- 1891—TREE CUT DOWN



CROSS CREEK

ESTATES

A stone archway with a brick interior. The text "WILD HORSE CANYON" is written in gold, raised letters on the brick. The arch is surrounded by green grass and a bed of colorful flowers (yellow, purple, white, and red) at the bottom.

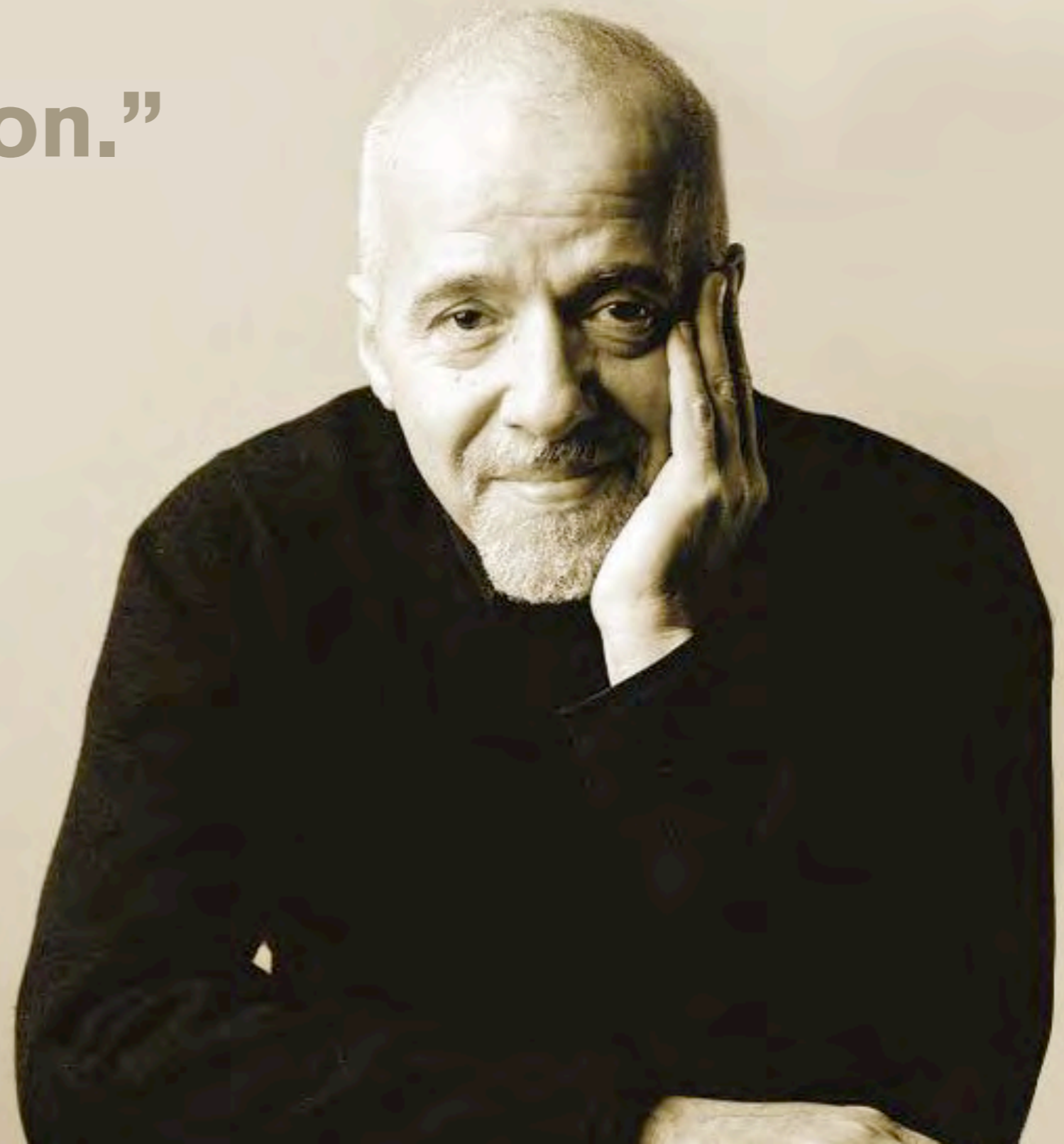
WILD HORSE
CANYON

NO
WIND FARM
- CURLEY

PENISTONE

**“The world is changed
by your example,
not by your opinion.”**

– Paulo Coelho





restore
the
nature
lost



PHOTO: Yves Marchand & Romain Meffre

Regional Chamber of Commerce and Industry
by Charrier-Corbasson Architectes

every building should...

89 035 210



0890352102 034117

MULT BY



04 60206872

Itron **SERVO** **ANEL**® Multimeasurement Meter



MSMT Level 1 FW 3.210

TOU TEST

RECORDER

BIDIRECTION

R300SD

KYZ



LED

USA
A 0.2

CL 20 120V 4WY TA 2.5 Kh 1.8

METER TYPE S9SSRD FM 9S 60 Hz

FCC ID: F9CR300S-1

GENERATE
your own energy



GROW
your own food



PROCESS

your own waste





CLEAN
your own water

30

SEQUESTER

your own
carbon

89 035 210



0890352102 034117

MULT BY



04 60206872

Itron **SERVO** **ANEL**® Multimeasurement Meter



MSMT Level 1 FW 3.210

TOU TEST

RECORDER

BIDIRECTION

R300SD

KYZ



LED

USA
A 0.2

CL 20 120V 4WY TA 2.5 Kh 1.8

METER TYPE S9SSRD FM 9S 60 Hz

FCC ID: F9CR300S-1

GENERATE
your own energy



ARTIST: Lui Bolin

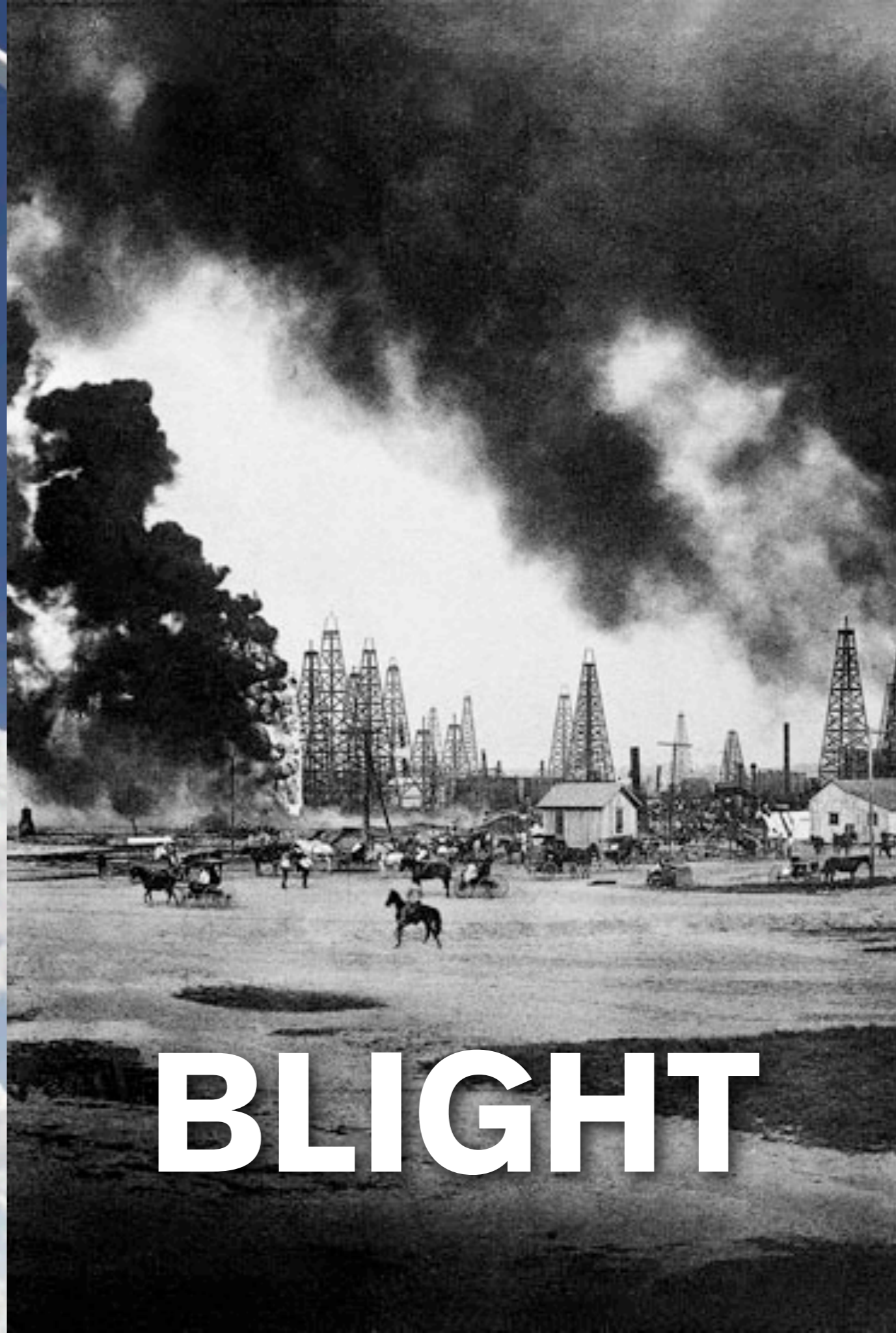


20,000,000 horsepower









BLIGHT

IN OIL WE TRUST

DOMINO



**soil
more important
than oil**



Model#SU-3E-00
FCC: AQC-SU3E00
IC: 10138A-SU3E00
enlighted
UL US LISTED
Open Energy Management Equipment 3WG4
Elec 12-30VDC 150mW Class 2
enlightedinc.com



GROW
your own food





CLIP: Willy Wonka & the Chocolate Factory (1971)



Will work for
Balsamic
Vinegar







Marlboro



CROW FOODS
INCORPORATED













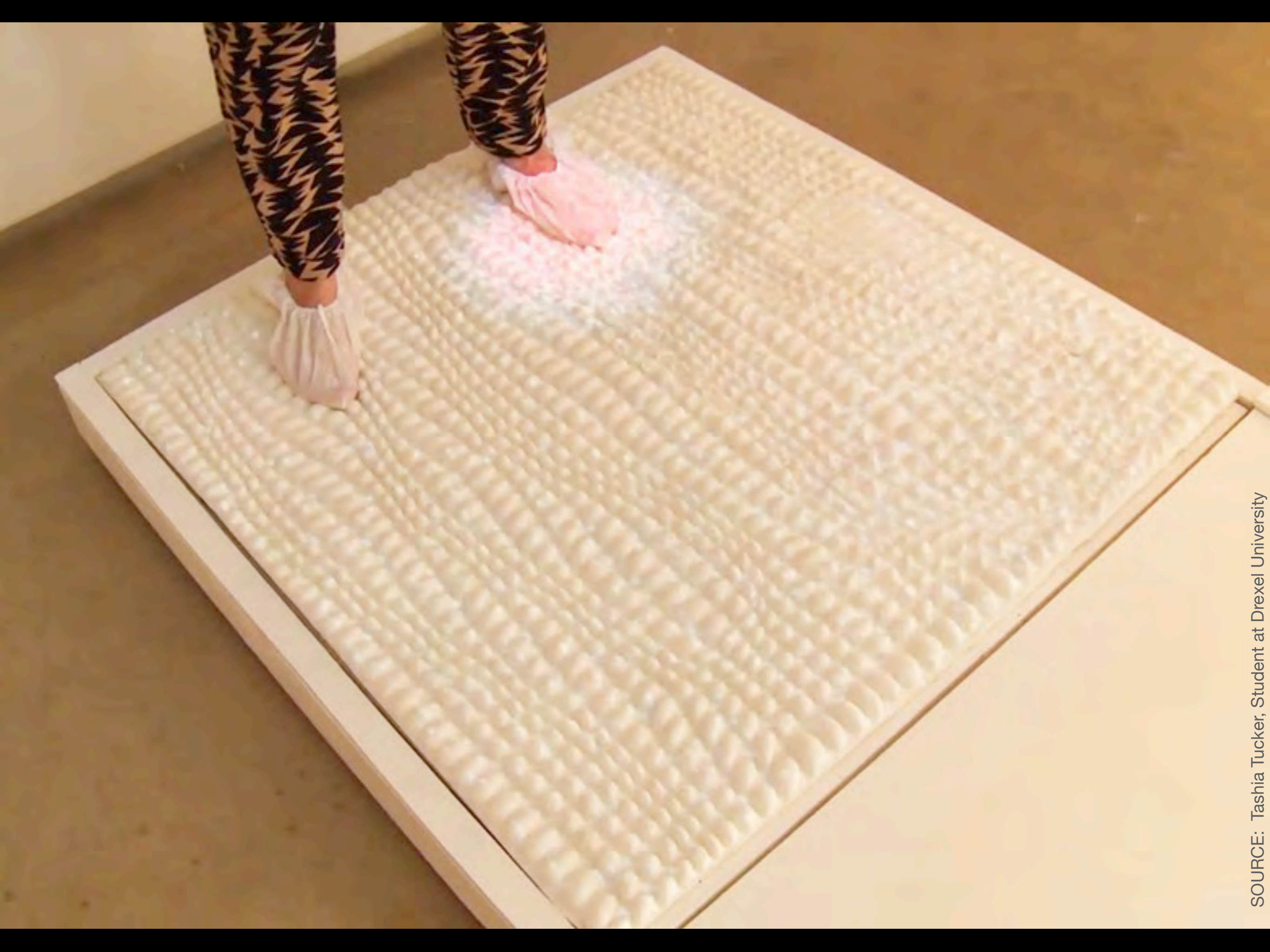


PROCESS

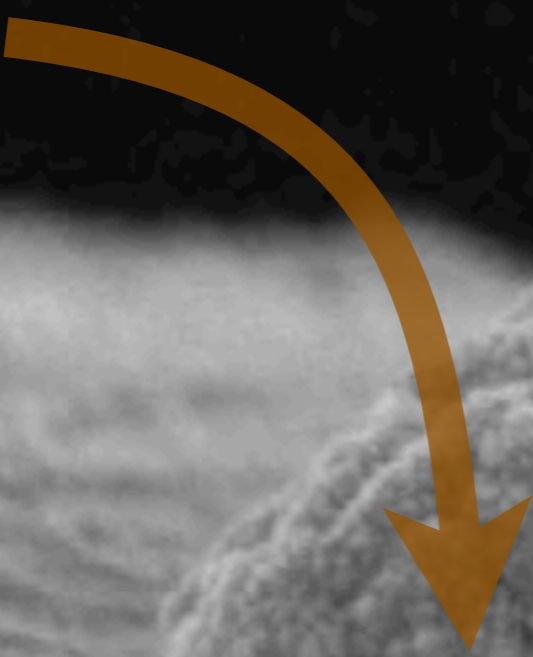
your own waste







waste



energy

200 nm








ReWalt





CLEAN
your own water





7

Solar PV

H2 Fuel Cells

Living Walls

Bio-Remediation

**Law
Gar**



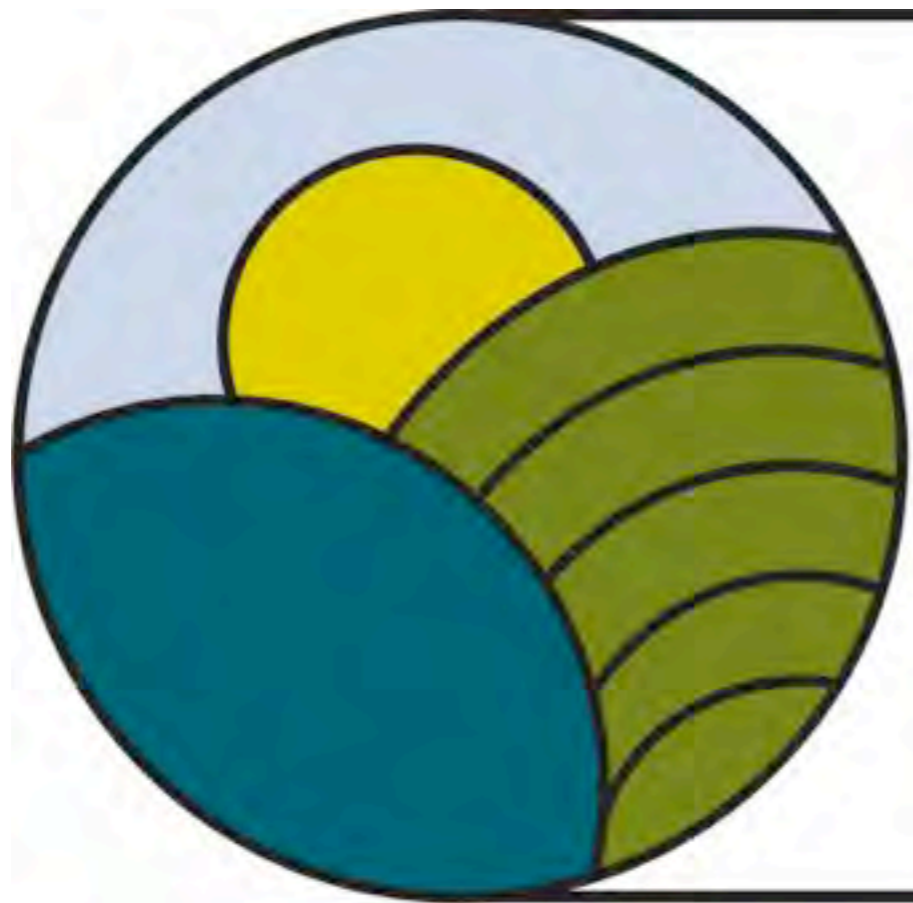
ECOR

25% OCC 75% RECYCLED PACKAGING

33.3% OCC 66.6% ONP

100% RECYCLED OFFICE PAPER

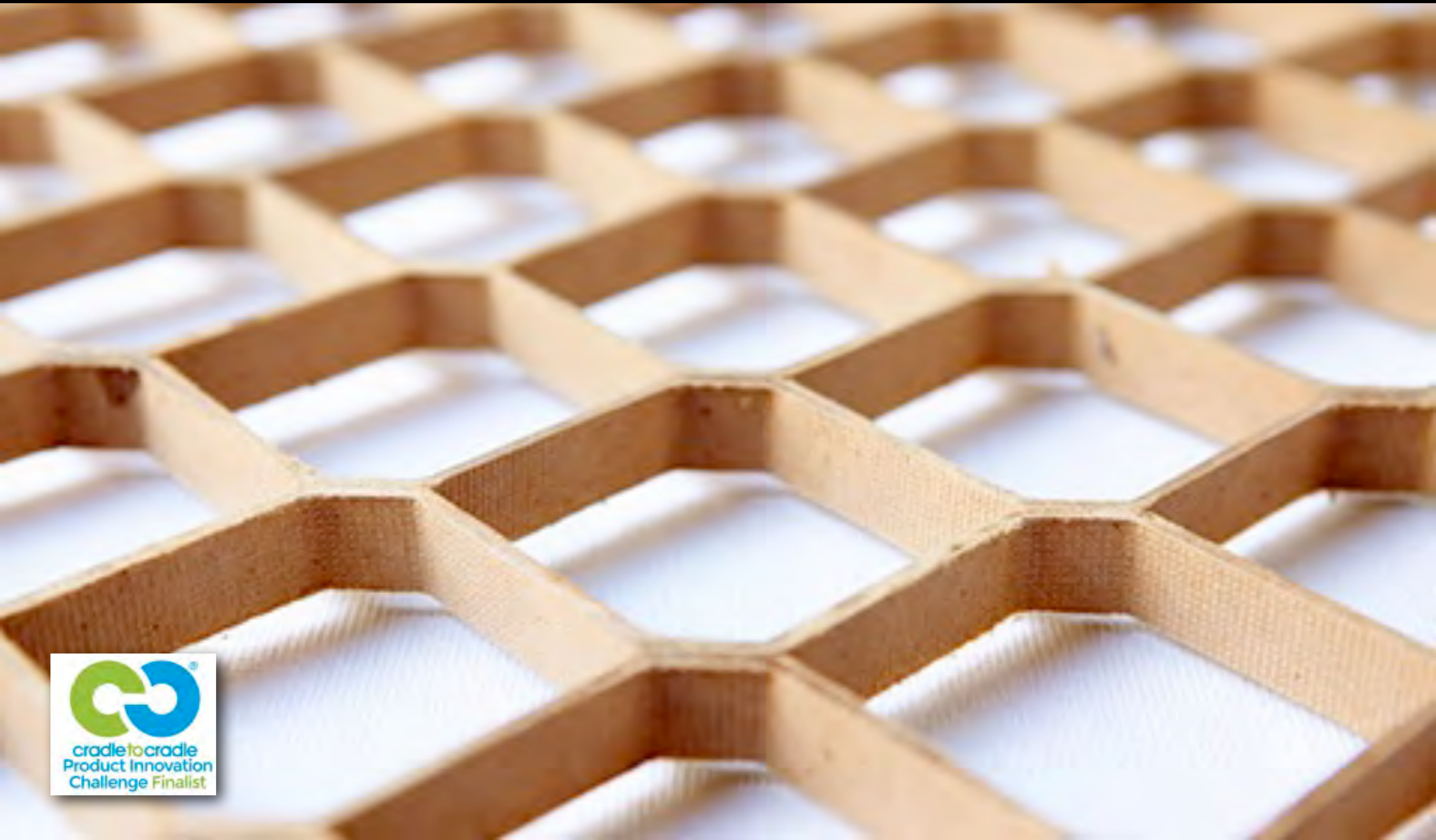
100% OCC



**USDA
CERTIFIED
BIOBASED
PRODUCT**

PRODUCT 100%

PRODUCT 100%







30

SEQUESTER

your own
carbon





**BIQ House
Splitterwerk
Arup**

SOURCE: Wired



BIQ House
Splitterwerk
Arup

Now with fresh oxygen.



donovan
Get intimate.

One bdrm to 2+den residences & Cityhomes

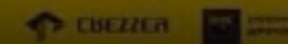
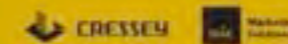
NOW SELLING

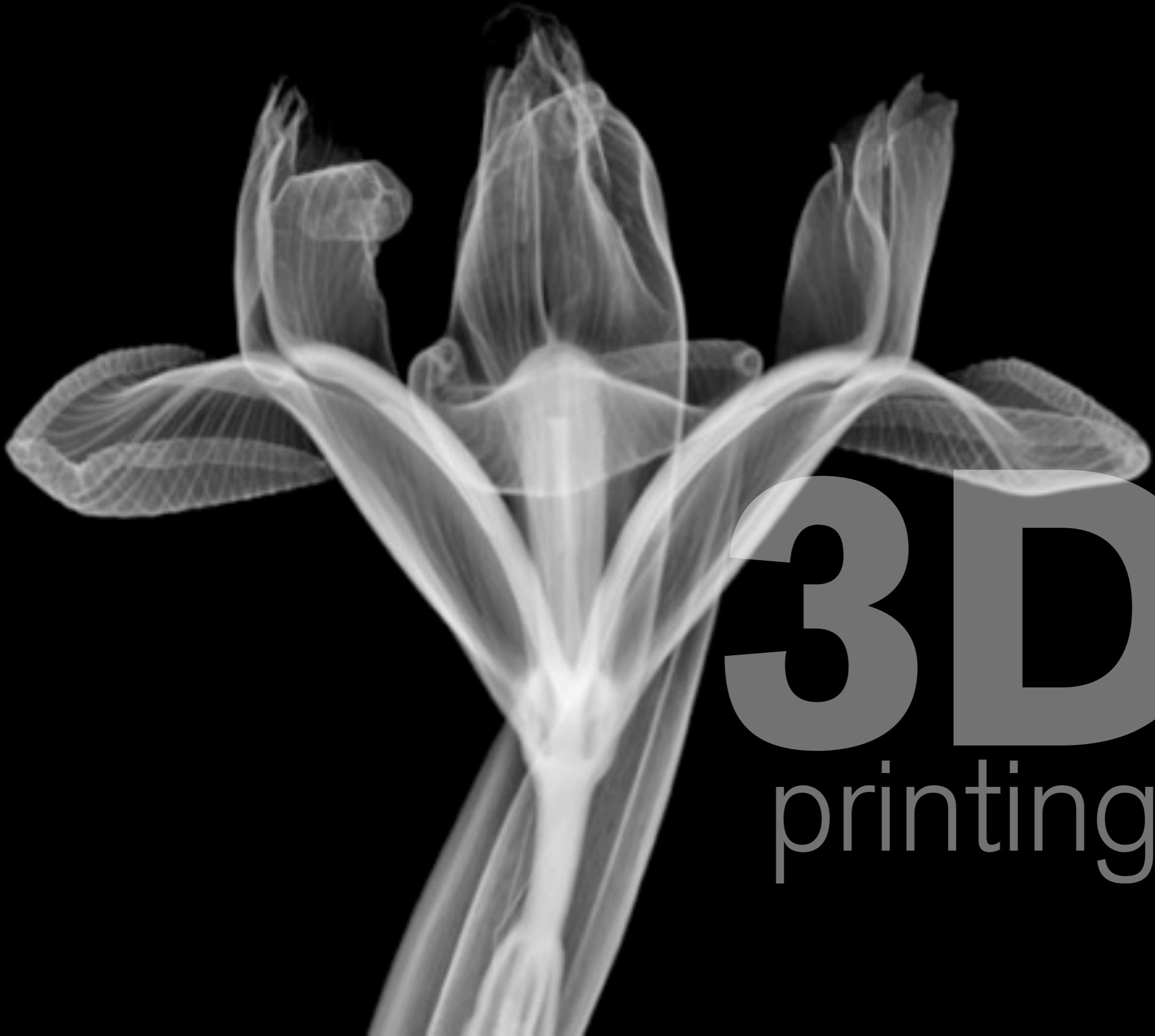
Open 12-5pm daily (closed Friday)

donovanlife.com ■ 604.696.9030

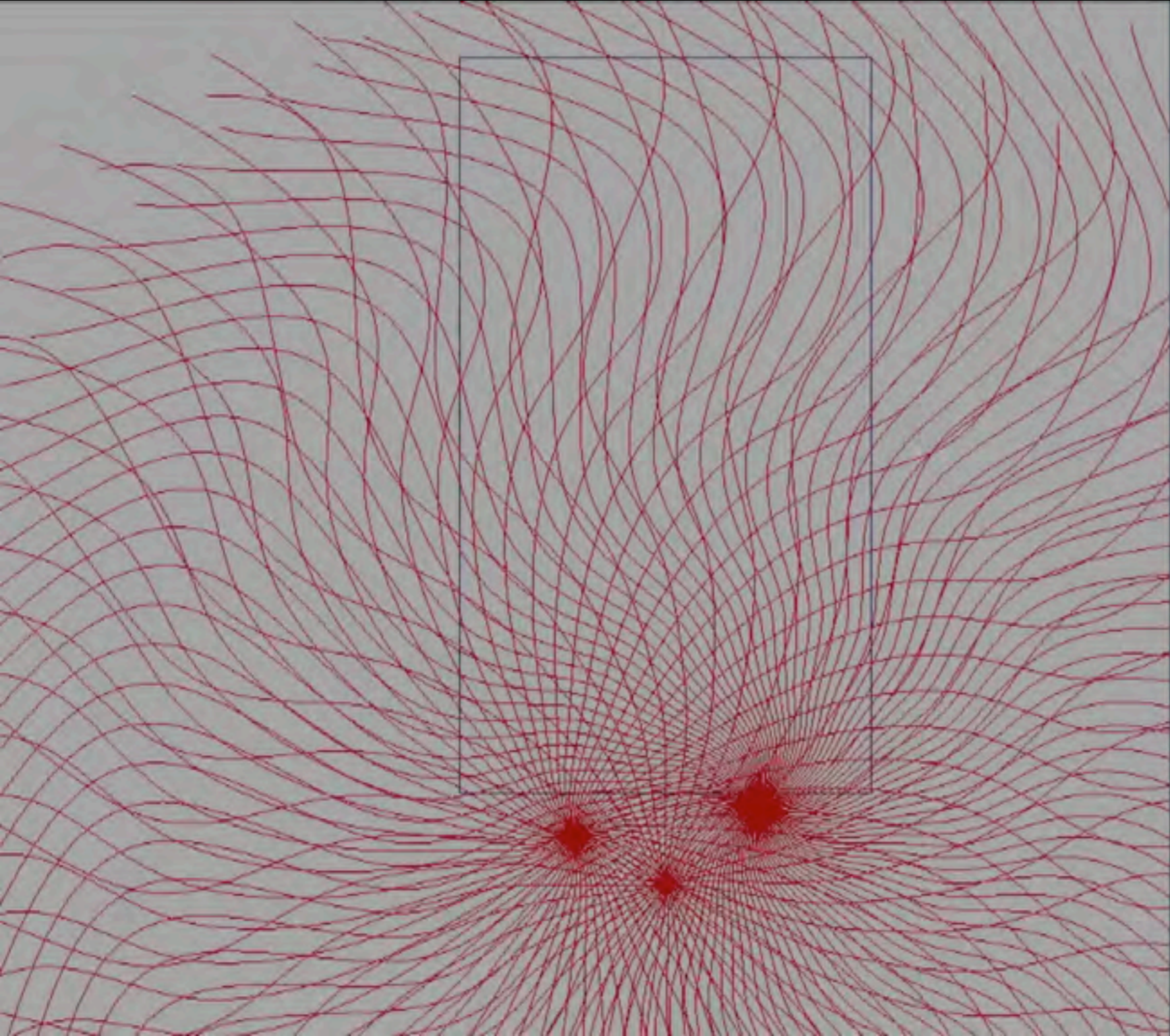
PRESENTATION CENTRE
1295 Seymour Street
(Seymour & Drake)

BRANTFORD ST				
SEYMOUR ST	IF HAY	IF KENNEDY	IF DONOVAN	IF BOSTON
RICHARDS ST				
ROWER ST				





3D printing



Slider 61

Slider 44

Slider 96



5 PRINTERS





THE EDGE ENTIRELY IS PRINTED FROM

SOURCE: digital-grotesque.com

Architects:
Michael Hansmeyer
Benjamin Dillenburger





Designer:
Erik Klarenbeek

BLOKIFY

Creating is as easy as playing.





# Segments	<input type="range"/>	16
# Sides	<input type="range"/>	8
Base Size	<input type="range"/>	5
Height	<input type="range"/>	12
Thickness	<input type="range"/>	0.7
Taper	<input type="range"/>	-0.89
Twist	<input type="range"/>	32
Wave Frequency	<input type="range"/>	3.59
Wave Amplitude	<input type="range"/>	0.5
Wave Offset	<input type="range"/>	0
Closed Bottom	<input type="checkbox"/>	OFF
Lip	<input type="checkbox"/>	OFF
Color	<input type="color"/>	#a97aff
* Advanced Controls		
Twist Growth	<input type="range"/>	0.48
Ripple Angle	<input type="range"/>	3.14
Ripple Step	<input type="range"/>	2
Close Controls		





# Segments	<input type="range" value="16"/>	16
# Sides	<input type="range" value="8"/>	8
Base Size	<input type="range" value="5"/>	5
Height	<input type="range" value="12"/>	12
Thickness	<input type="range" value="0.7"/>	0.7
Taper	<input type="range" value="-0.79"/>	-0.79
Twist	<input type="range" value="32"/>	32
Wave Frequency	<input type="range" value="3.59"/>	3.59
Wave Amplitude	<input type="range" value="0.5"/>	0.5
Wave Offset	<input type="range" value="0"/>	0
Closed Bottom	<input type="checkbox"/> OFF	
Lip	<input type="checkbox"/> OFF	
Color	<input type="color" value="#a97aff"/>	#a97aff
* Advanced Controls		
Twist Growth	<input type="range" value="0.48"/>	0.48
Ripple Angle	<input type="range" value="3.14"/>	3.14
Ripple Step	<input type="range" value="2"/>	2
Close Controls		





# Segments	<input type="range"/>	16
# Sides	<input type="range"/>	8
Base Size	<input type="range"/>	5
Height	<input type="range"/>	12
Thickness	<input type="range"/>	0.7
Taper	<input type="range"/>	-0.59
Twist	<input type="range"/>	32
Wave Frequency	<input type="range"/>	3.59
Wave Amplitude	<input type="range"/>	0.5
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Ripple Angle	<input type="range"/>	3.14
Ripple Step	<input type="range"/>	2
Close Controls		





# Segments	<input type="range" value="16"/>	16
# Sides	<input type="range" value="8"/>	8
Base Size	<input type="range" value="5"/>	5
Height	<input type="range" value="12"/>	12
Thickness	<input type="range" value="0.7"/>	0.7
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Twist	<input type="range" value="32"/>	32
Wave Frequency	<input type="range" value="3.59"/>	3.59
Wave Amplitude	<input type="range" value="0.5"/>	0.5
Wave Offset	<input type="range" value="0"/>	0
Closed Bottom	<input type="checkbox"/> OFF	
Lip	<input type="checkbox"/> OFF	
Color	<input type="color" value="#a97aff"/>	#a97aff
* Advanced Controls		
Twist Growth	<input type="range" value="0.48"/>	0.48
Ripple Angle	<input type="range" value="3.14"/>	3.14
Ripple Step	<input type="range" value="2"/>	2
Close Controls		





“A
chicken in every pot and
a car in
the garage.”

– Herbert Hoover, 1928



“An organic, hormone-free
chicken in every pot and
a zero-emission plug-in for
the garage.””

– Herbert Hoover, 2014

SECOND BILL OF RIGHTS

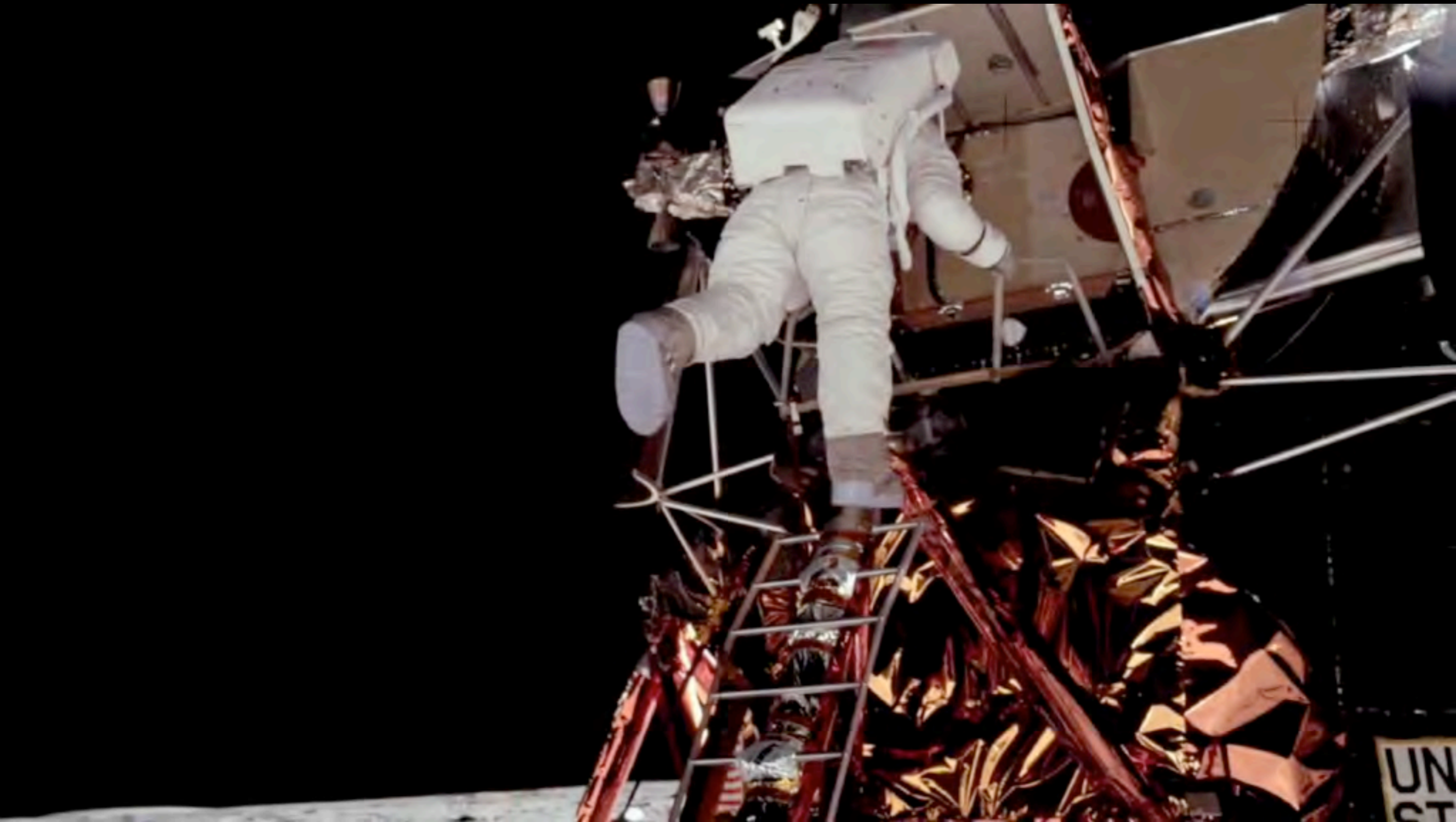
EVERY AMERICAN HAS THE RIGHT TO:

- 1. A JOB**
- 2. AN ADEQUATE WAGE AND DECENT LIVING**
- 3. A DECENT HOME**
- 4. MEDICAL CARE**
- 5. ECONOMIC PROTECTION DURING SICKNESS,
ACCIDENT, OLD AGE OR UNEMPLOYMENT**
- 6. A GOOD EDUCATION**

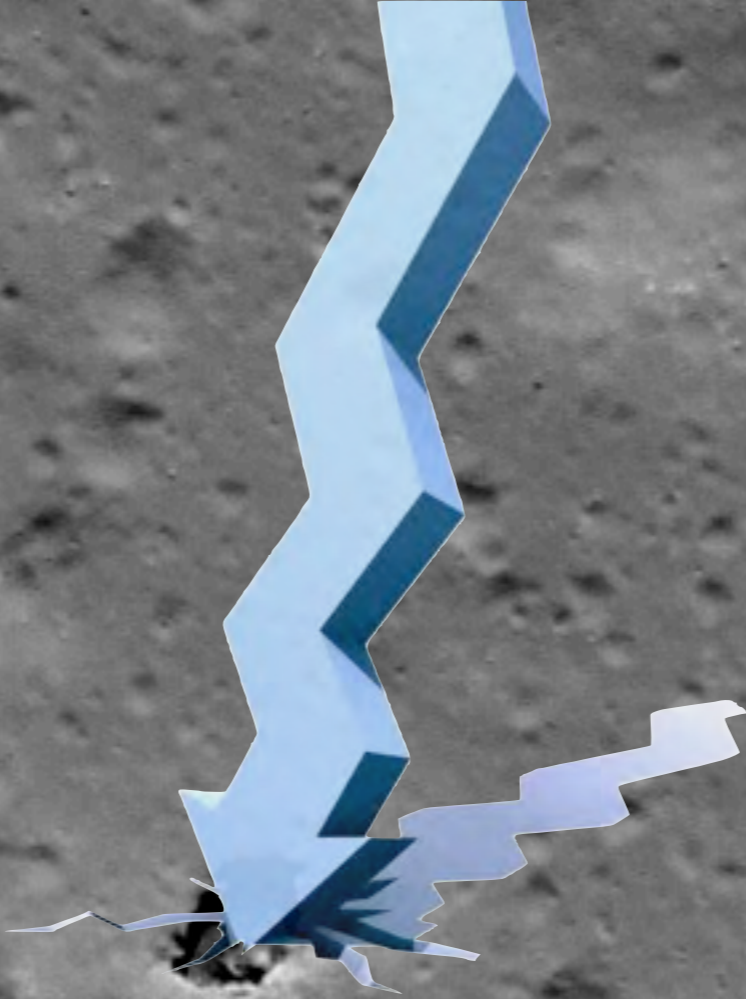
- FDR, January 1944

**“The establishment of
an American standard of living
higher than ever before known.”**





Apollo 11
July 20, 1969, 3:18pm ET



DECLINE

A black and white photograph of coal miners in a dark, underground tunnel. The miners are wearing hard hats and heavy clothing. The scene is dimly lit, with a single light source visible on the right side of the frame.

**Coal peaked in Great Britain
1918**

A color photograph of a gas station during a crisis. A large wooden sign in the foreground reads "PUMPS CLOSED" in hand-painted letters. In the background, several Shell gas pumps are visible, but they appear to be inoperable. The scene is set in a desert-like environment.

**Oil peaked in the US
1970**

A color photograph showing a soldier in the foreground, wearing a green tactical vest and holding a rifle. In the background, a large explosion is occurring in a desert landscape, with a massive fireball and thick black smoke rising into the sky.

**Oil peaked in Saudi Arabia
2003**



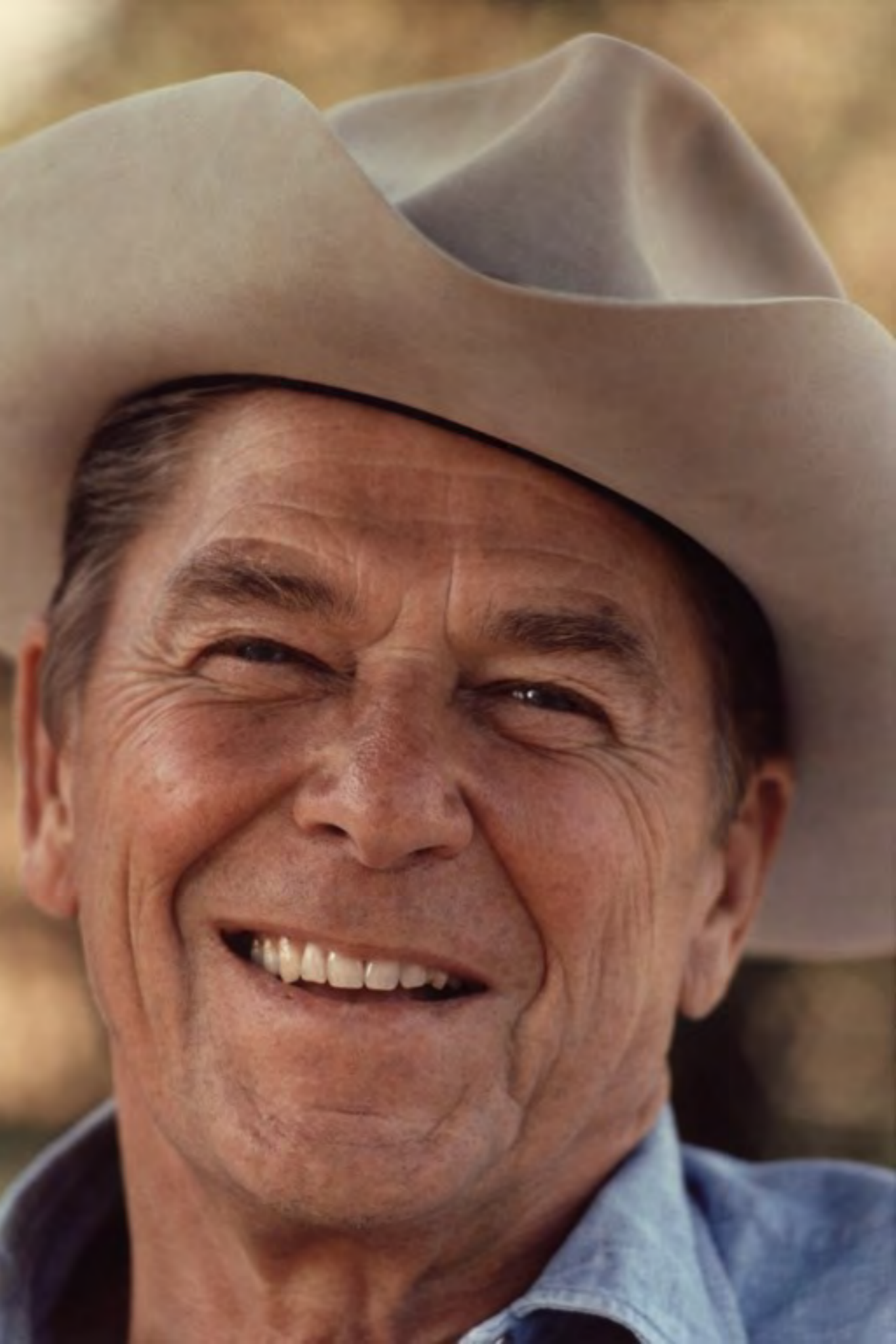
the “me” generation



STDs

Drugs

Disco



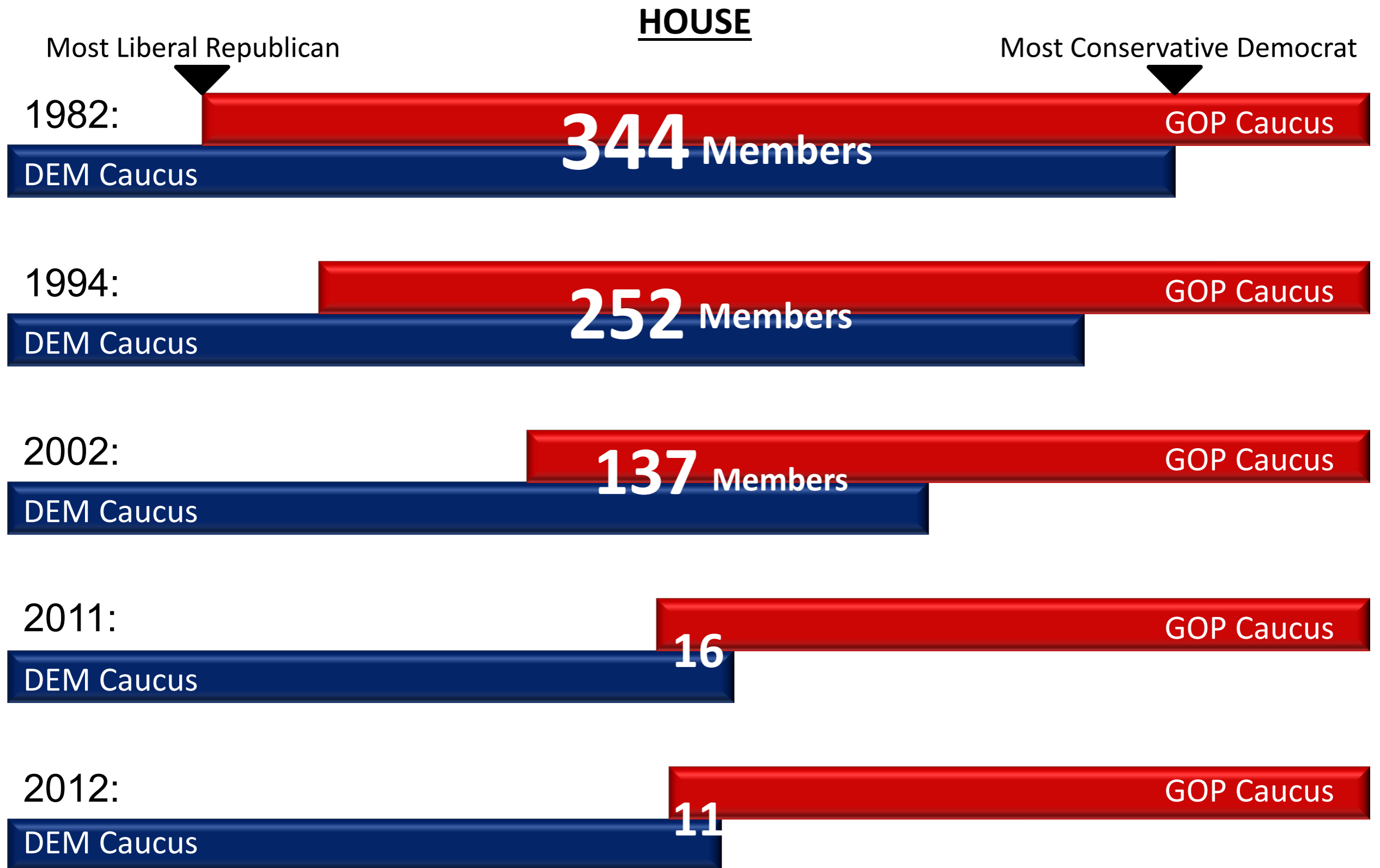
STILL: Gordon Gekko, Wall Street





**CHALLENGER
1986**

The political middle has disappeared.



Source: National Journal Vote Rankings from a presentation by Mehlman Vogel Castagnetti

1970

Cuyahoga River Fire 1970





1970



earth day **1970**

April 22nd





August 1970



FIFTY CENTS

NOVEMBER 20, 1972

TIME

LANDSLIDE

**Prospects
for the
Second Term**

NO 7A MRG C41582155 13 50
DR B D MORGAN
415 CLAY ST
OTTAWA IL 61350

1972

F-310

**SORRY
NO
GASOLINE**

CHEVRON SUPREME

1973

1976



1976



1976

CLIMATE CHANGE SCIENCE

AN ANALYSIS OF SOME KEY QUESTIONS

Committee on the Science of Climate Change

Division on Earth and Life Studies

National Research Council

1.5 – 4.5°C

NATIONAL ACADEMY PRESS
Washington, D.C.



**HAZARDOUS
CHEMICALS**

**UNAUTHORIZED
ENTRY
PROHIBITED**

**Love Canal Dump
1978**



First Happy Meal

1979



1979

SMOOG



1979

1980



Born: October 1980



January 1981



1981



1981

1981: hottest year on record



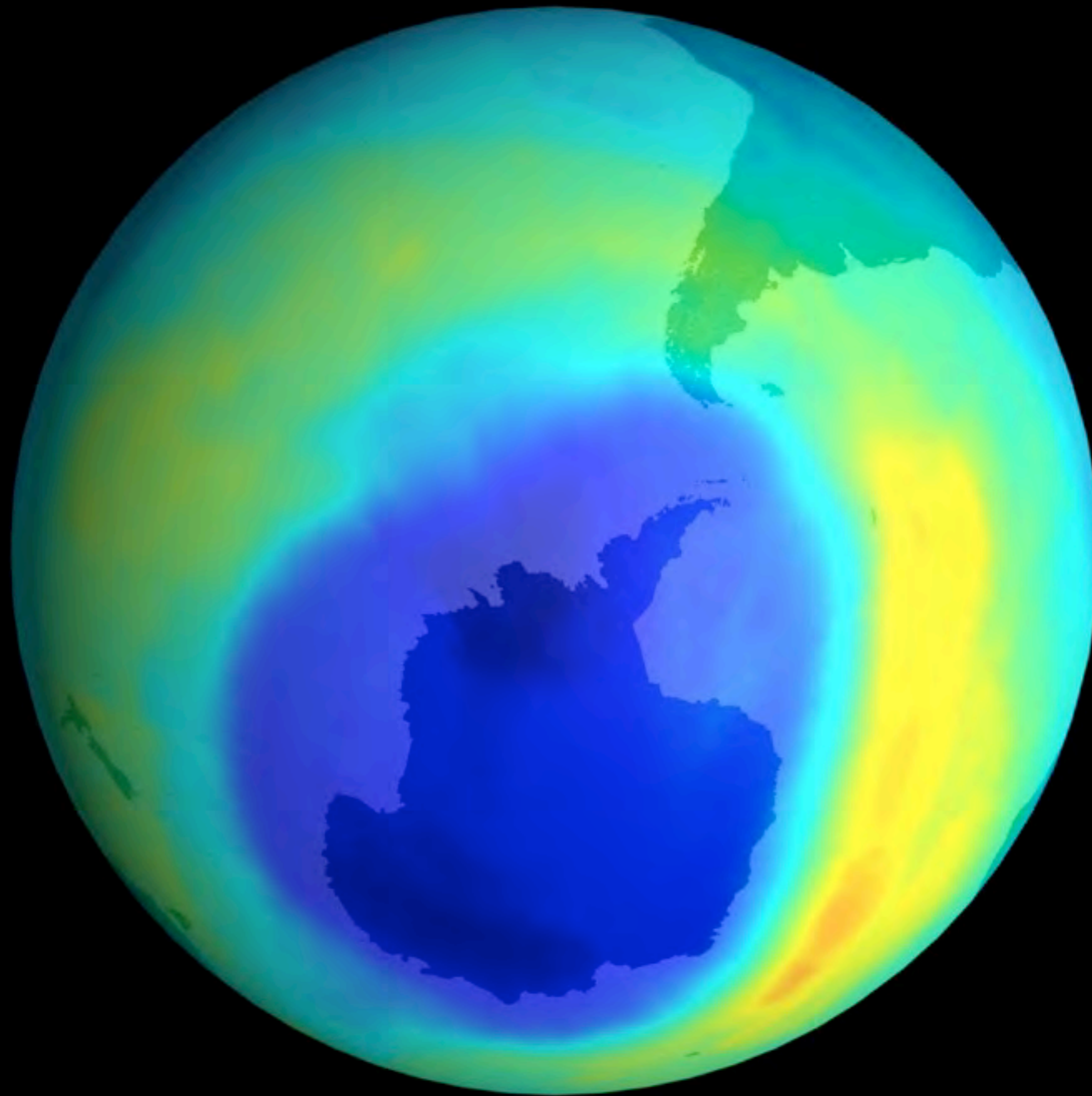


1984

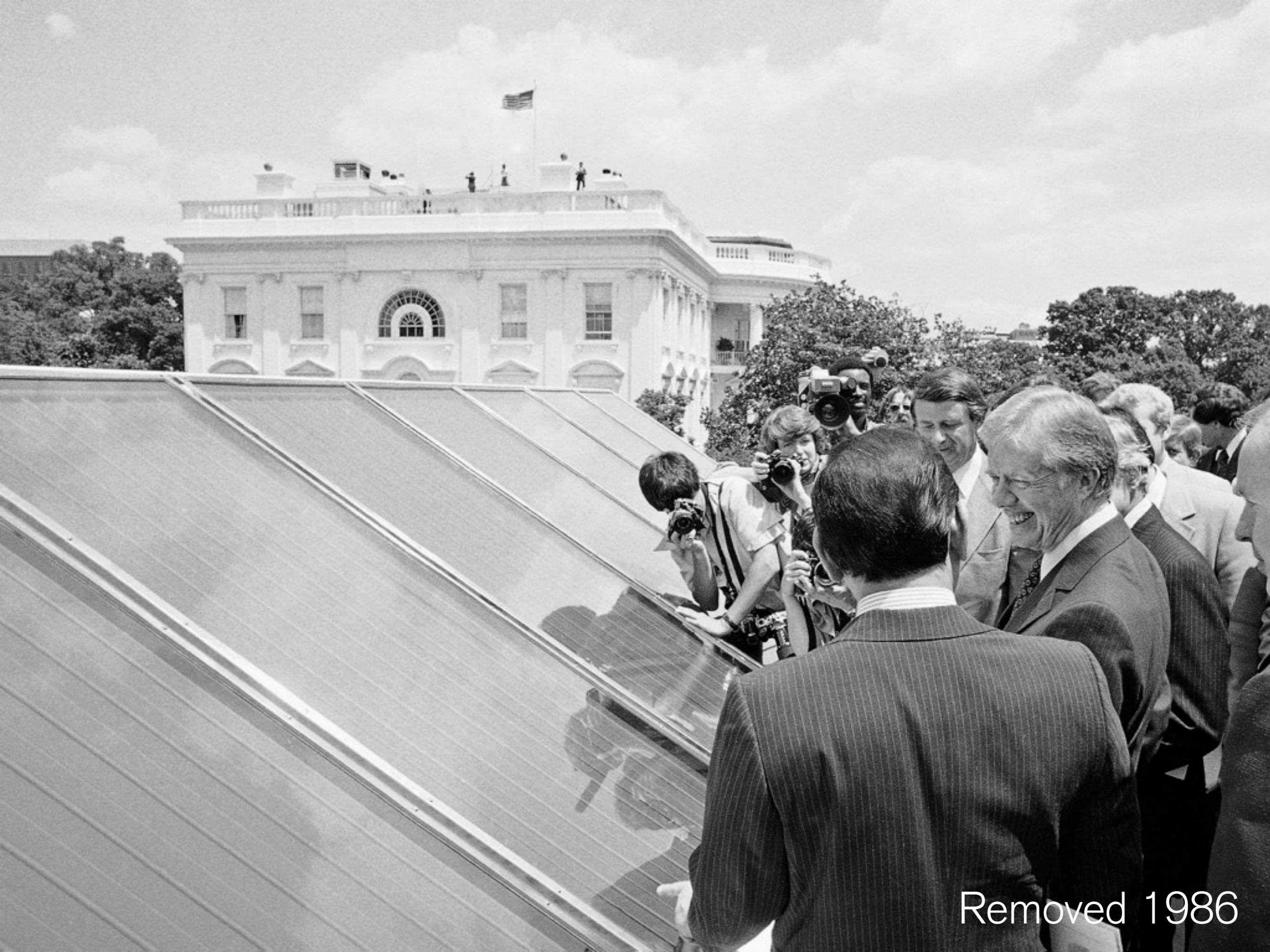


Bhopal Gas Leak 1984

1986



Ozone Hole 1985



Removed 1986

Chernobyl 1986





Montreal Protocol
1987



DR HANSEN

1988



1988



1989

1990

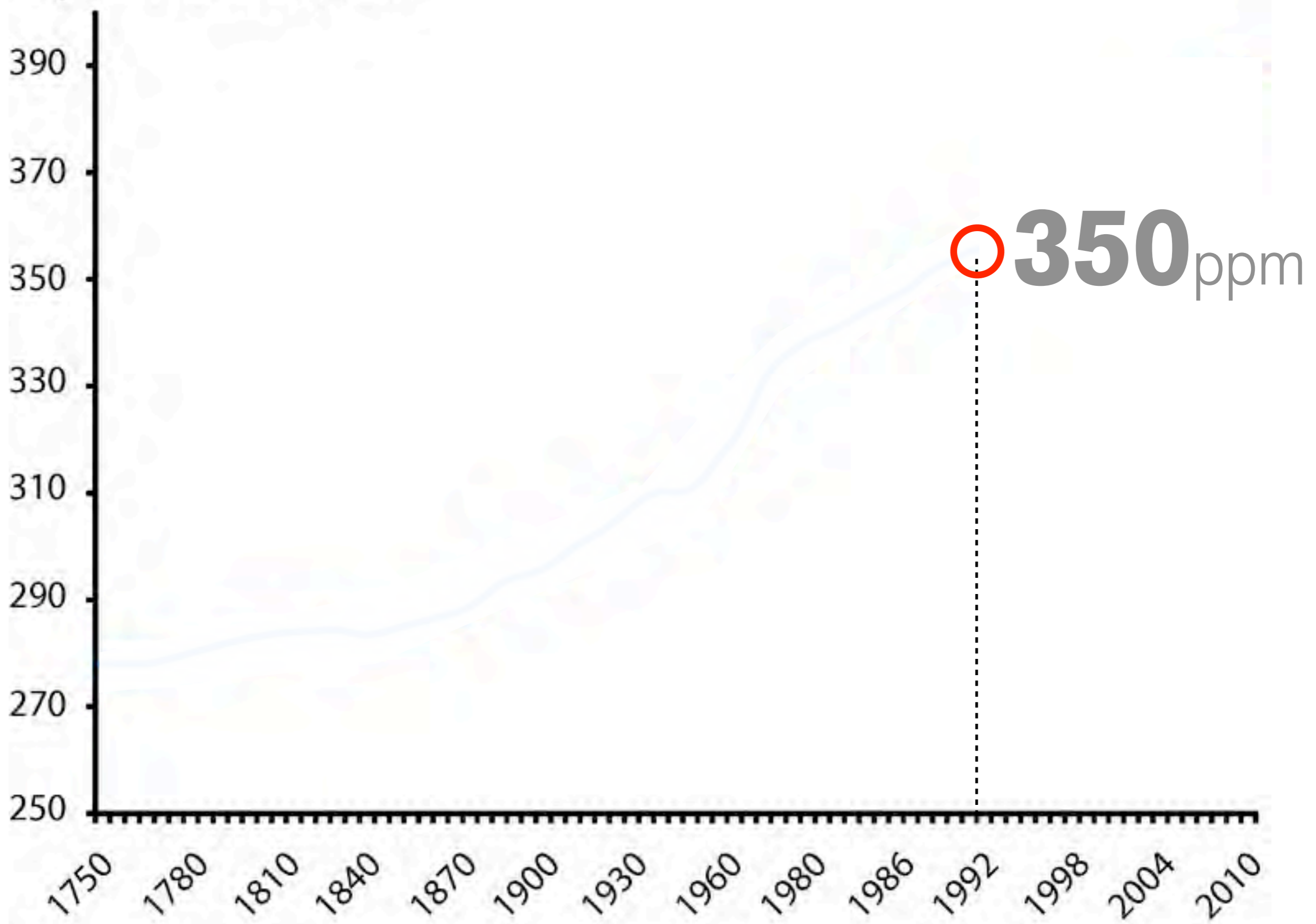
“environmentalists”

76%



Gallup Poll, 1990

CO₂ concentration (ppm)



An aerial photograph of a severely drought-stricken landscape. The ground is parched and cracked into a mosaic of irregular, polygonal shapes. Sparse, dry vegetation is scattered across the terrain. In the lower-left quadrant, a person wearing a light-colored shirt and a wide-brimmed hat is working in a field, using a long-handled tool to plant or tend to small green seedlings. The overall scene conveys the harsh impact of climate change on agriculture and the environment.

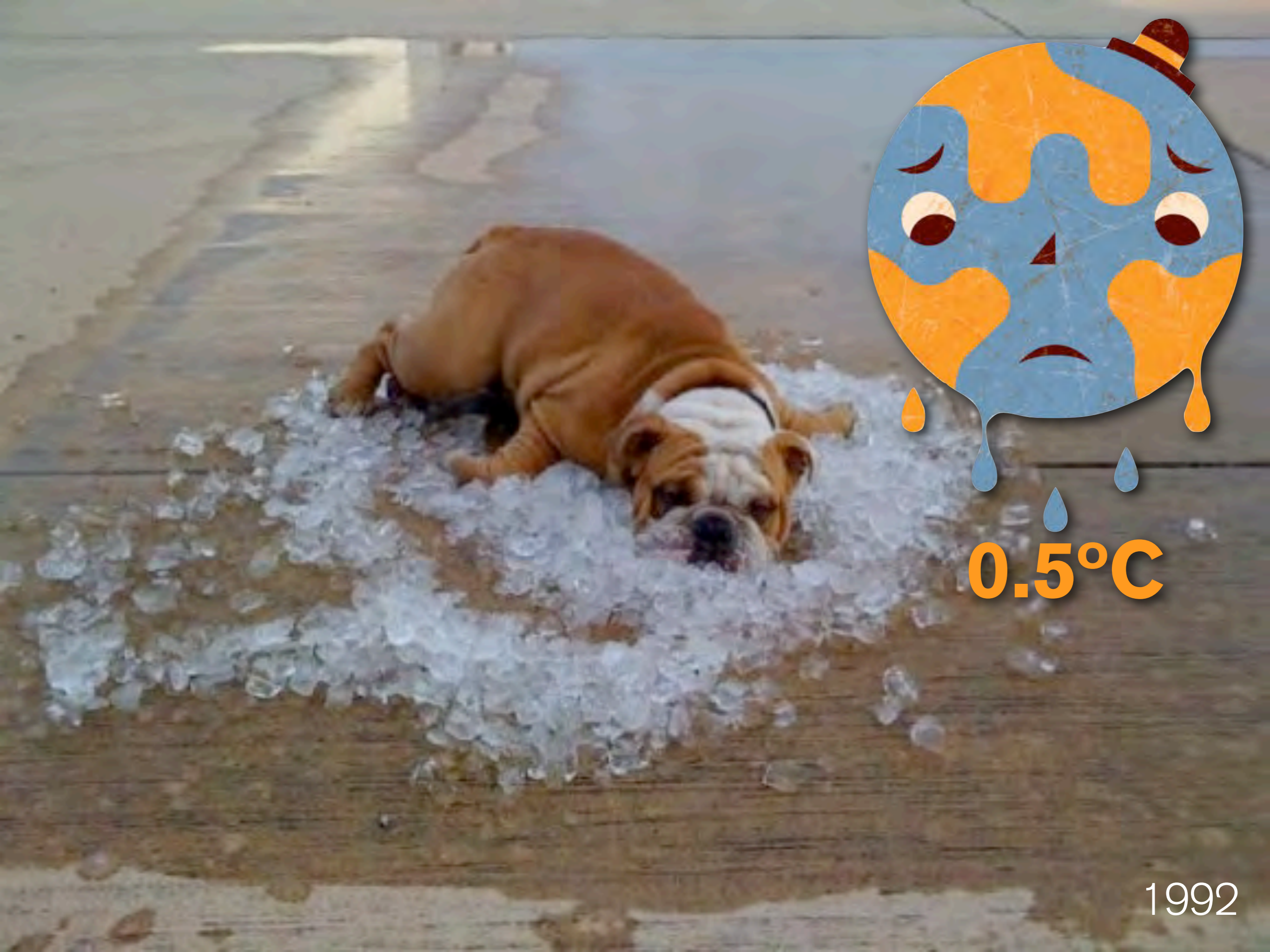
**MANAGING THE RISKS OF EXTREME
EVENTS AND DISASTERS TO ADVANCE
CLIMATE CHANGE ADAPTATION**

**SPECIAL REPORT OF THE
INTERGOVERNMENTAL PANEL
ON CLIMATE CHANGE**

ipcc  

**ОИ СГІМАТЕ СНАНСЕ
ІНТЕРСОЛЕВІМЕНТАГ ПАНЕЛ**

ipcc  



0.5°C

1992



Born: November 1992

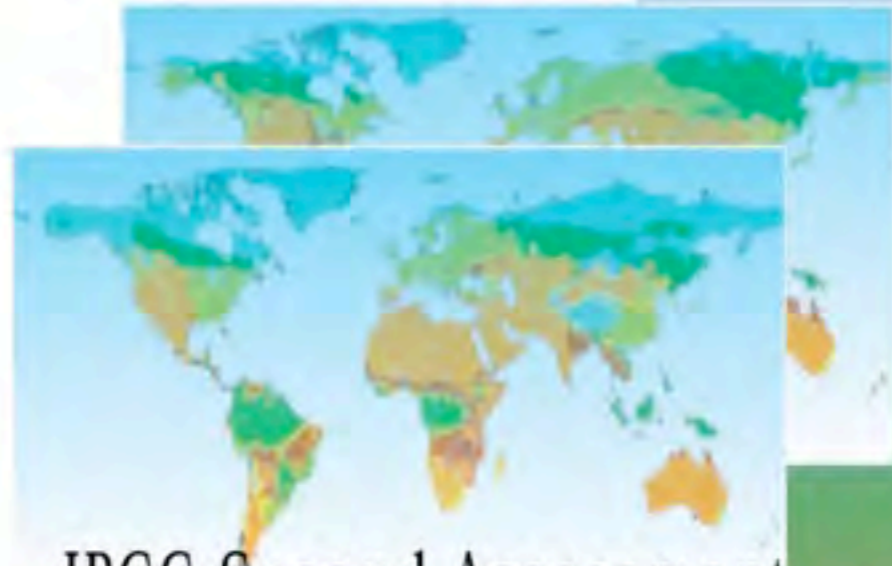
1996

**DUE TO THE FEDERAL
GOVERNMENT SHUTDOWN,
THE NATIONAL PARK SITES
ARE TEMPORARILY CLOSED
TO VISITOR SERVICES. WE
APOLOGIZE FOR ANY
INCONVENIENCES.**

Government Shut Down
November 1995



INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE



IPCC Second Assessment
Climate Change 1995

A REPORT OF THE
INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

**“human
caused
warming
is likely...”**



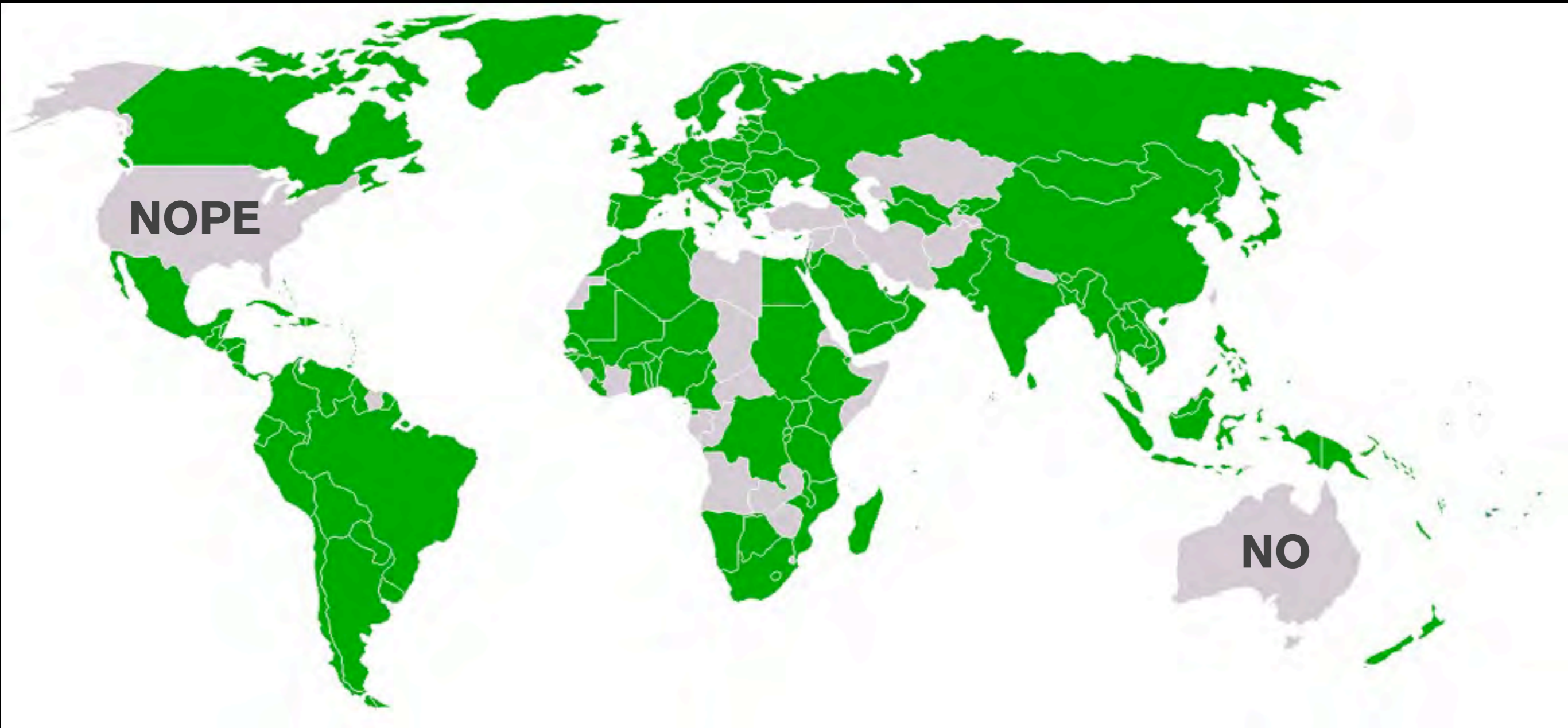
August 1996



Larsen Ice Shelf, Antarctica, 1996

HYBRID

1997



Kyoto Protocol, 1997



GLOBAL
WARMING
READY

1998

DIESEL
FOR BOLD AND OPEN LIVING

The image features a dark grey background with a series of parallel, light grey diagonal stripes. On the right side, there is a large, stylized graphic element consisting of a white trapezoidal shape and a purple trapezoidal shape below it. The number '20000' is written in white, bold, sans-serif font across the white shape. To the right of the purple shape, a portion of a red circle is visible.

20000

TIME

INVENTIONS
2000

537 VOTES BUSH'S
NEW
MARGIN

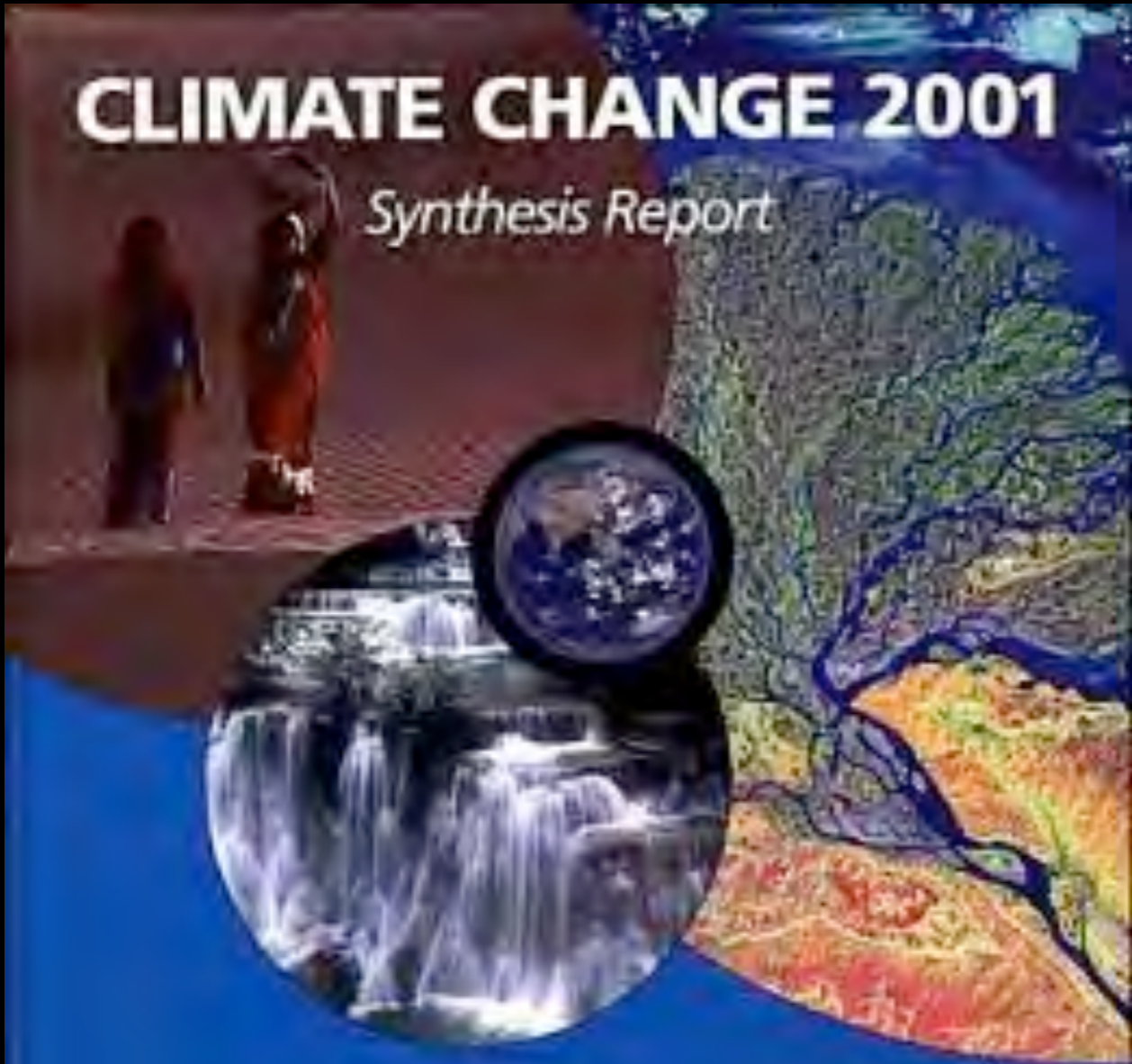
After Sunday's
certification, it's
on to the courts

**GORE'S LEGAL
CHALLENGES**

on to the courts

CLIMATE CHANGE 2001

Synthesis Report



Contribution of Working Groups I, II, and III
to the Third Assessment Report of the
Intergovernmental Panel on Climate Change



“unprecedented”

“very likely”



“No Tree Left Behind”

HEALTHY FORESTS

2003



American
Idol.

2002

idolonfox.com

FOX



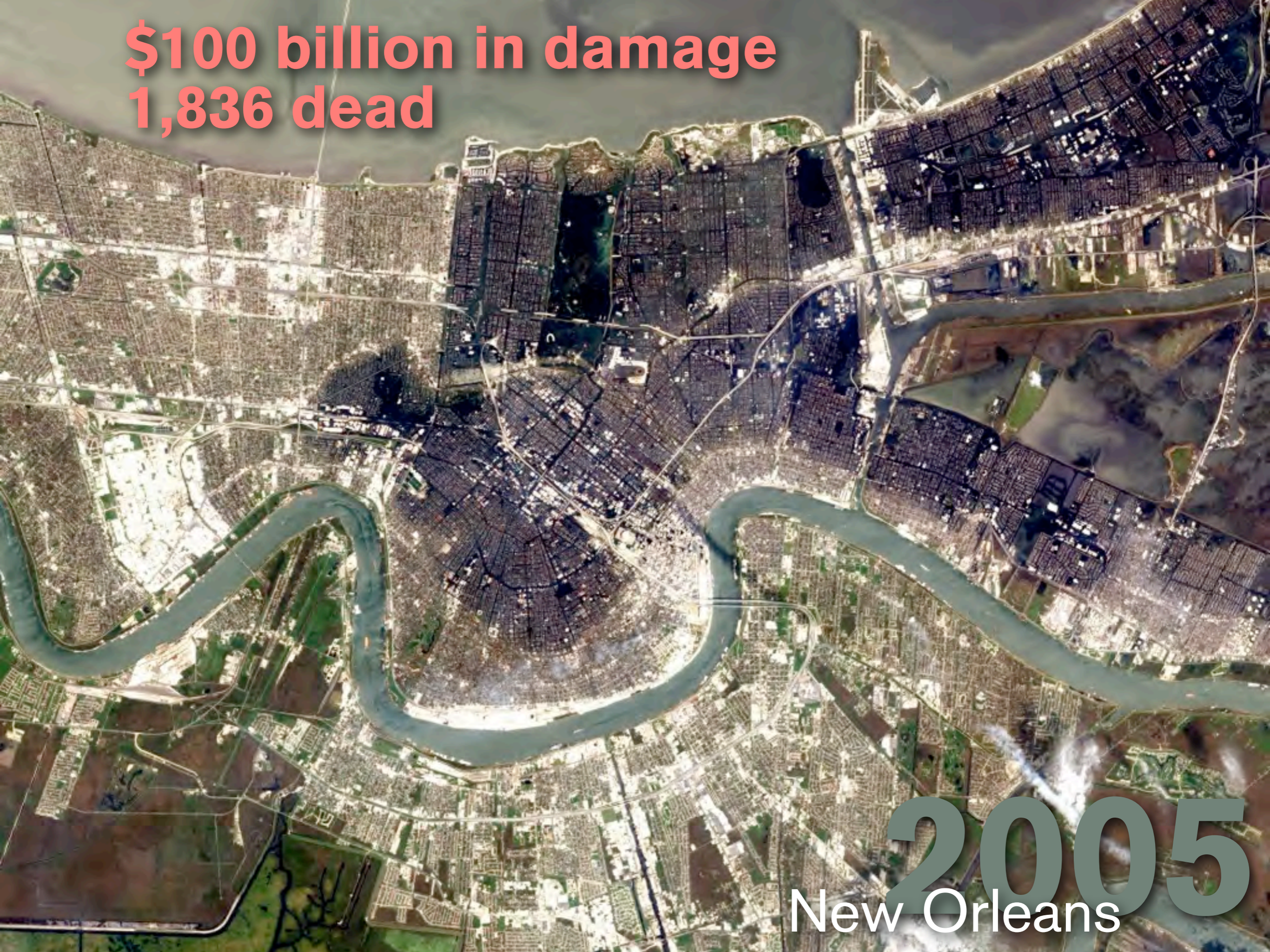
TOYOTA

CHRYSLER



2006

\$100 billion in damage
1,836 dead



2005
New Orleans

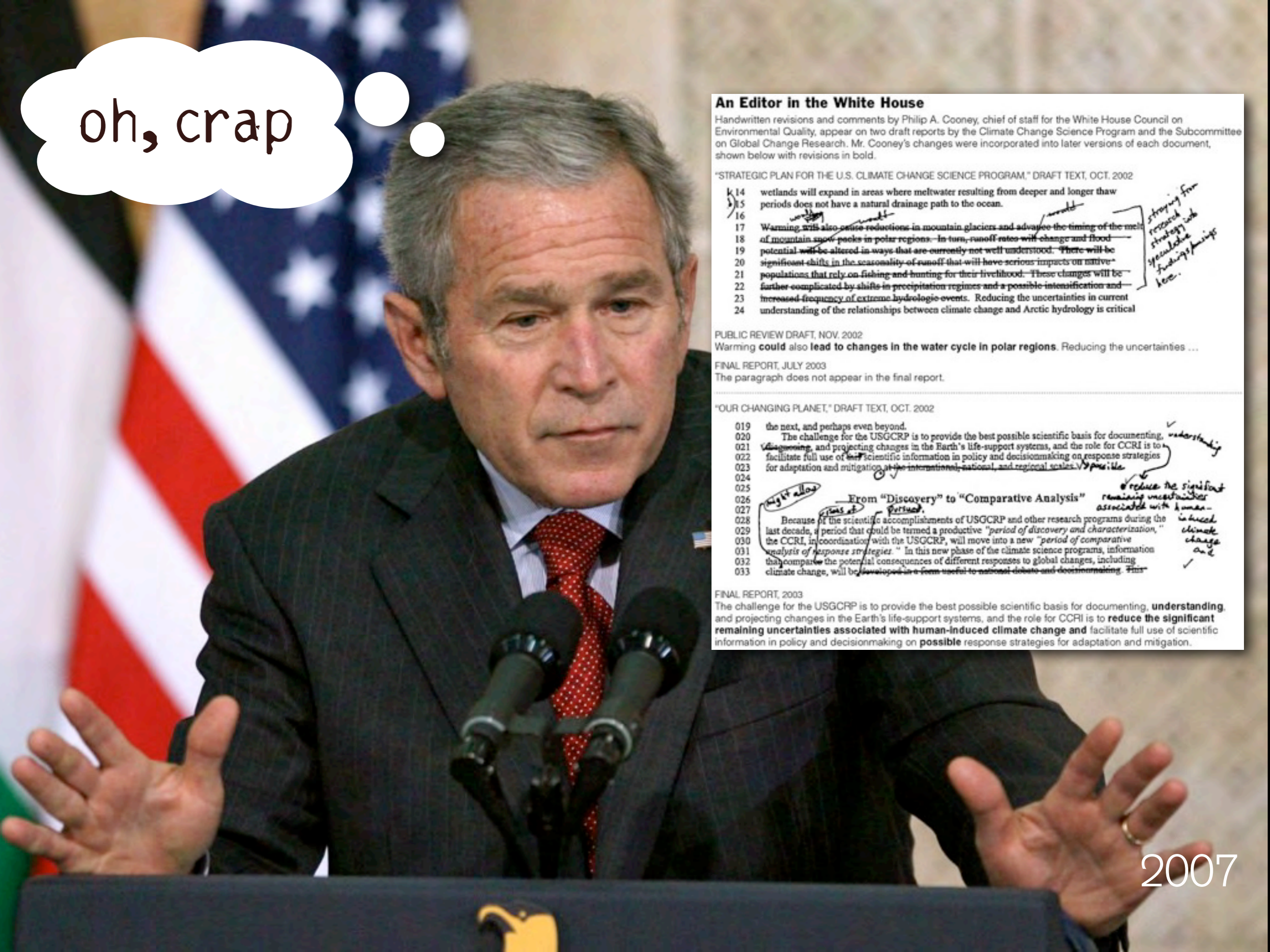
oh, crap



**Academy Award
Best Documentary**

2006

oh, crap



An Editor in the White House

Handwritten revisions and comments by Philip A. Cooney, chief of staff for the White House Council on Environmental Quality, appear on two draft reports by the Climate Change Science Program and the Subcommittee on Global Change Research. Mr. Cooney's changes were incorporated into later versions of each document, shown below with revisions in bold.

"STRATEGIC PLAN FOR THE U.S. CLIMATE CHANGE SCIENCE PROGRAM," DRAFT TEXT, OCT. 2002

14 wetlands will expand in areas where meltwater resulting from deeper and longer thaw
 15 periods does not have a natural drainage path to the ocean.
 16
 17 Warming will also cause reductions in mountain glaciers and advance the timing of the melt
 18 of mountain snow peaks in polar regions. In turn, runoff rates will change and flood
 19 potential will be altered in ways that are currently not well understood. There will be
 20 significant shifts in the seasonality of runoff that will have serious impacts on native
 21 populations that rely on fishing and hunting for their livelihood. These changes will be
 22 further complicated by shifts in precipitation regimes and a possible intensification and
 23 increased frequency of extreme hydrologic events. Reducing the uncertainties in current
 24 understanding of the relationships between climate change and Arctic hydrology is critical

staying from research strategy with funding priorities here.

PUBLIC REVIEW DRAFT, NOV. 2002

Warming could also lead to changes in the water cycle in polar regions. Reducing the uncertainties ...

FINAL REPORT, JULY 2003

The paragraph does not appear in the final report.

"OUR CHANGING PLANET," DRAFT TEXT, OCT. 2002

019 the next, and perhaps even beyond.
 020 The challenge for the USGCRP is to provide the best possible scientific basis for documenting,
 021 ~~diagnosing~~ understanding, and projecting changes in the Earth's life-support systems, and the role for CCRI is to
 022 facilitate full use of ~~best~~ scientific information in policy and decisionmaking on response strategies
 023 for adaptation and mitigation at the international, national, and regional scales. *possible*
 024
 025
 026 *might allow* From "Discovery" to "Comparative Analysis" *reduce the significant remaining uncertainties associated with human-induced climate change and*
 027 *focus at* ~~period~~
 028 Because of the scientific accomplishments of USGCRP and other research programs during the
 029 last decade, a period that could be termed a productive "period of discovery and characterization,"
 030 the CCRI, in coordination with the USGCRP, will move into a new "period of comparative
 031 analysis of response strategies." In this new phase of the climate science programs, information
 032 that compares the potential consequences of different responses to global changes, including
 033 climate change, will be ~~developed in a form useful to national debate and decisionmaking. This~~

FINAL REPORT, 2003

The challenge for the USGCRP is to provide the best possible scientific basis for documenting, **understanding**, and projecting changes in the Earth's life-support systems, and the role for CCRI is to **reduce the significant remaining uncertainties associated with human-induced climate change and** facilitate full use of scientific information in policy and decisionmaking on **possible** response strategies for adaptation and mitigation.

2007



oh, crap

2008



2010



Deepwater Horizon
21 April 2010

5100

oil spills since
DEEPWATER HORIZON



GLOBAL
WARMING
READY

2010

DIESEL
FOR BOLD AND READY LIVING

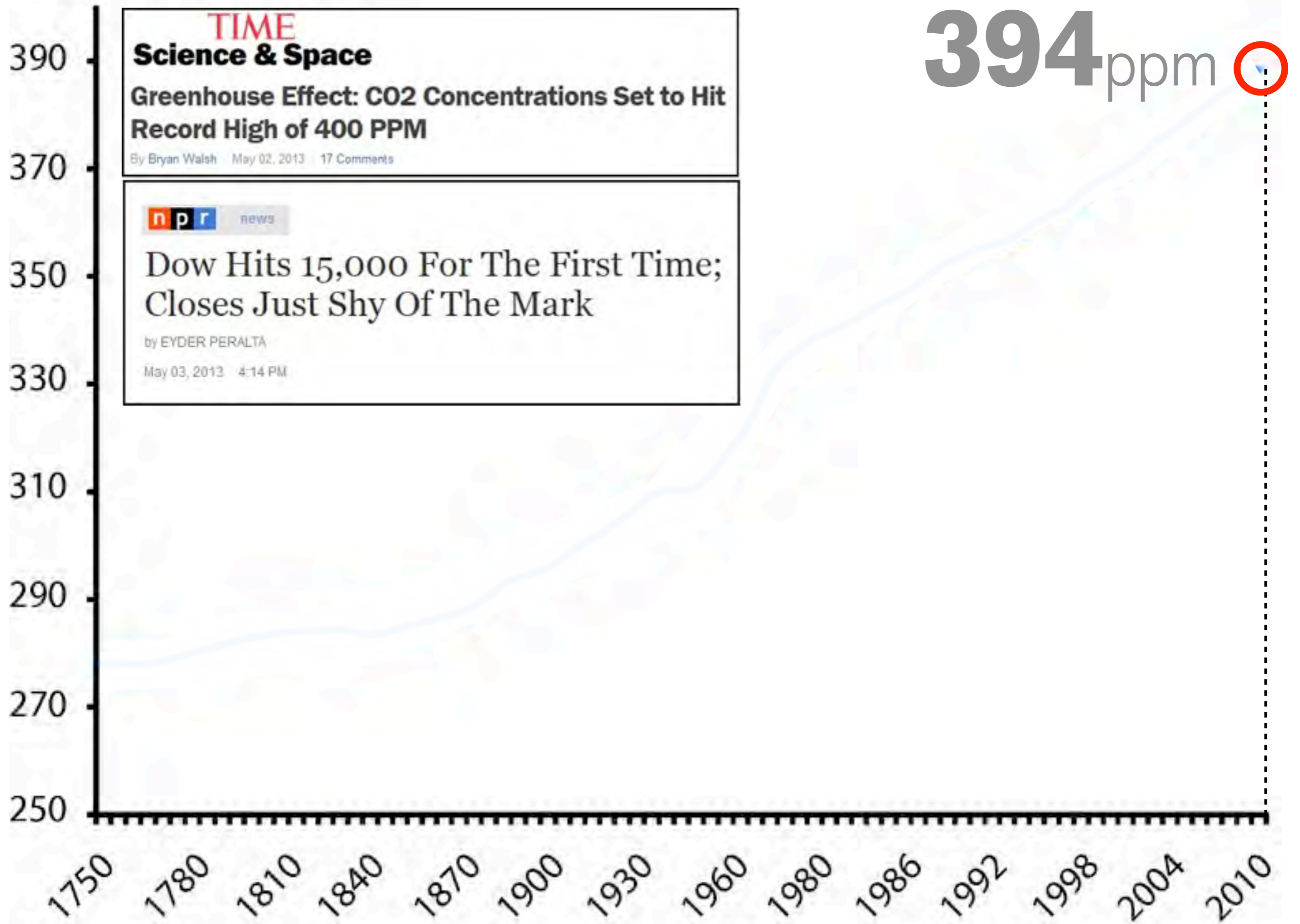
133 days after release



35%
infant
mortality
increase

Model simulations on the long-term dispersal of Cs-137 released into the Pacific Ocean off Fukushima
Erik Behrens, Franziska U. Schwarzkopf, Joke F. Lübbecke and Claus W. Böning

CO₂ concentration (ppm)









today's date

birthdate

total days alive

total hours alive

total minutes alive

11/20/13

August 1970

15811

379466

22767959









66,000mph









NO

NO



No!

A close-up shot of Javier Bardem with a serious, intense expression. He has shoulder-length brown hair and is wearing a dark, collared shirt. The background is a plain, light-colored wall. A white speech bubble with a black outline is positioned in the upper right corner, containing the word "no." in a black, lowercase, serif font.

no.



CLIP: Chi McBride in Pushing Daisies

USE THE CORRECT “NO” QUESTIONS

“Do you want a green roof?”

“You want to keep paying for heat?”

SUSTAINABLE



how many?

“Frontlash”



(the opposite of backlash)





THE NEW THREE-Rs:

**redesign
renew
regenerate**

**Longwood Gardens
Kennett Square, Pennsylvania
Architect: Kim Wilke Associates
GSky Plant Systems Inc.**

A photograph of a water tower with the word "THINK" painted on its side. The tower is cylindrical with a conical top and a metal walkway around its middle. It is supported by a lattice structure. The background is a clear blue sky, and a portion of an orange structure is visible in the bottom left corner.

THINK







@ericcoreyfreed

eric@organicarchitect.com

DROP OFF YOUR BUSINESS CARD

ericcoreyfreed

eric@organicarchitect.com

CONNECT:



THANK YOU FOR...

turning the ~~effort into a presentation of 360 slides~~

DOWNLOAD THIS PRESENTATION OF 360 SLIDES:

dodosapiens.com

#greenbuild

 **@mattgrocoff**
mgrocoff@gmail.com

 **@ericcoreyfreed**
eric@organicarchitect.com

CASE

STUDIES

CASE STUDY

Presidio Commissary

Rehab of old building
on a former Army Base
in San Francisco.





INTRODUCING THE

Detroit Prototype Urban Block

A full block site with walkable amenities
and a handful of beautiful old homes
in need of restoration.



16th & Hudson Streets, Detroit



Stanley Street

Stanton Street

16th Street

Hudson Street



16th & Hudson Streets

AERIAL VIEW



INCORPORATE THE GREAT OLD HOUSES ON SITE

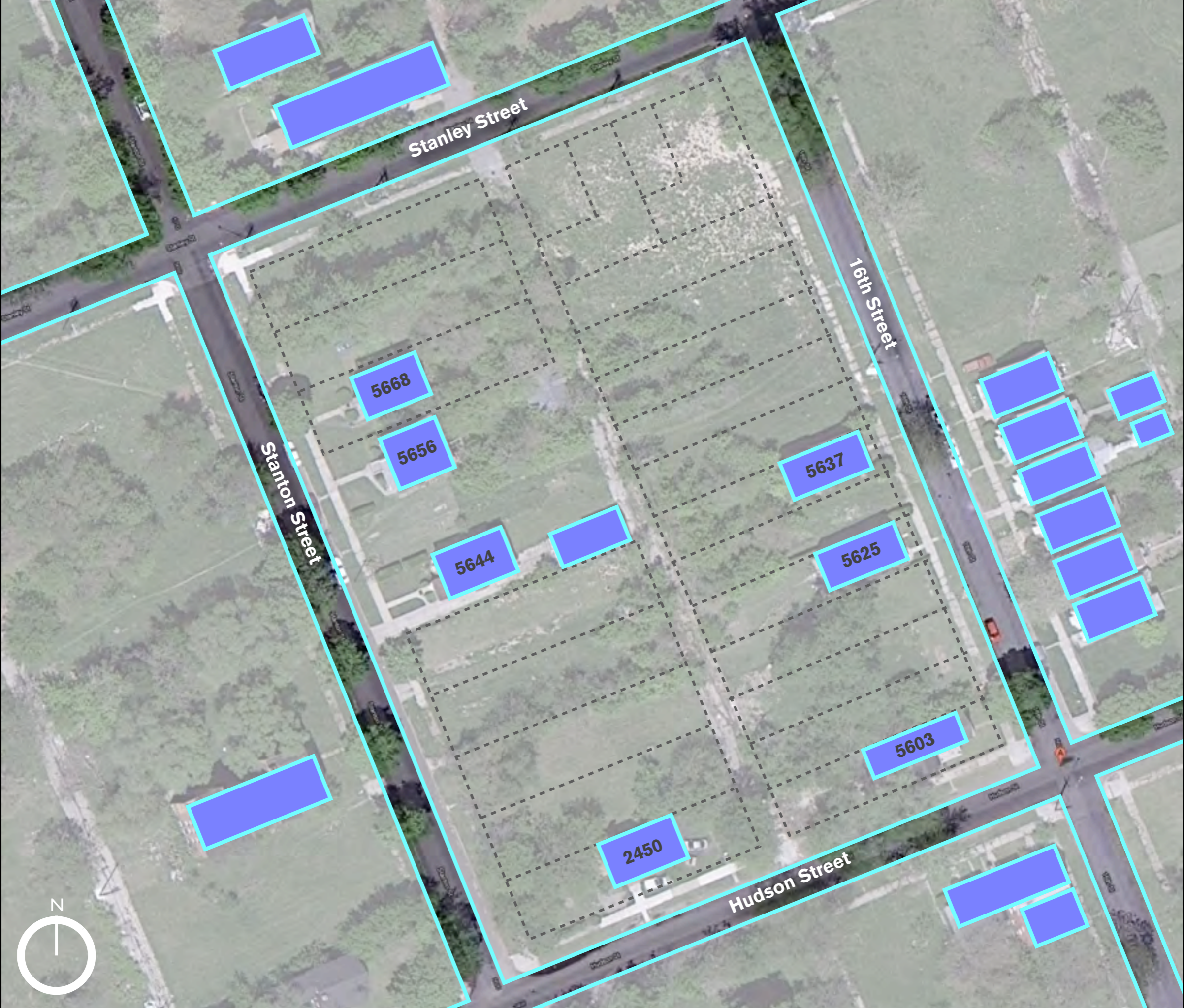
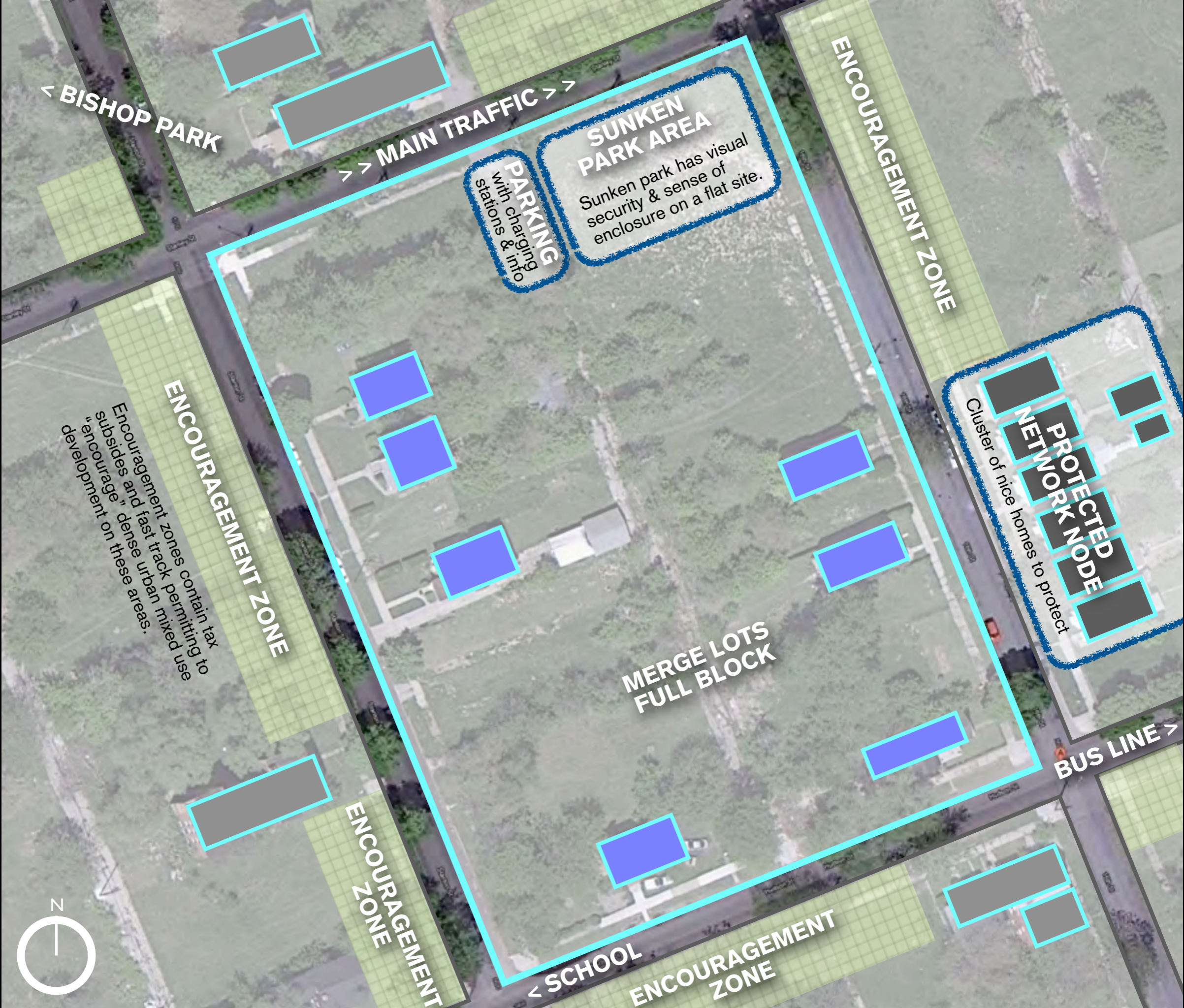


FIGURE GROUND

DEVELOPMENT AREAS



SUNKEN PARK AREA

Sunken park has visual security & sense of enclosure on a flat site.

PARKING
with charging stations & info

ENCOURAGEMENT ZONE

Encouragement zones contain tax subsidies and fast track permitting to "encourage" dense urban mixed use development on these areas.

NETWORK PROTECTED NODE

Cluster of nice homes to protect

MERGE LOTS FULL BLOCK

ENCOURAGEMENT ZONE

SCHOOL

ENCOURAGEMENT ZONE

BUS LINE

ENCOURAGEMENT ZONE

BISHOP PARK

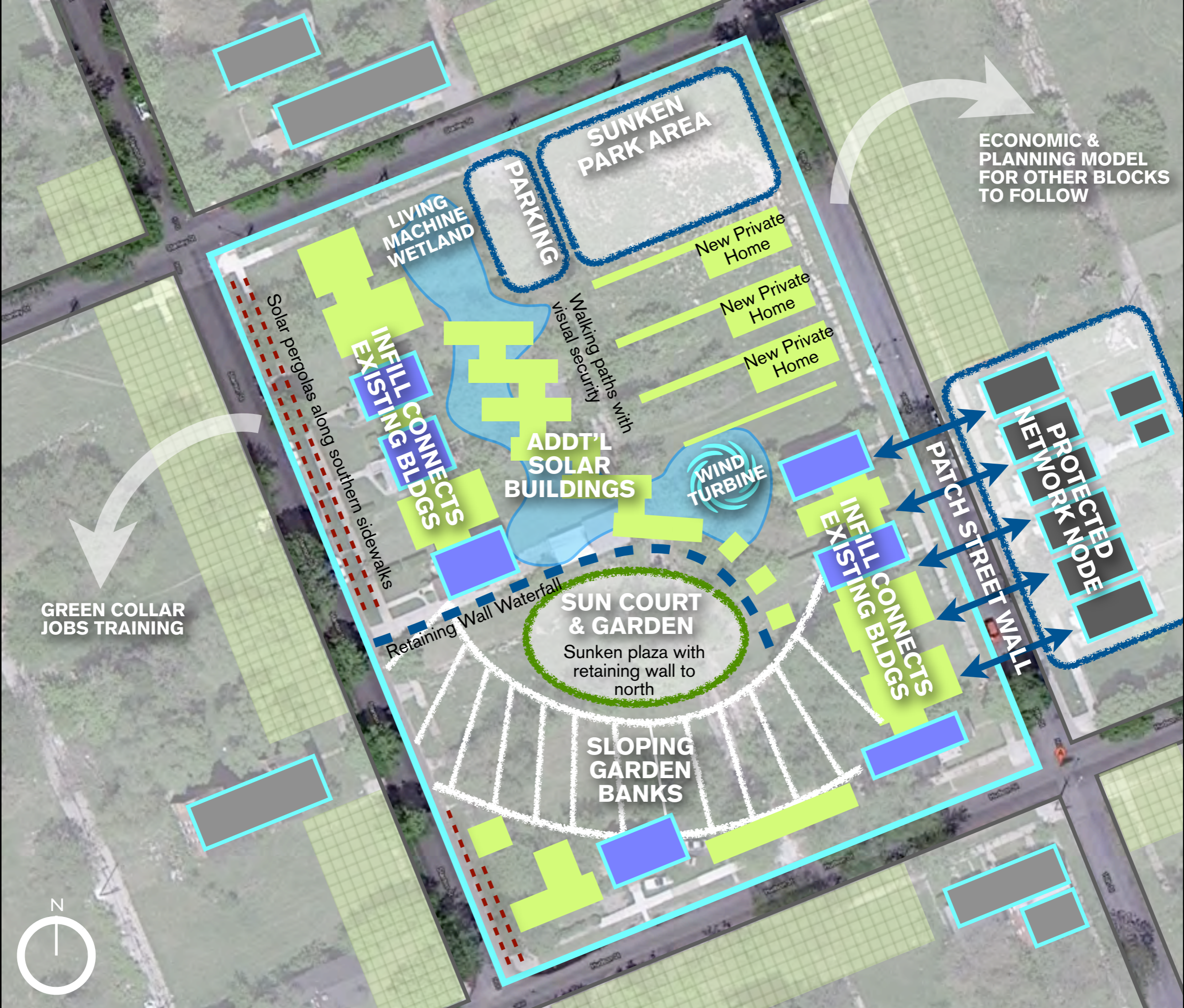
MAIN TRAFFIC



MASSING LAYOUT

ECONOMIC & PLANNING MODEL FOR OTHER BLOCKS TO FOLLOW

GREEN COLLAR JOBS TRAINING



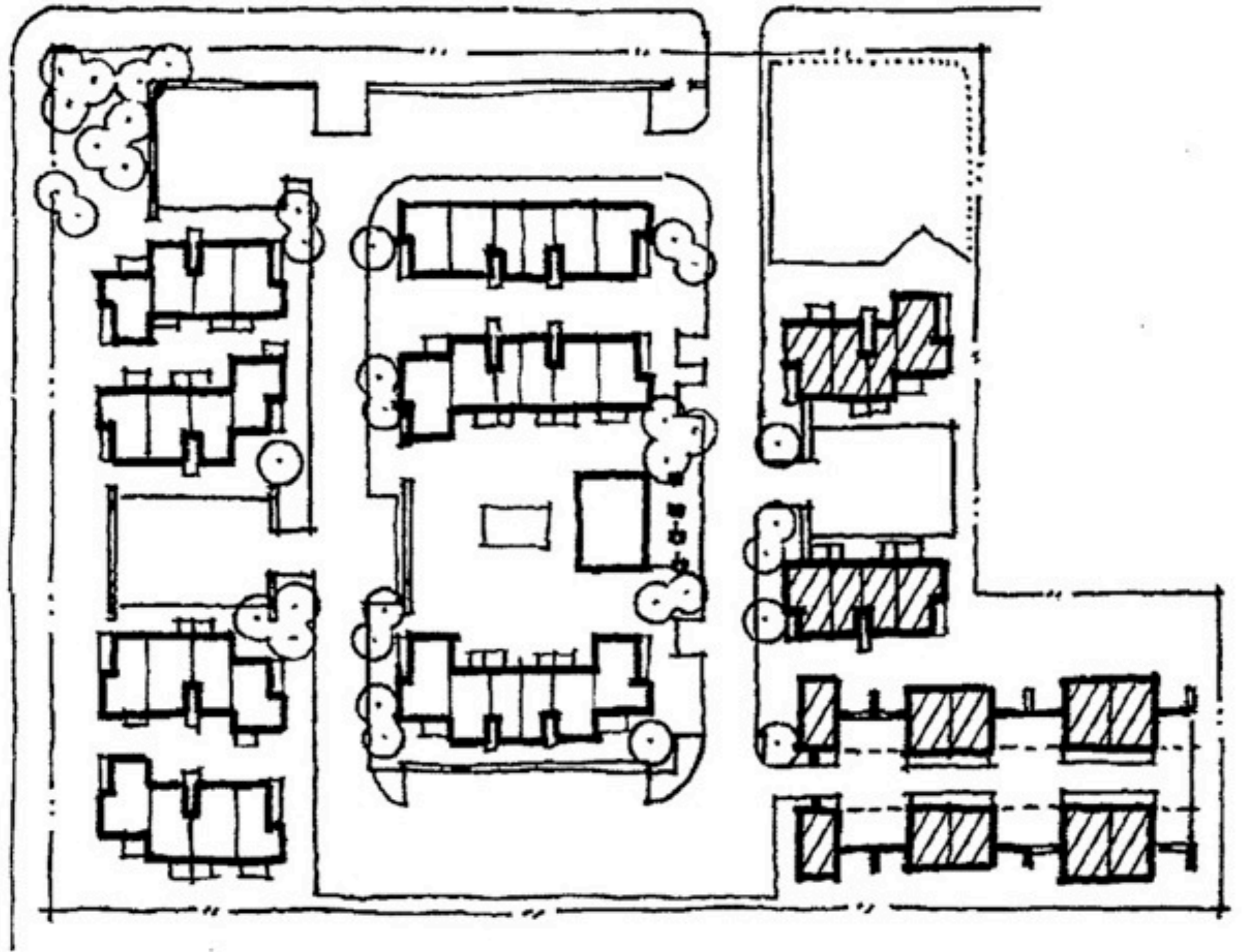
CASE STUDY

La Quinta Affordable Housing

Redevelopment project
for 80 homes on a greenfield site.

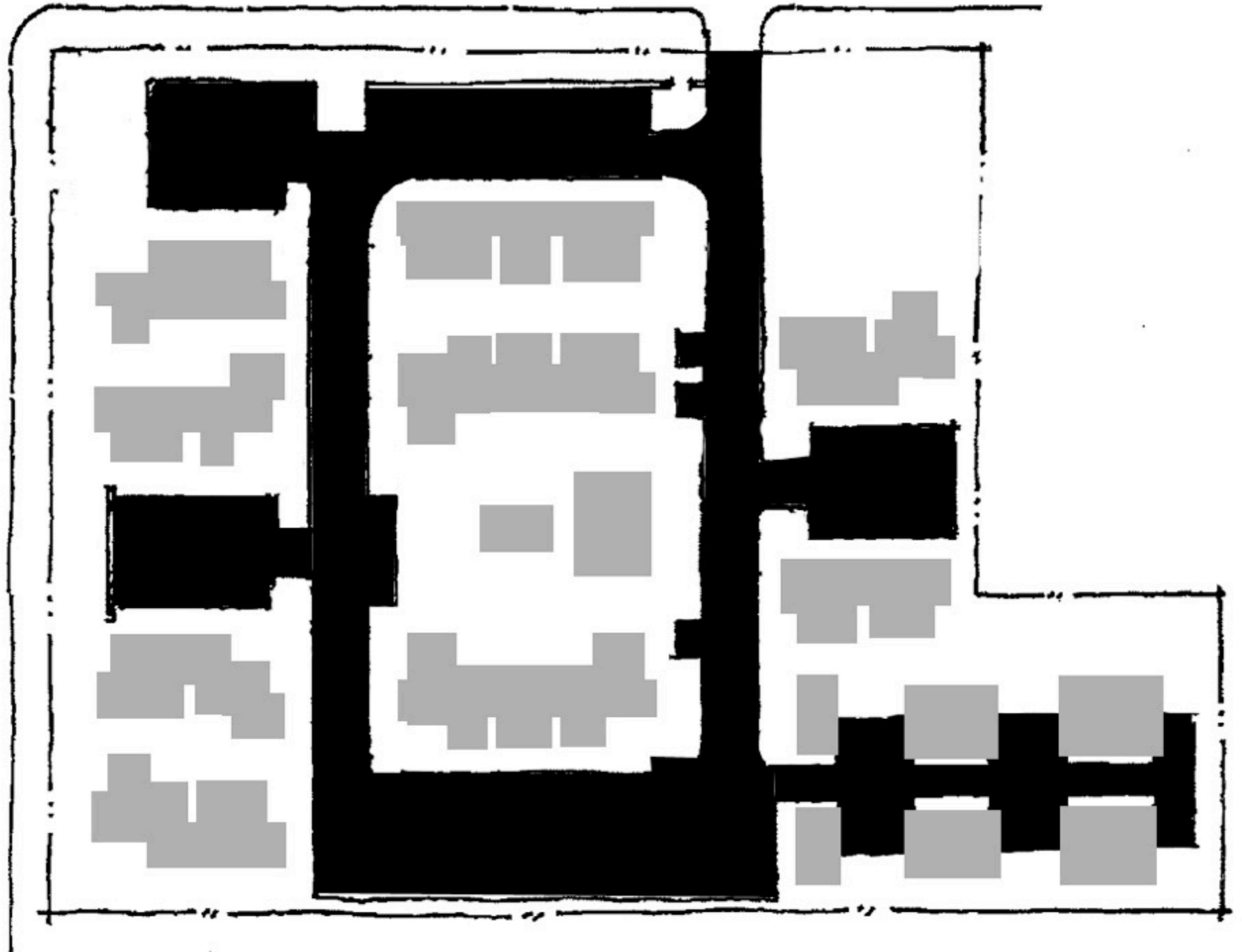
WESTWARD HO DRIVE

DUNE PALMS ROAD



WESTWARD HO DRIVE

DUNE PALMS ROAD



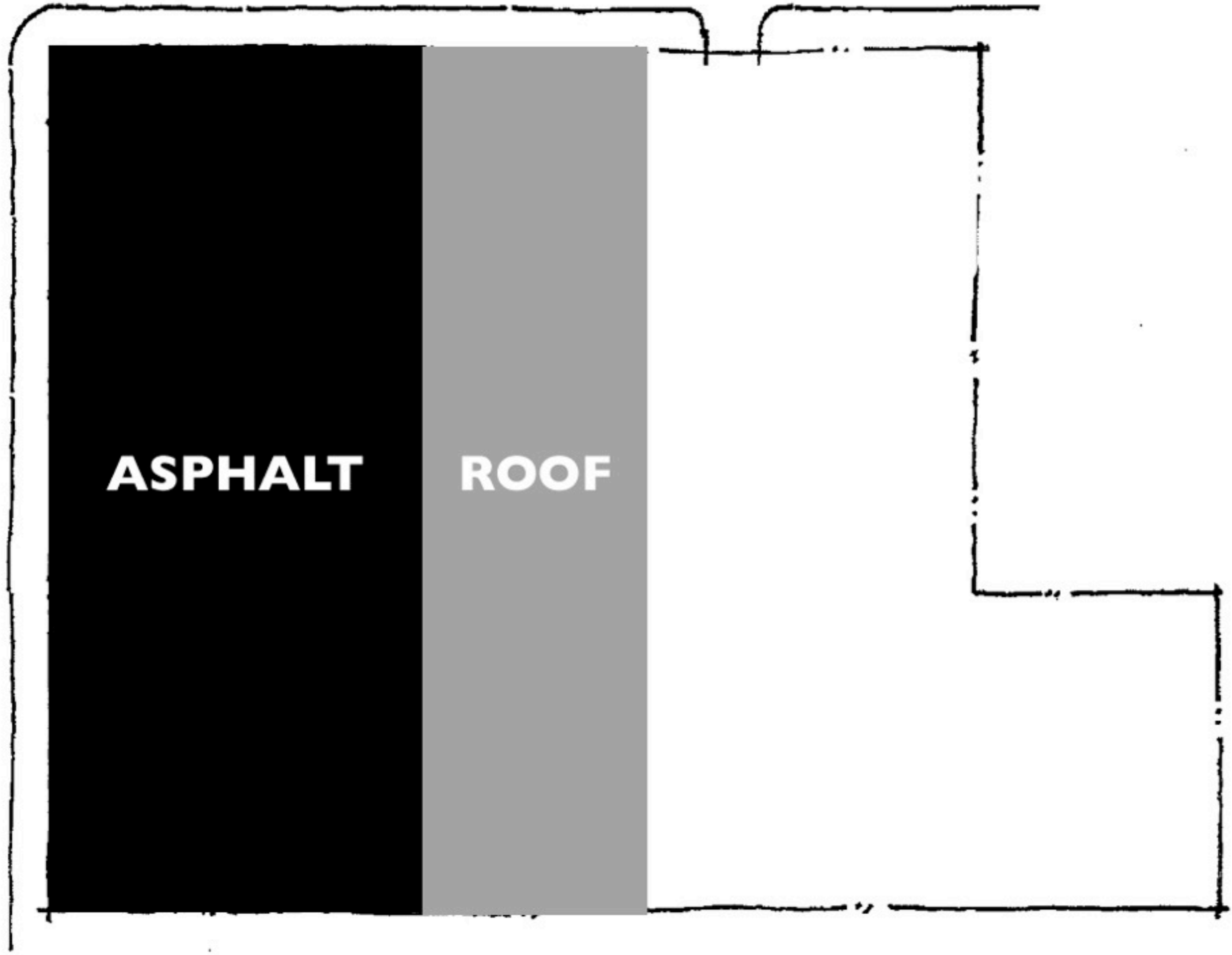
WESTWARD HO DRIVE



DUNE PALMS ROAD

ASPHALT

ROOF



WESTWARD HO DRIVE



DUNE PALMS ROAD



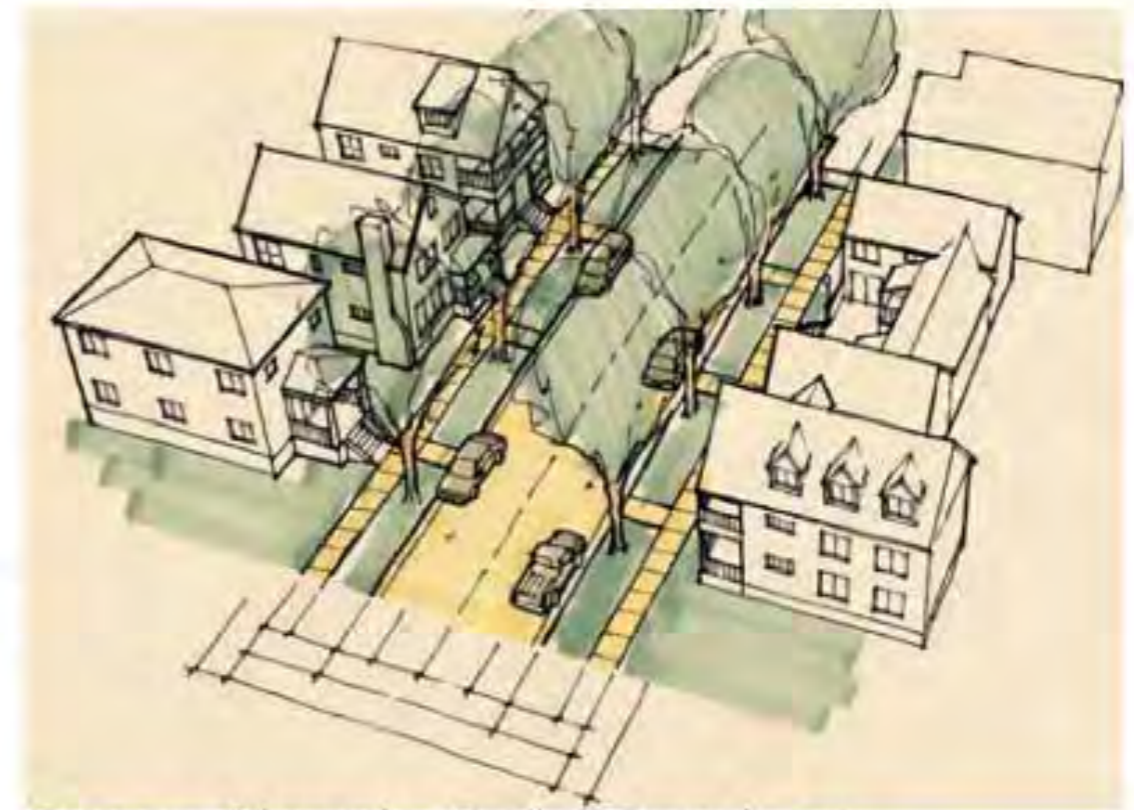
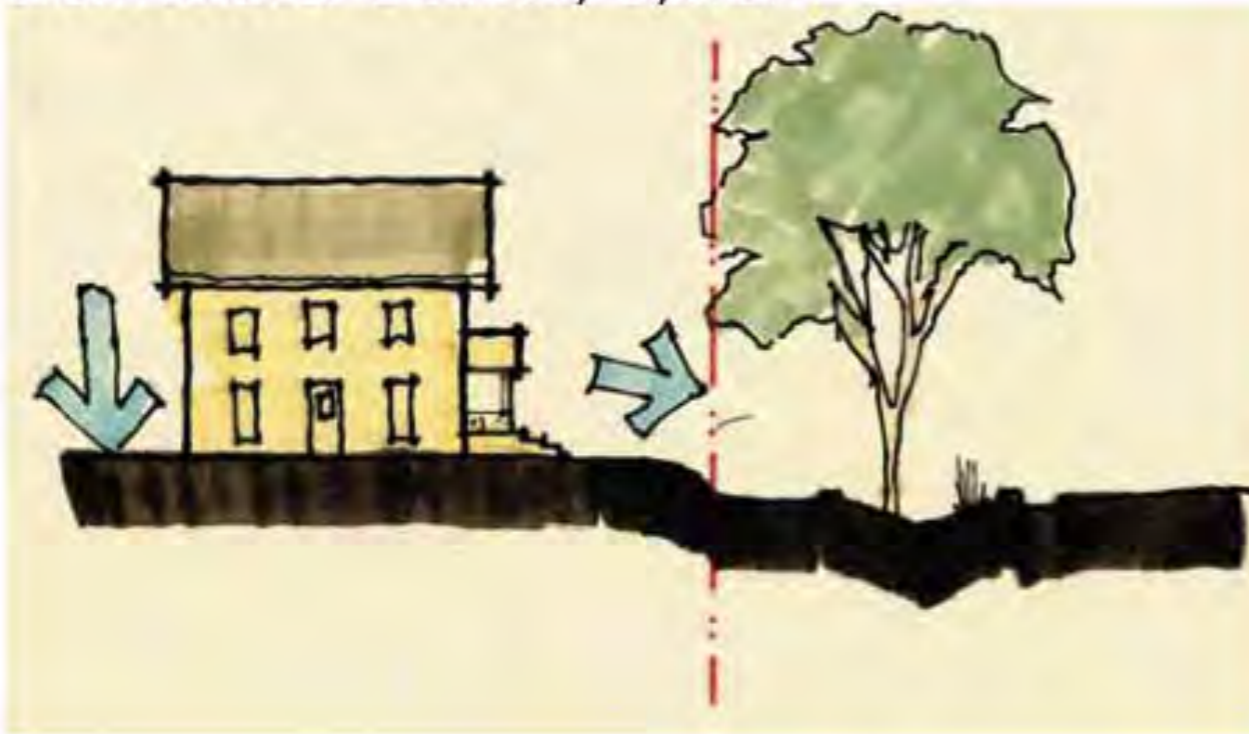
CASE STUDY

Caldwell Place

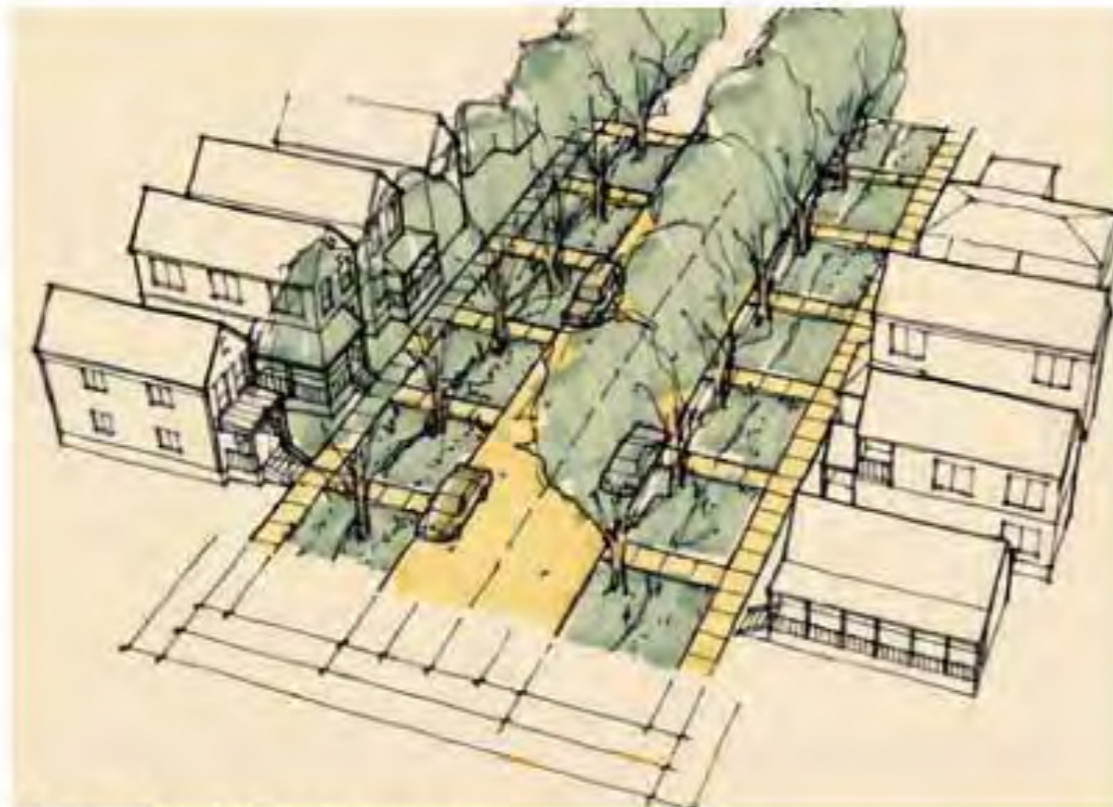
Developer project
on 34 acres site in Georgia.



Rainways / Pervious Streets as Primary Stormwater Delivery System



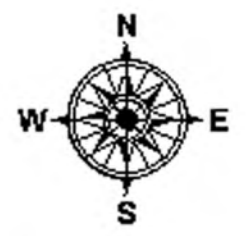
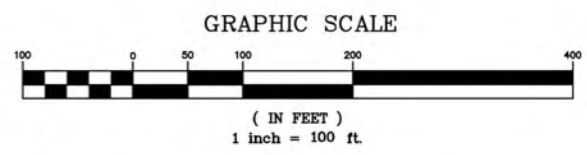
Green Streets, Rain Gardens

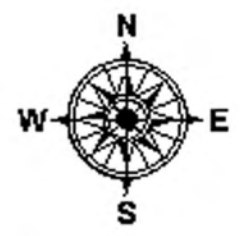
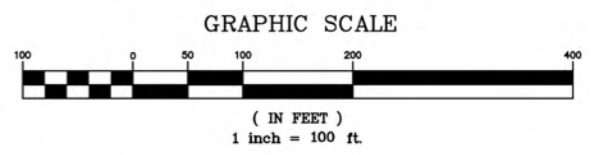


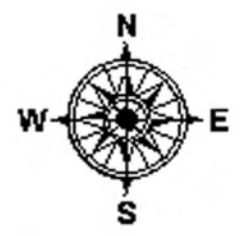
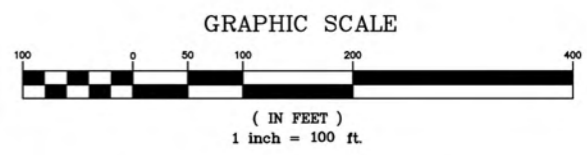
Central Rainway

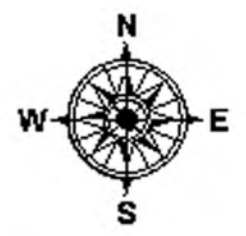
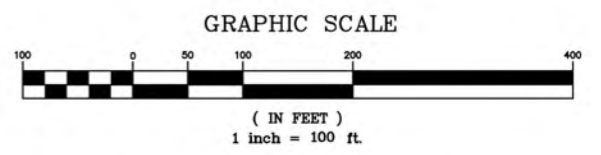
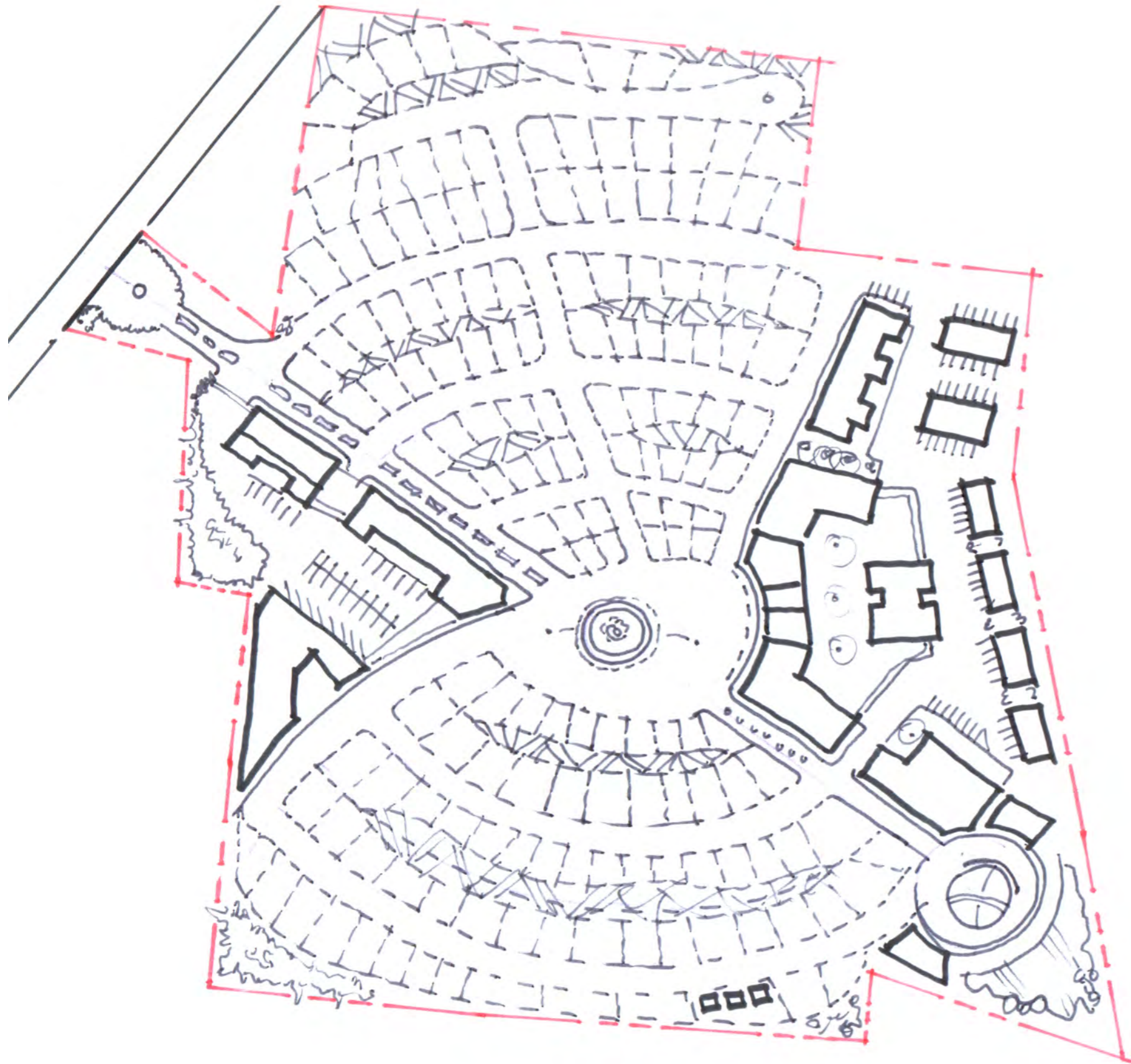


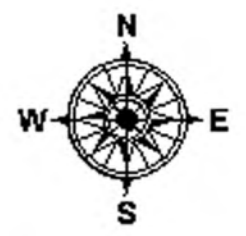
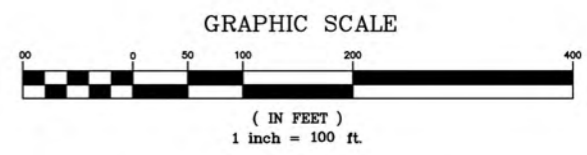
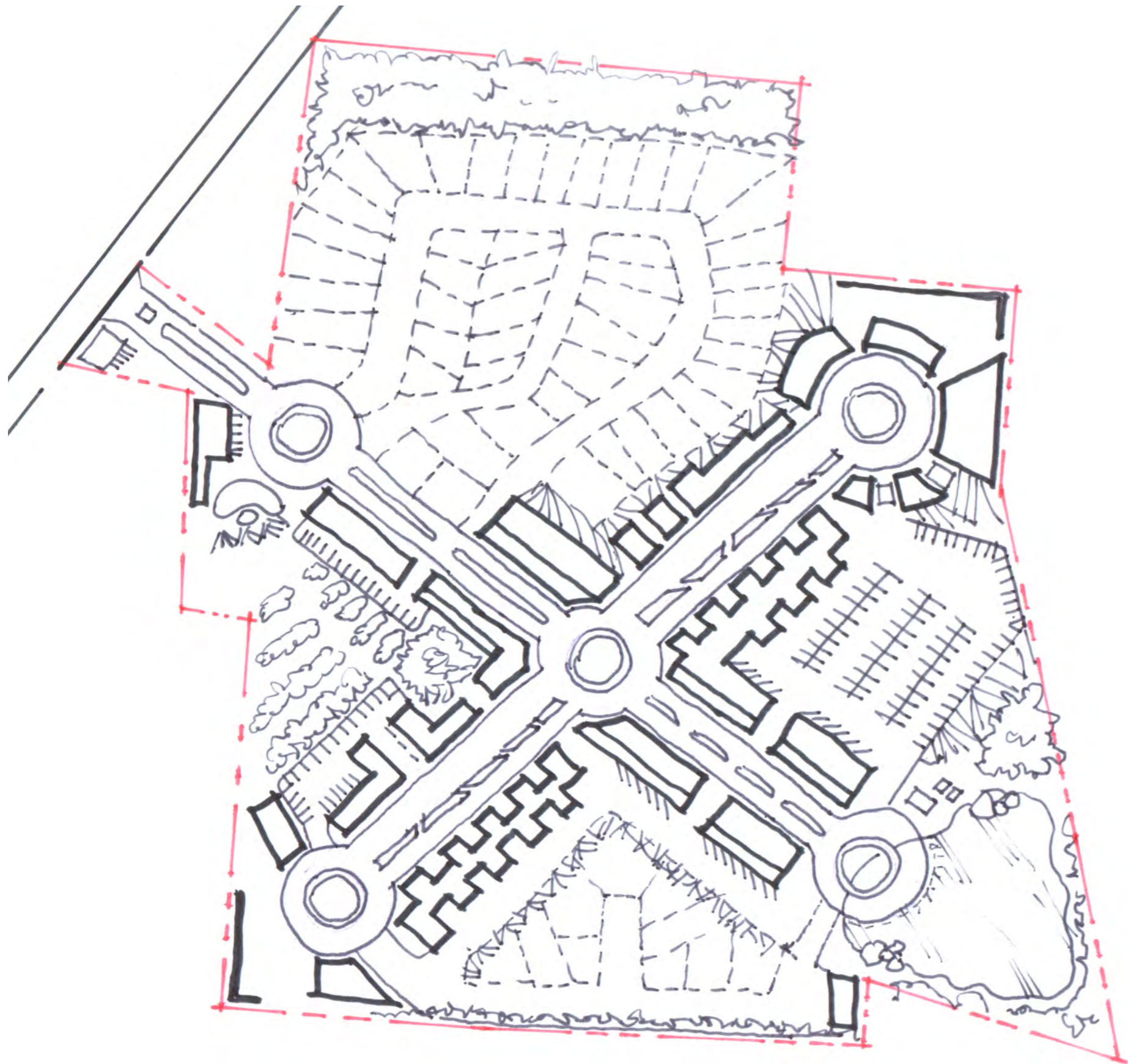
Green Alleys

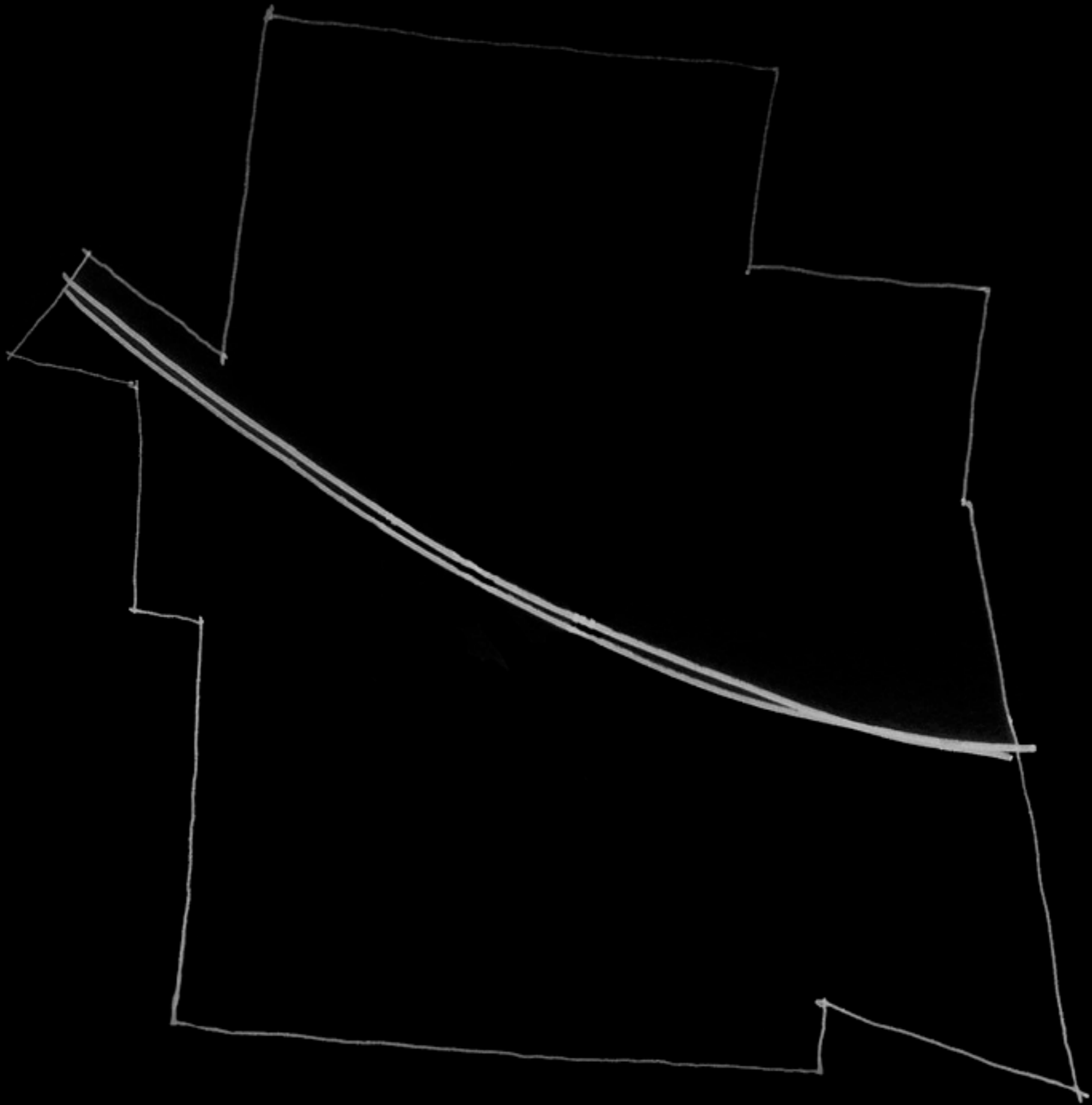


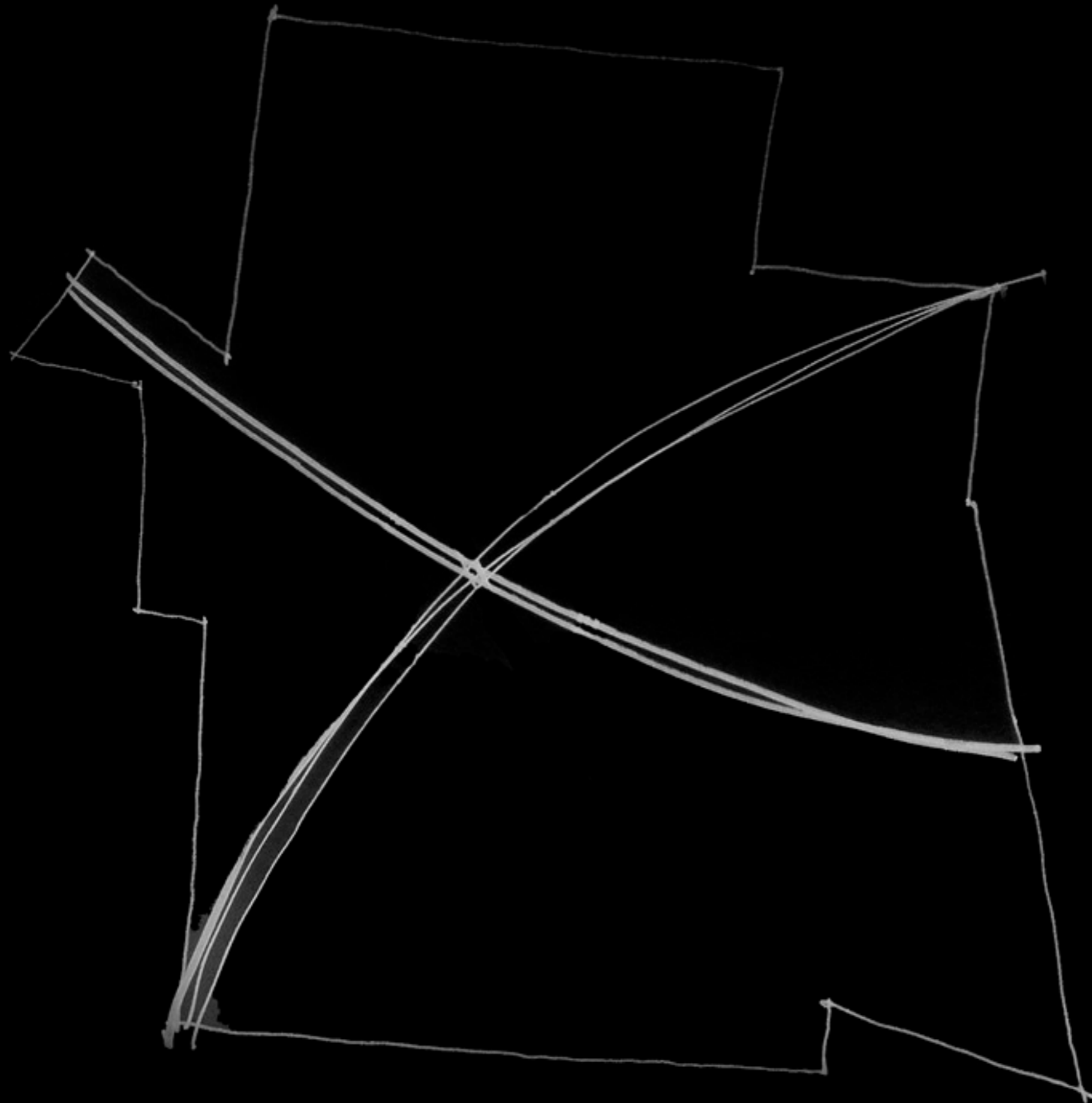


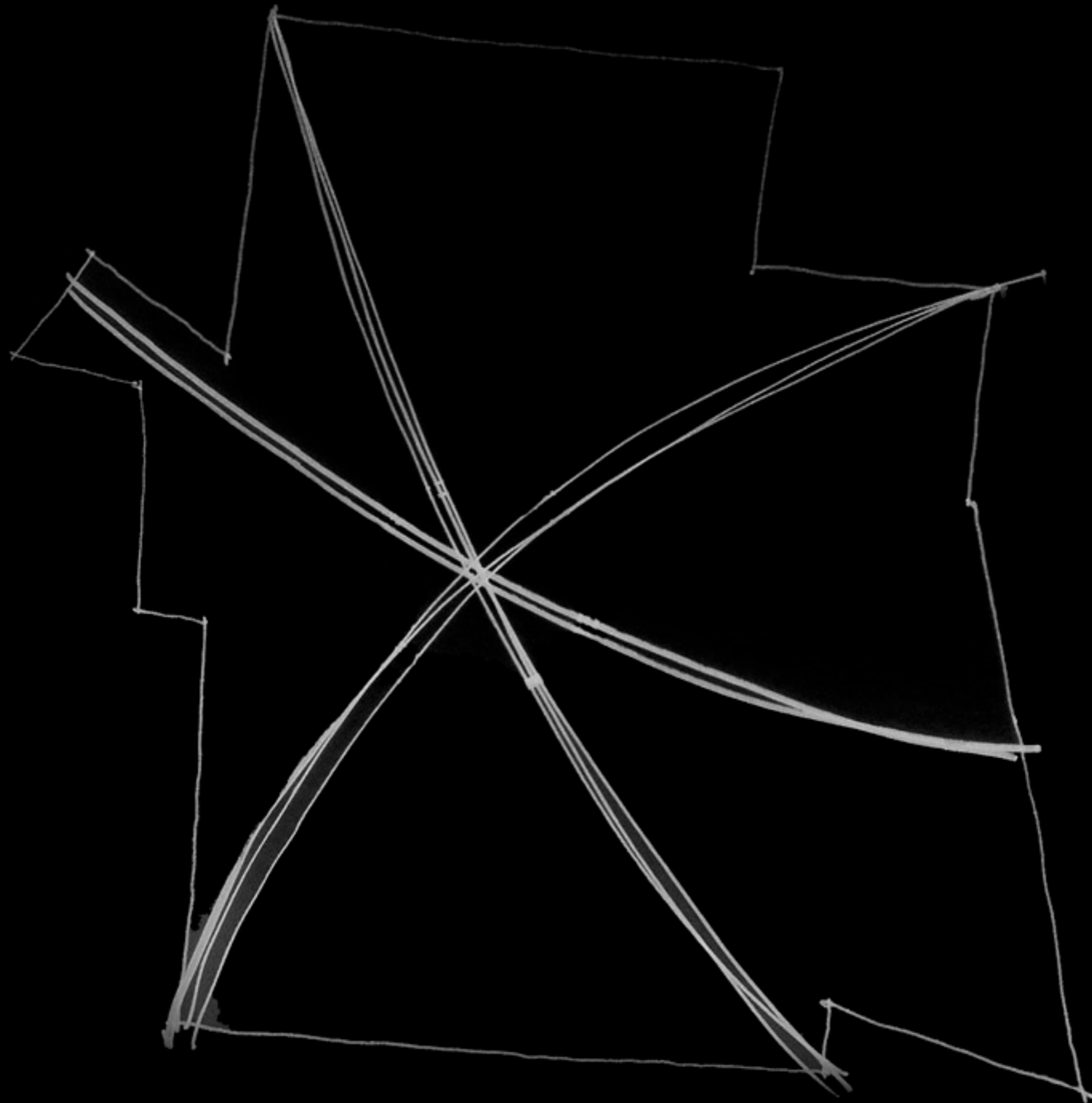


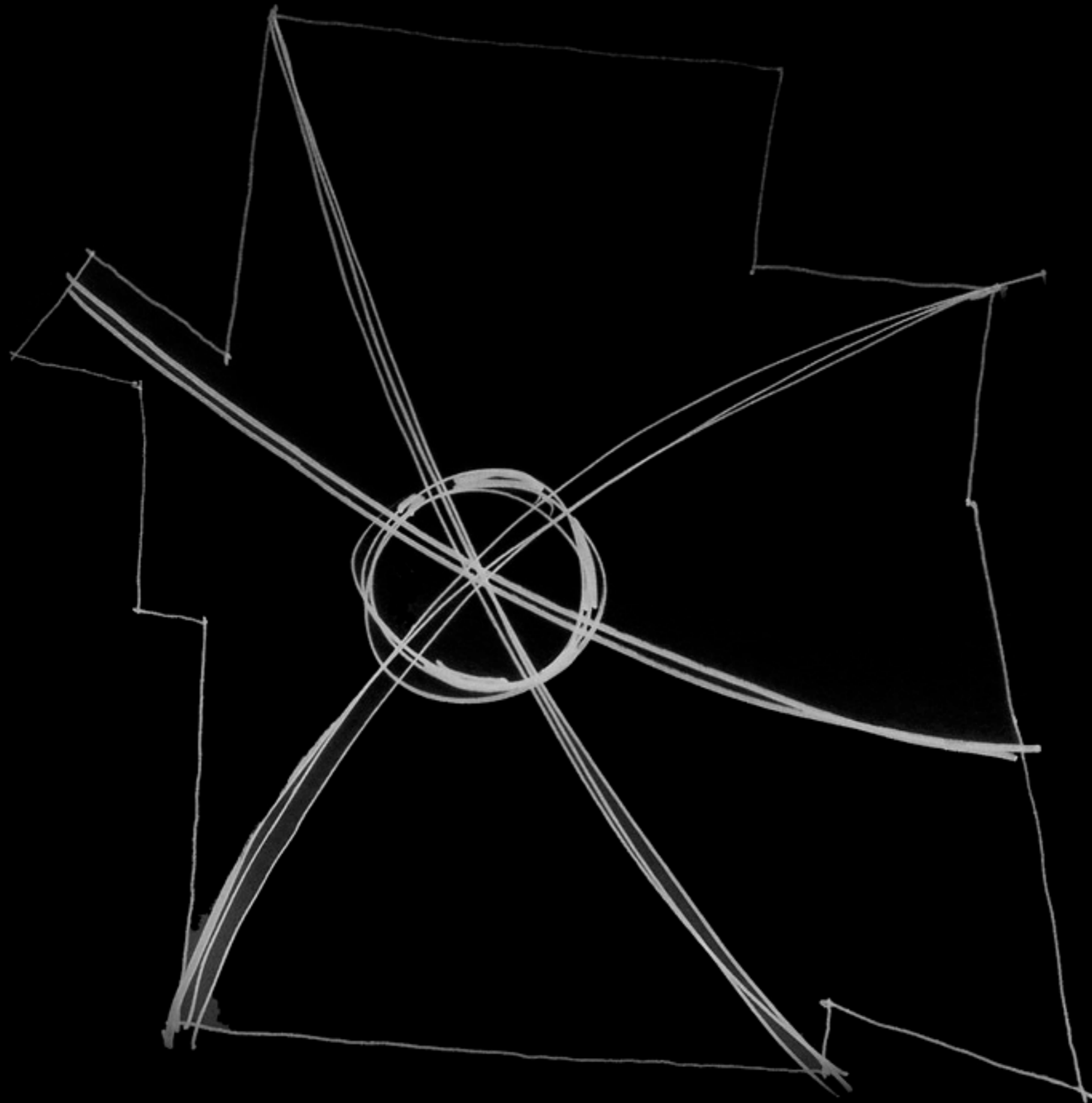






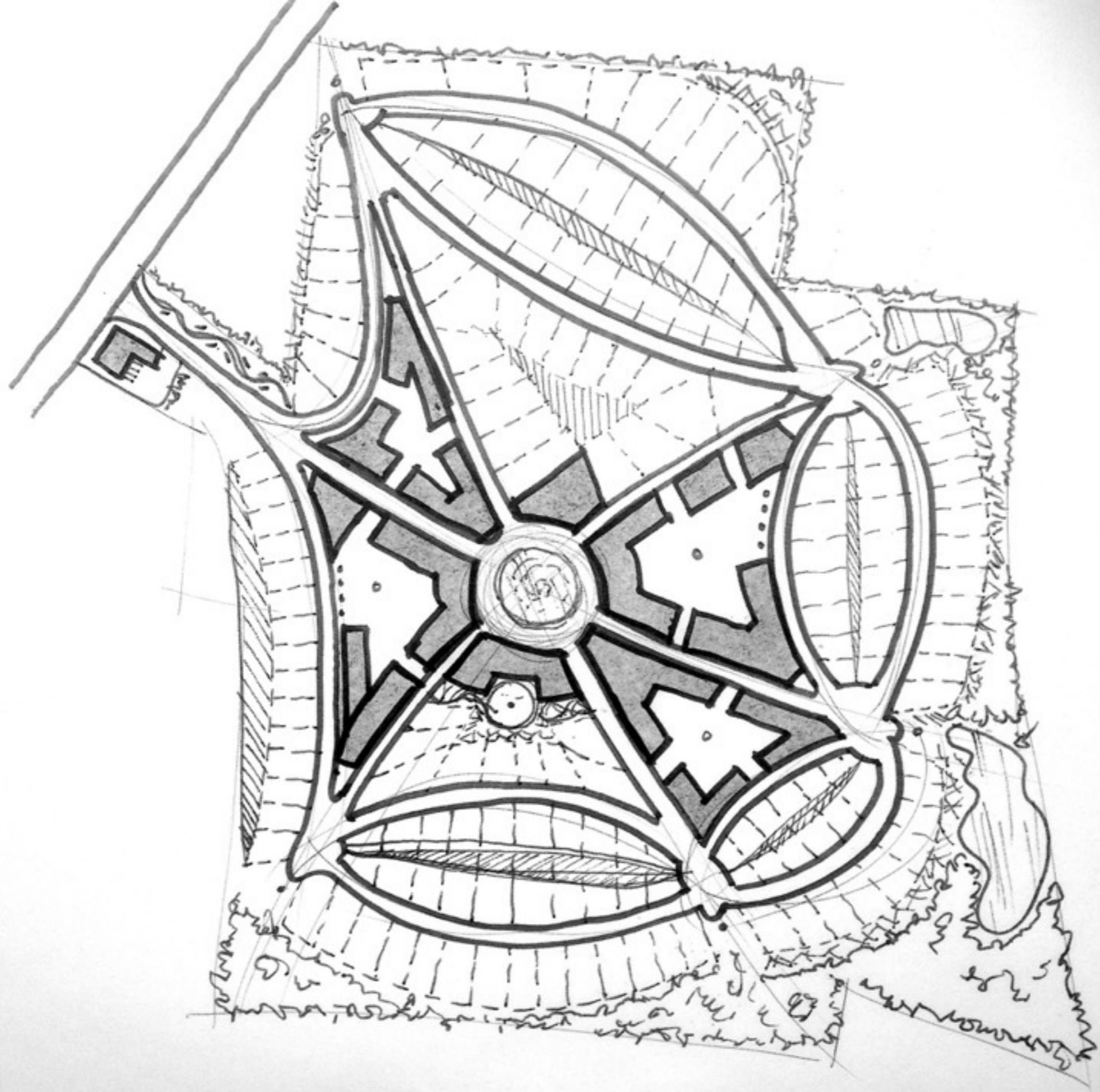


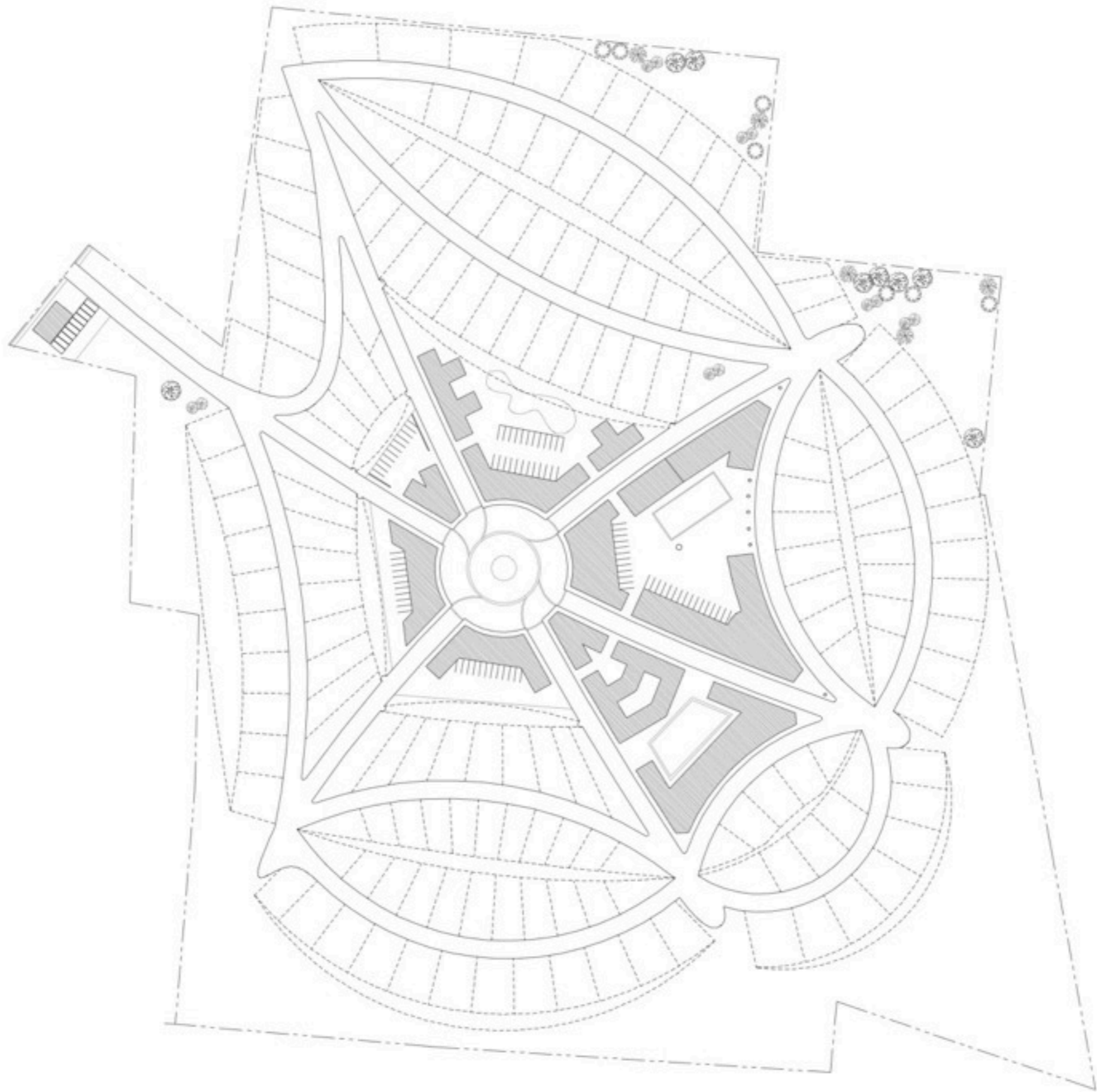


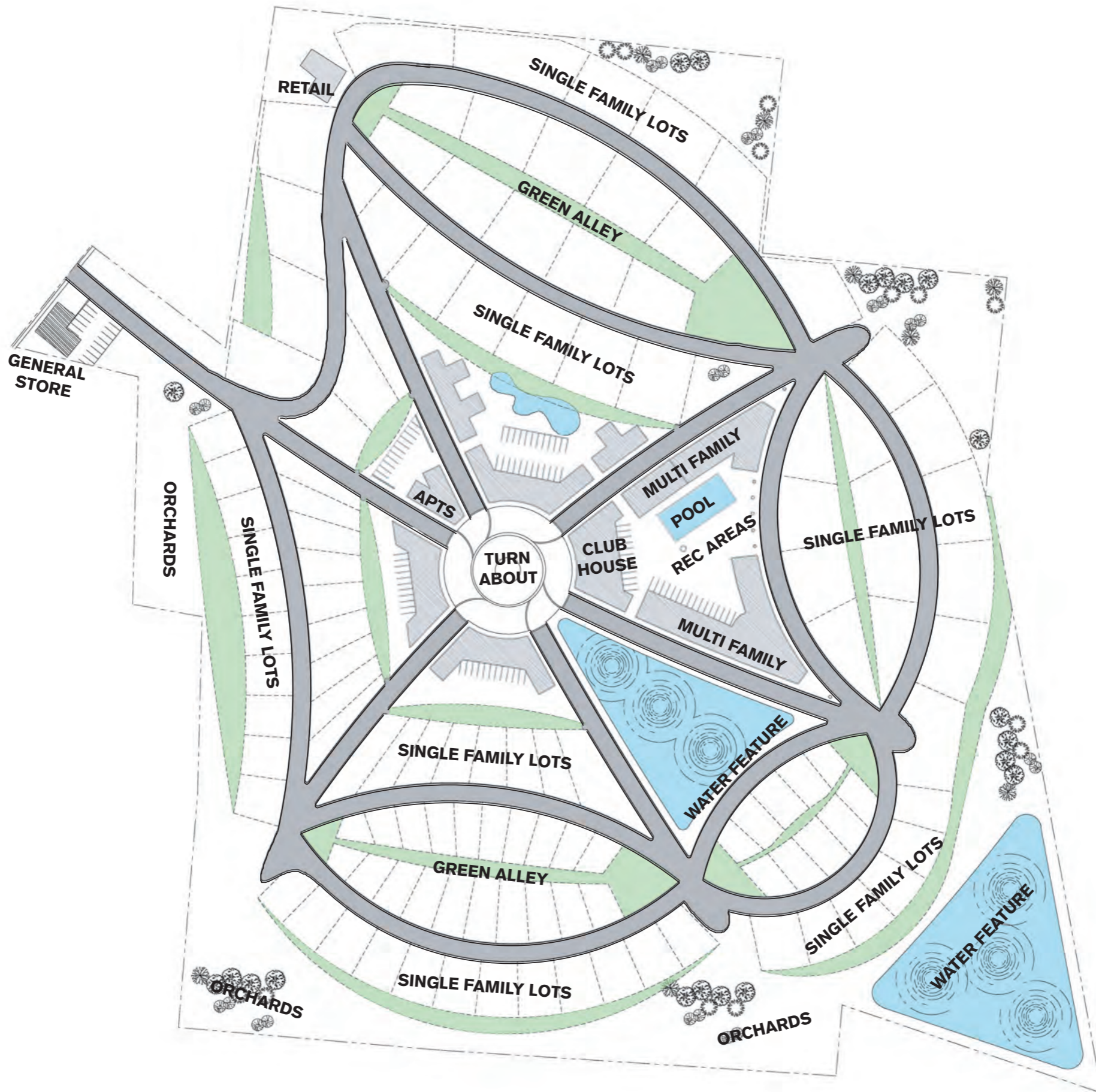




GRAPHIC
100 0 50 100
(IN FEET)
1 inch = 100 feet







TOTAL SITE AREA: 33.37 acres
 SINGLE FAMILY LOTS: 118
 MULTI-FAMILY UNITS: 90
 SITE DENSITY: 6.23 UNITS/ACRE



CALDWELL PLACE
 SITE PLAN CONCEPT SKETCH LAYOUT
 11 June 2012

CASE STUDY

Rendezvous Park at Glenwood

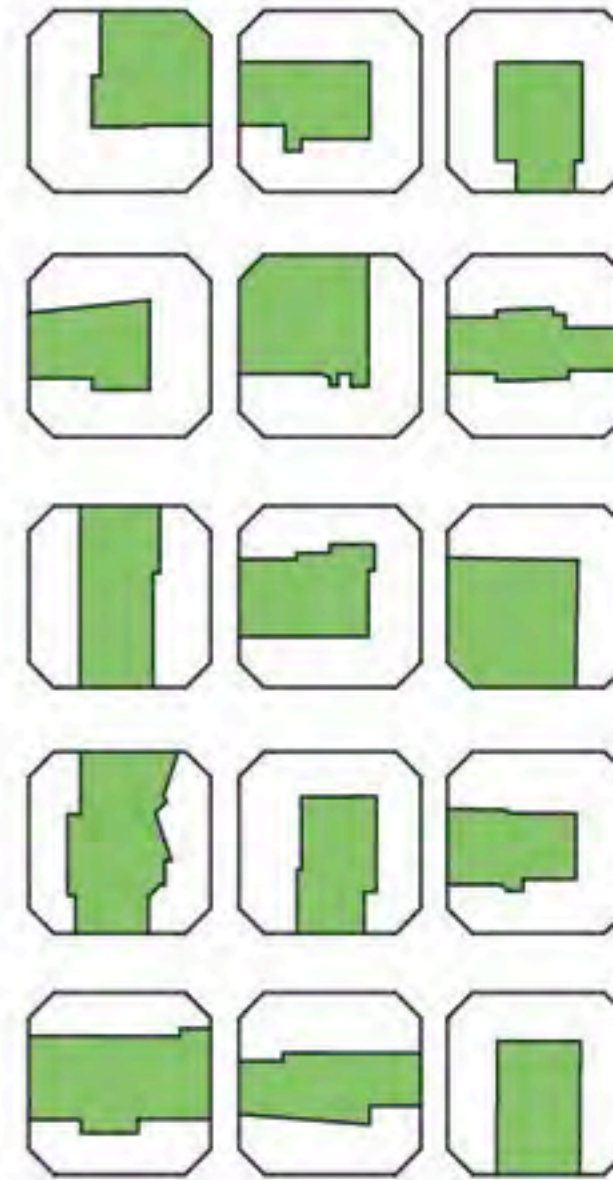
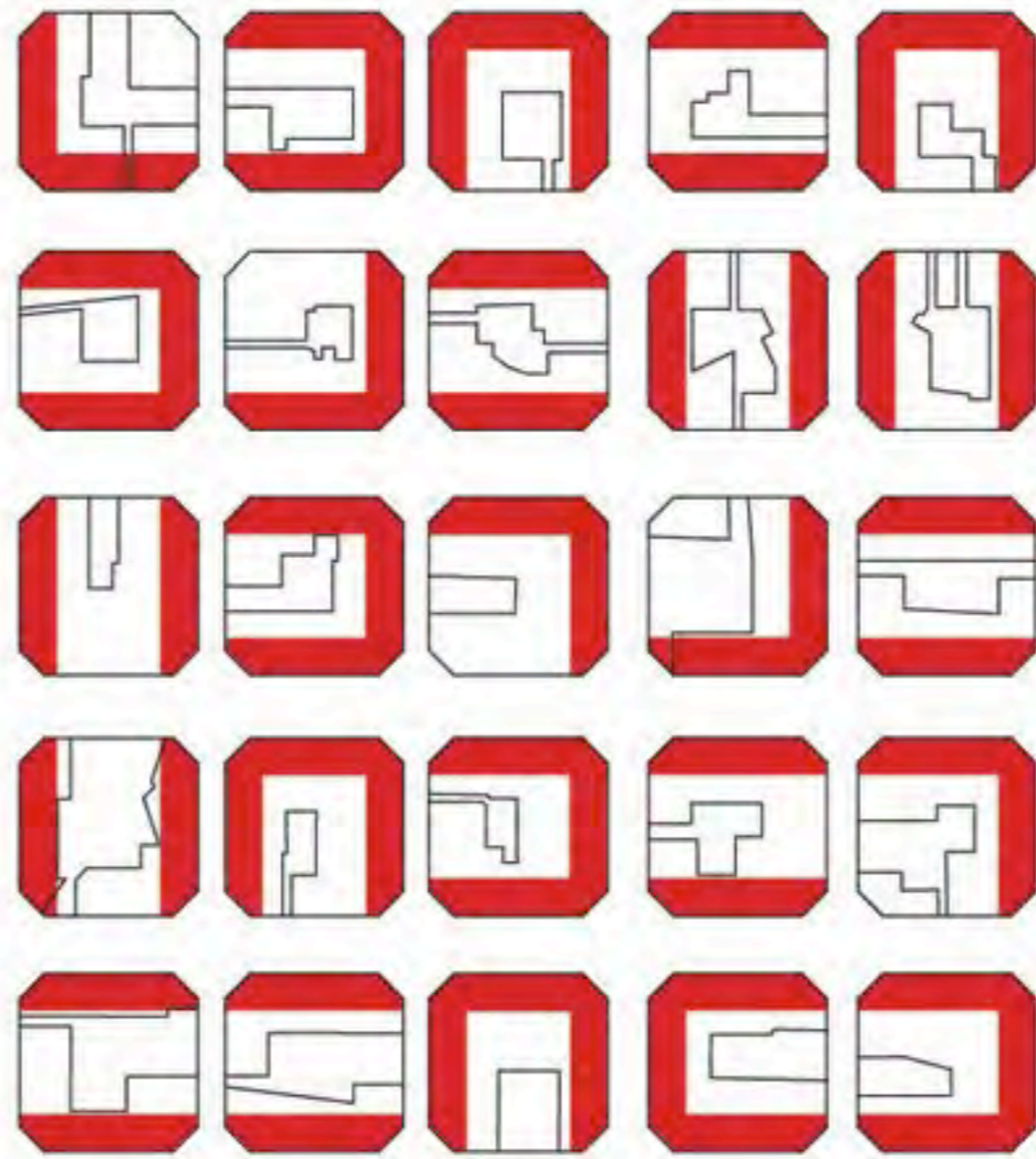
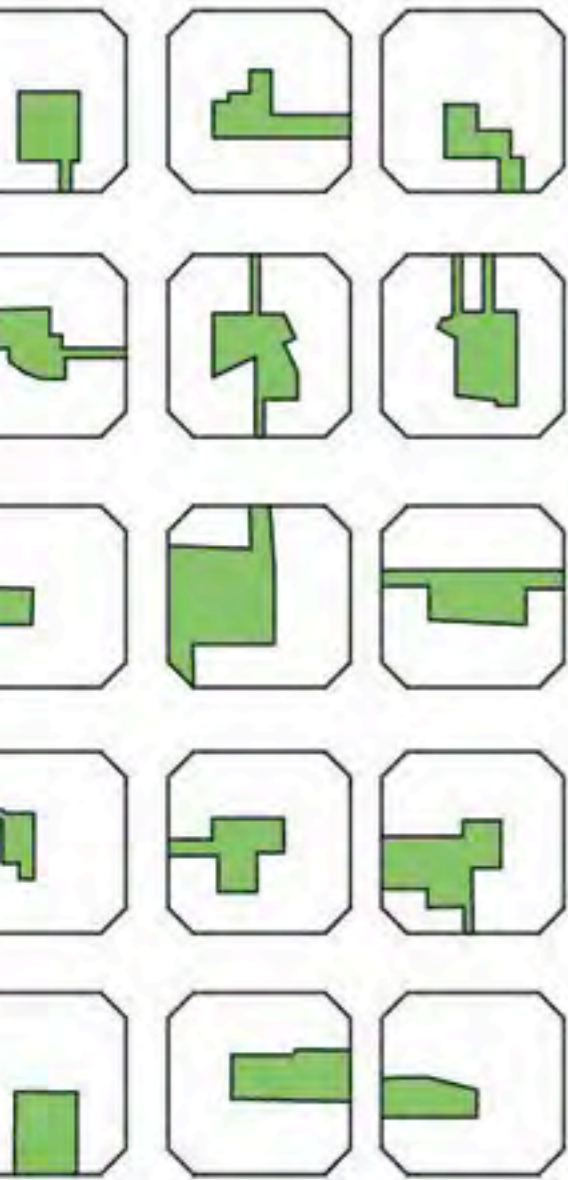
Developer project
on 20 acres site in Mesa, Arizona.





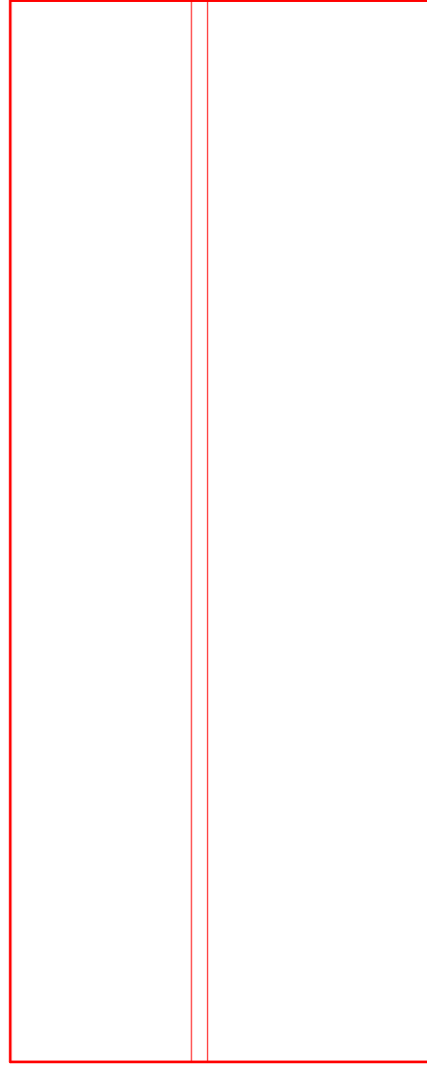


|| ㄱ ㄷ

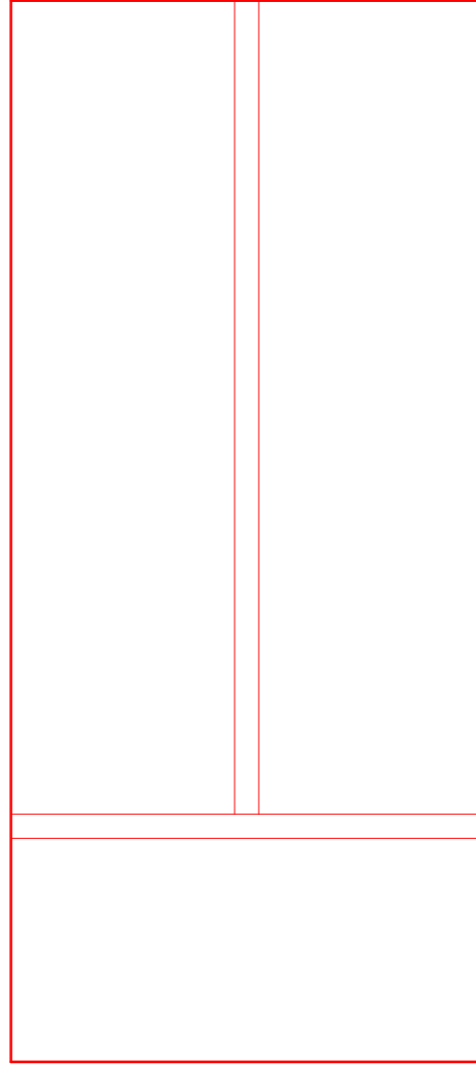


EXISTING BLOCK OUTLINE DIAGRAM

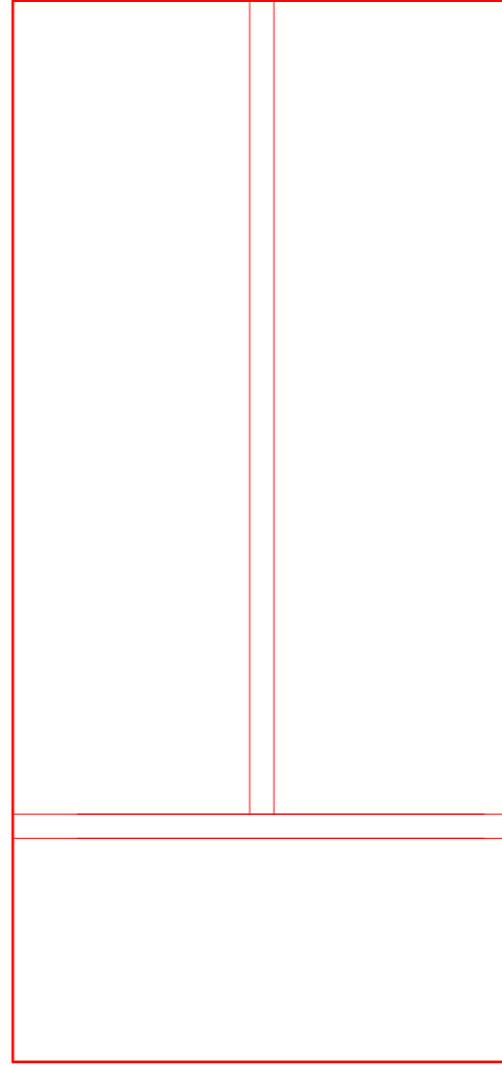
N. PASADENA STREET



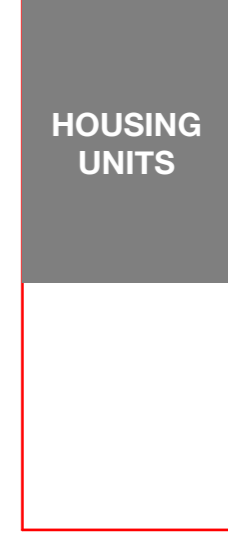
N. HIBBERT STREET



N. WILBUR STREET

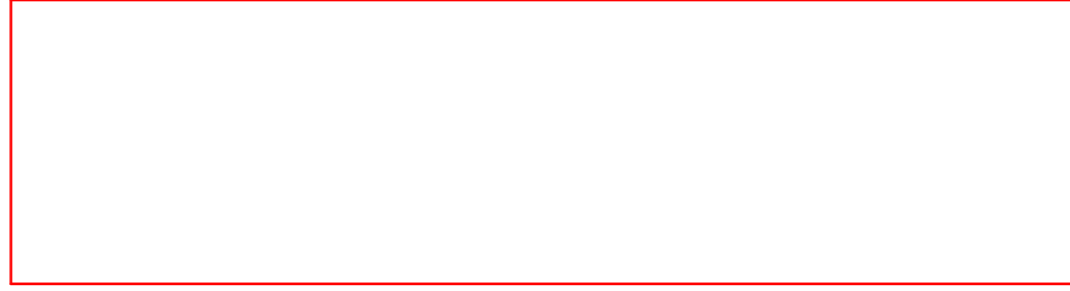


N. POMEROY STREET



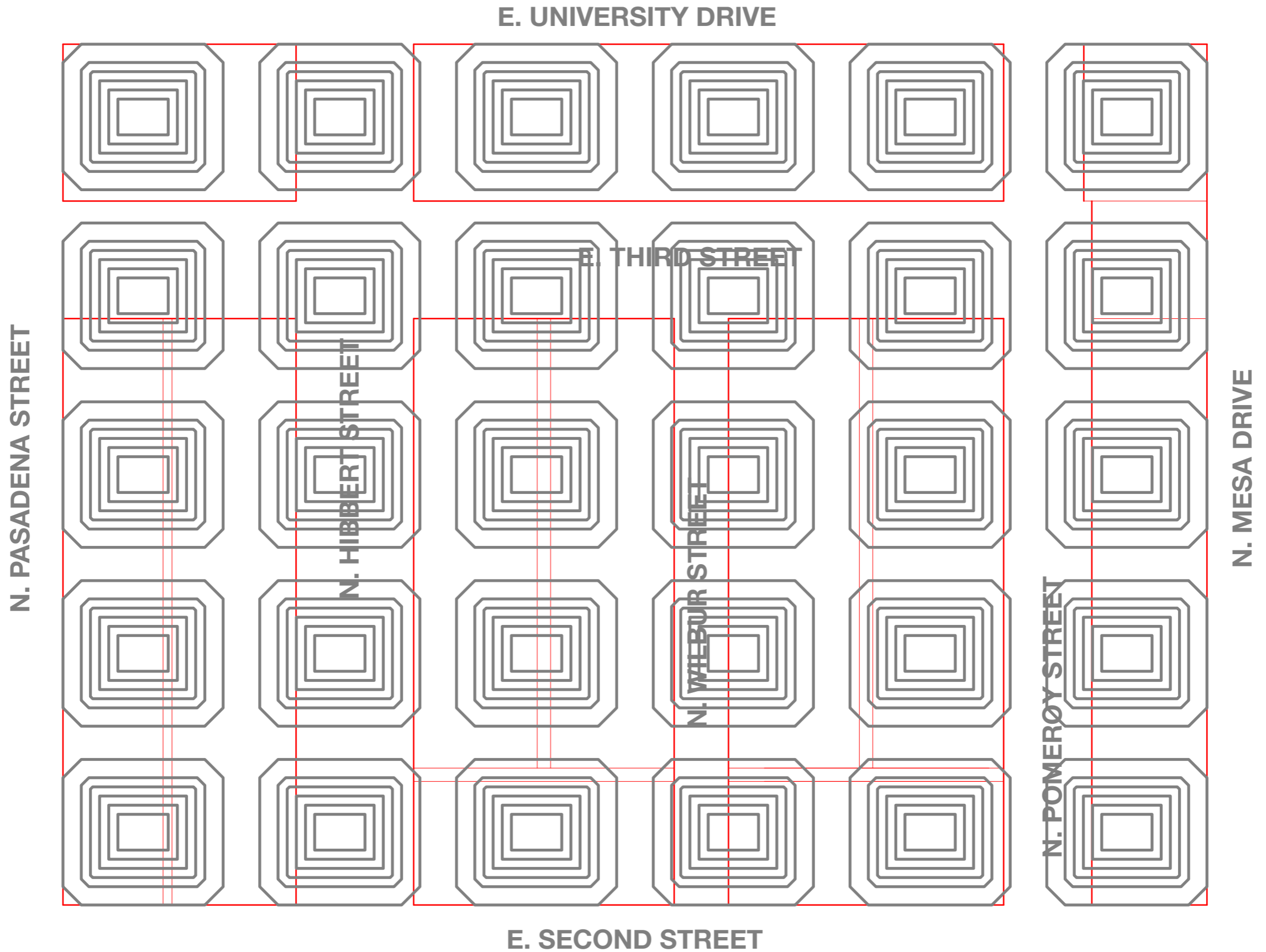
N. MESA DRIVE

E. UNIVERSITY DRIVE

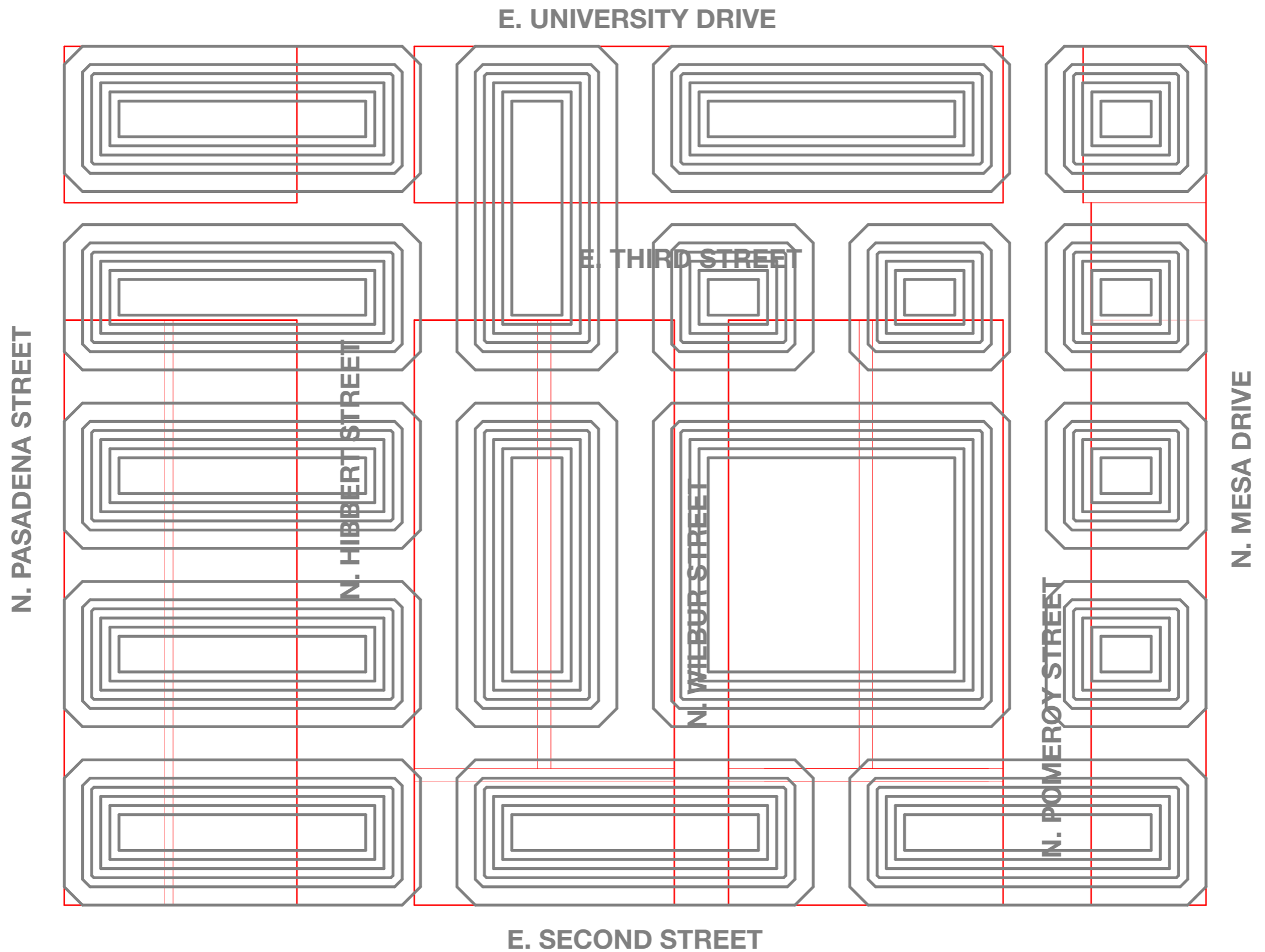


E. THIRD STREET

E. SECOND STREET

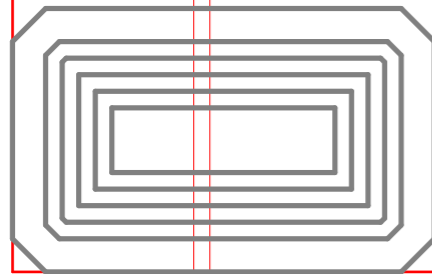
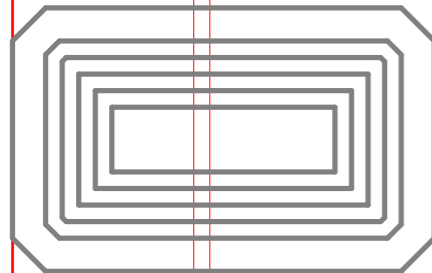
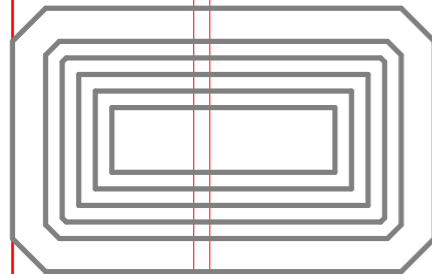
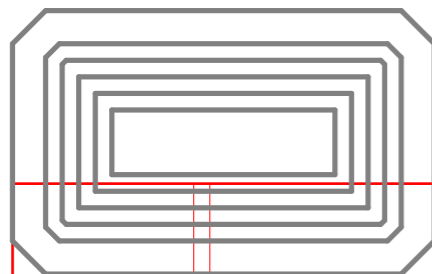


BARCELONA EIXAMPLE GRID OVERLAID ONTO SITE

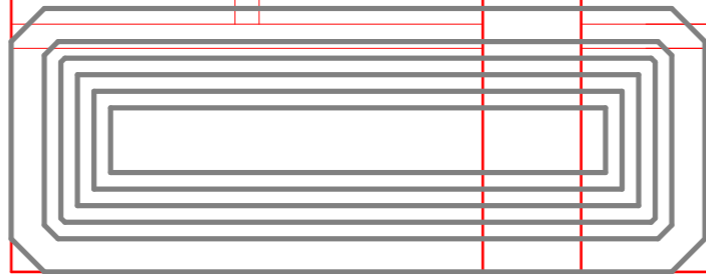
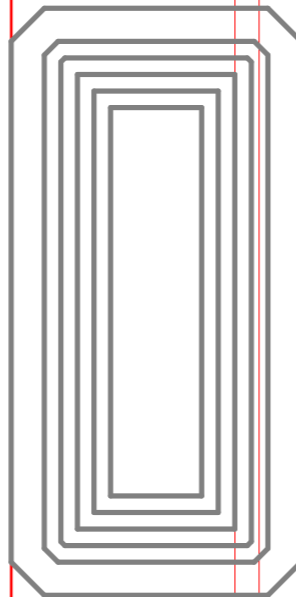
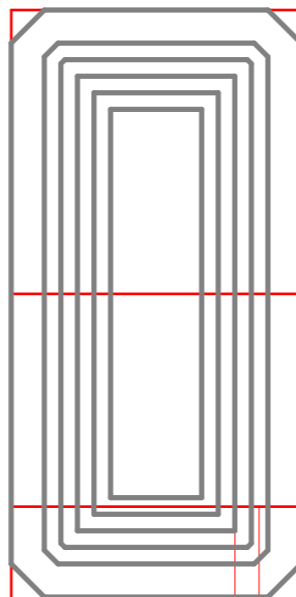


EIXAMPLE FIT TO NETWORK OF PEDESTRIAN STREETS

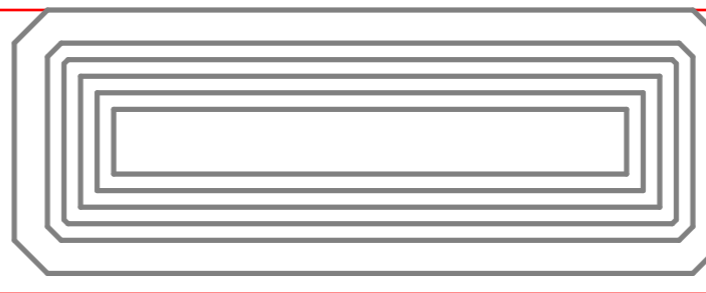
N. PASADENA STREET



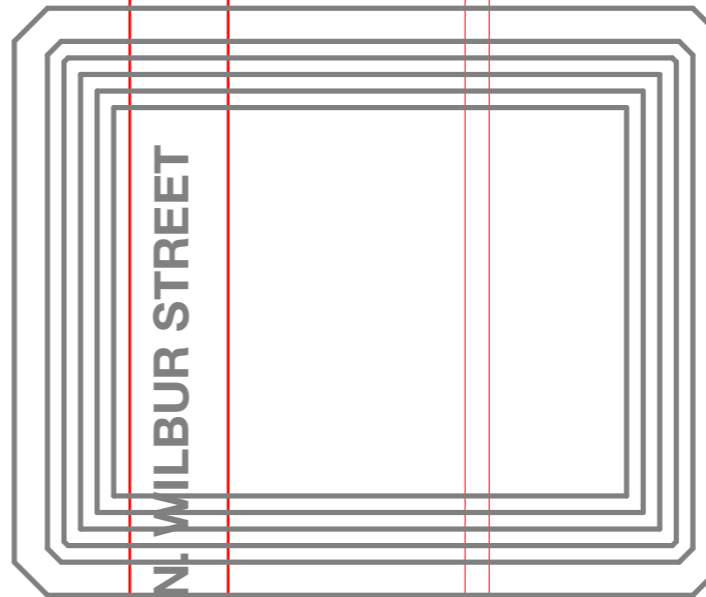
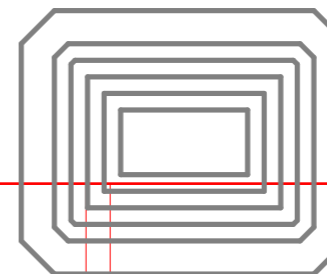
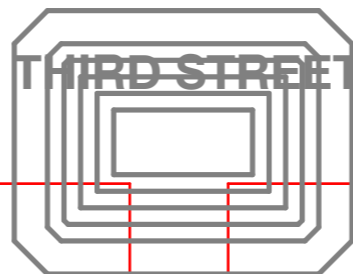
N. HIBBERT STREET



E. UNIVERSITY DRIVE

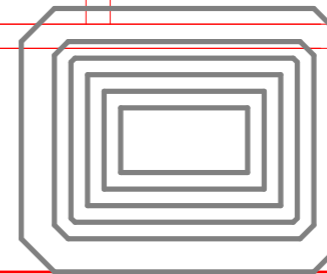


E. THIRD STREET

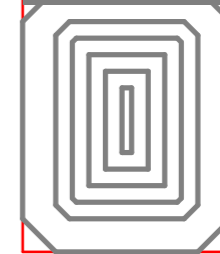
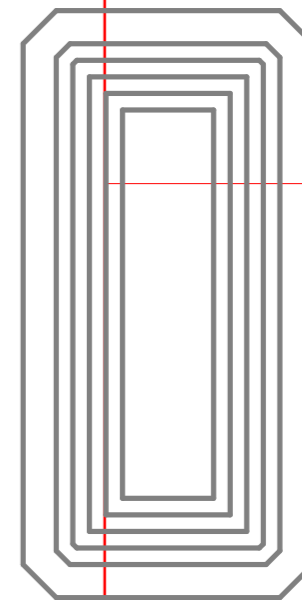


N. WILBUR STREET

E. SECOND STREET



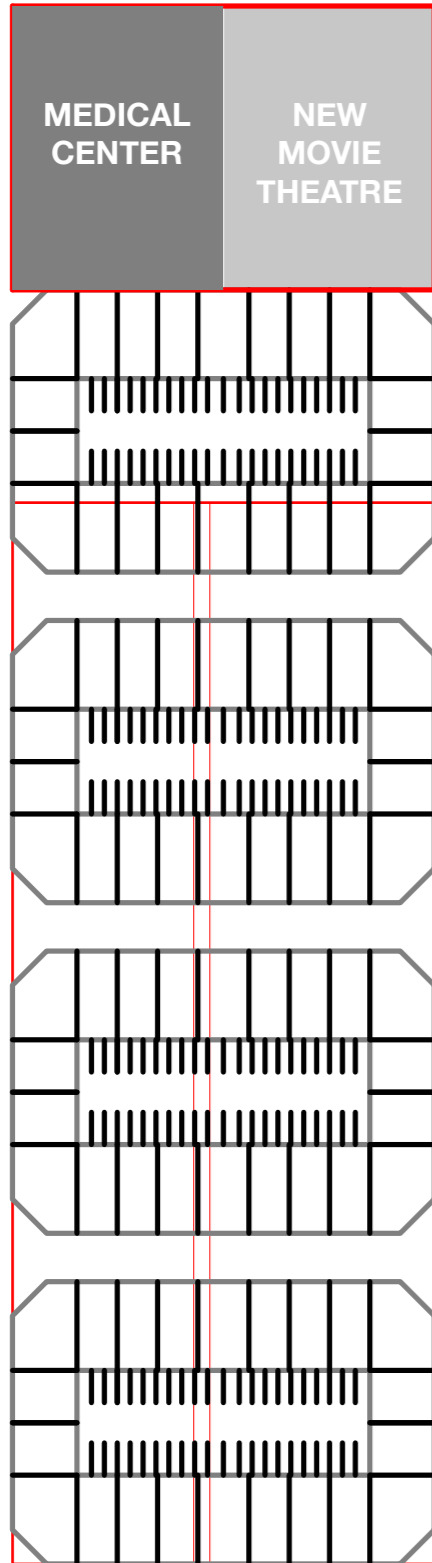
N. POMEROY STREET



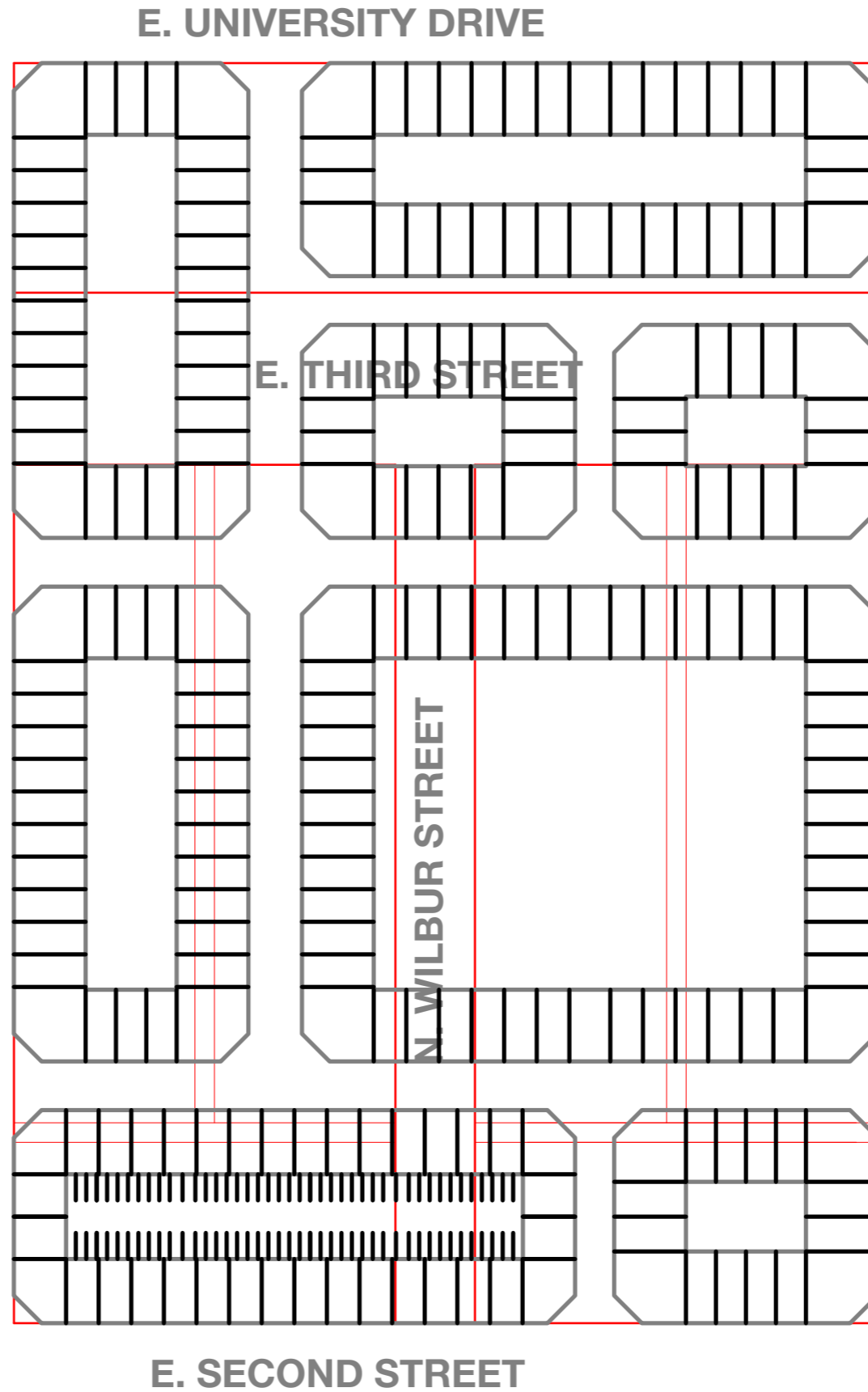
N. MESA DRIVE

GRID ADAPTED TO EXISTING STREETS AND LOTS

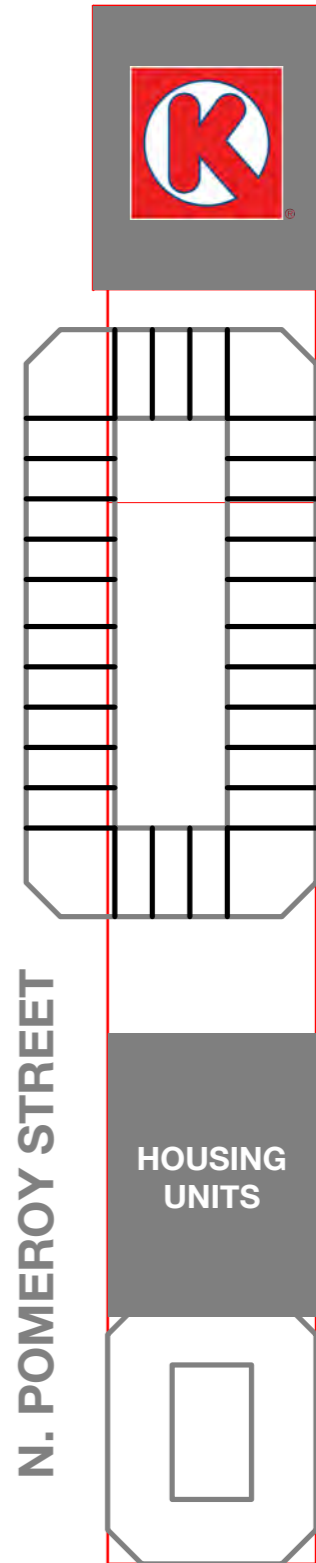
N. PASADENA STREET



N. HIBBERT STREET



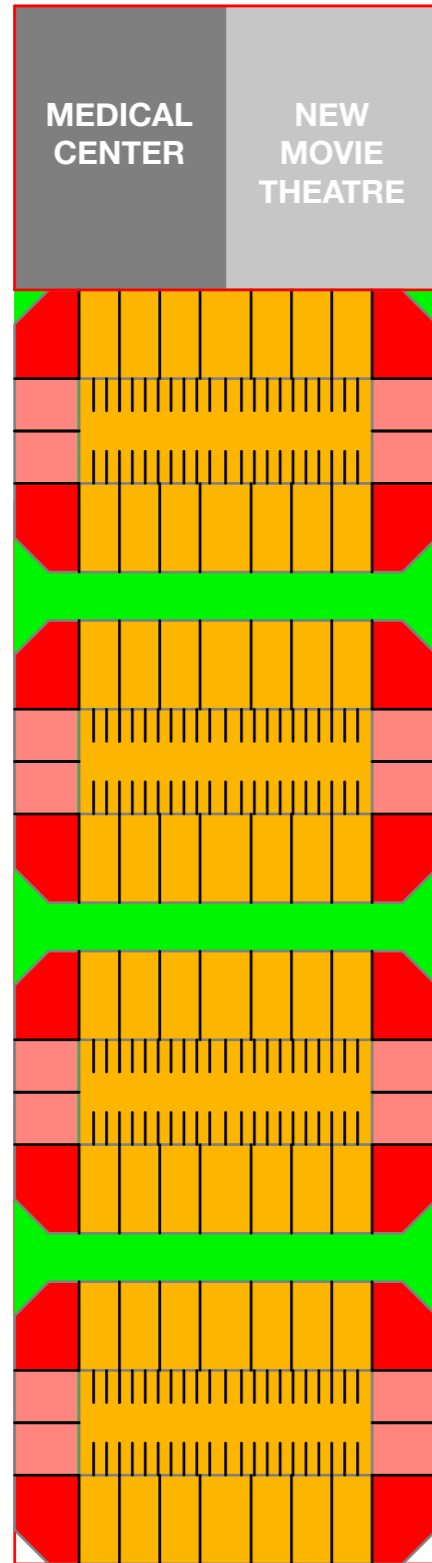
N. POMEROY STREET



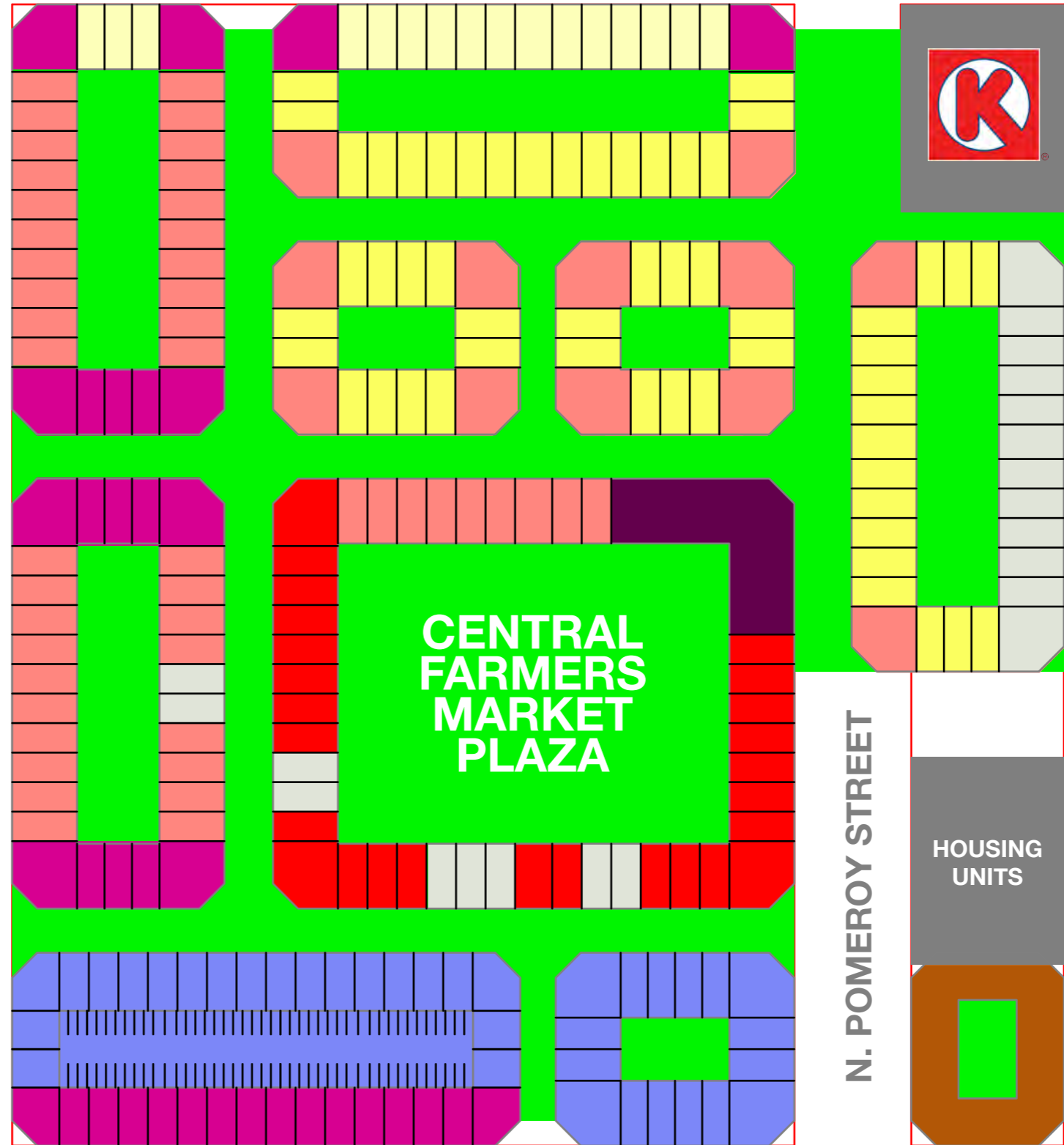
N. MESA DRIVE

FINAL BLOCK OUTLINES WITH UNIT TYPES

N. PASADENA STREET

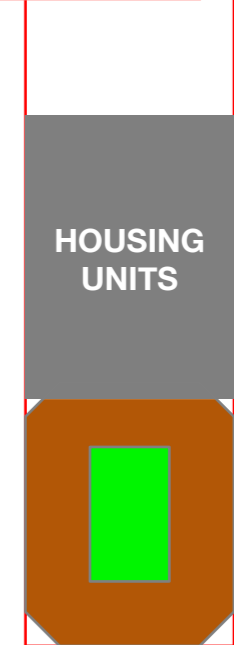


N. HIBBERT STREET



N. MESA DRIVE

N. POMEROY STREET



E. UNIVERSITY DRIVE

E. SECOND STREET

- STUDENT HOUSING
- ANCHOR RETAIL
- SERVICE RETAIL
- RETAIL / HOUSING ABOVE
- ASSISTED LIVING
- EDUCATION CENTER
- TOWNHOUSES
- HOUSING
- OFFICES
- PUBLIC SPACE / NO CARS
- GROCERY STORE

ZONING DIAGRAM

E. UNIVERSITY DRIVE

MEDICAL CENTER
NEW MOVIE THEATRE



N. PASADENA STREET

N. HIBBERT STREET

N. MESA DRIVE

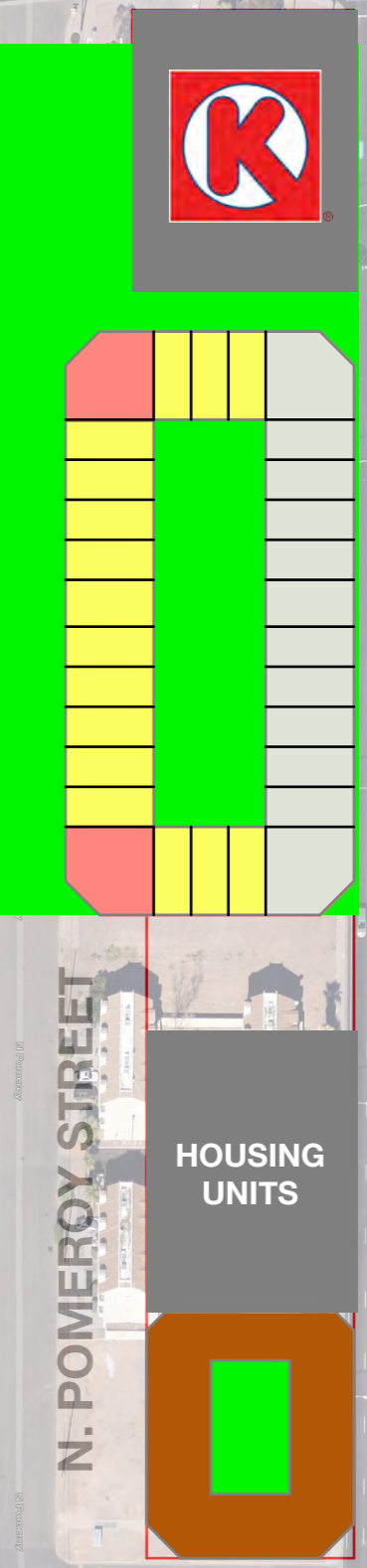
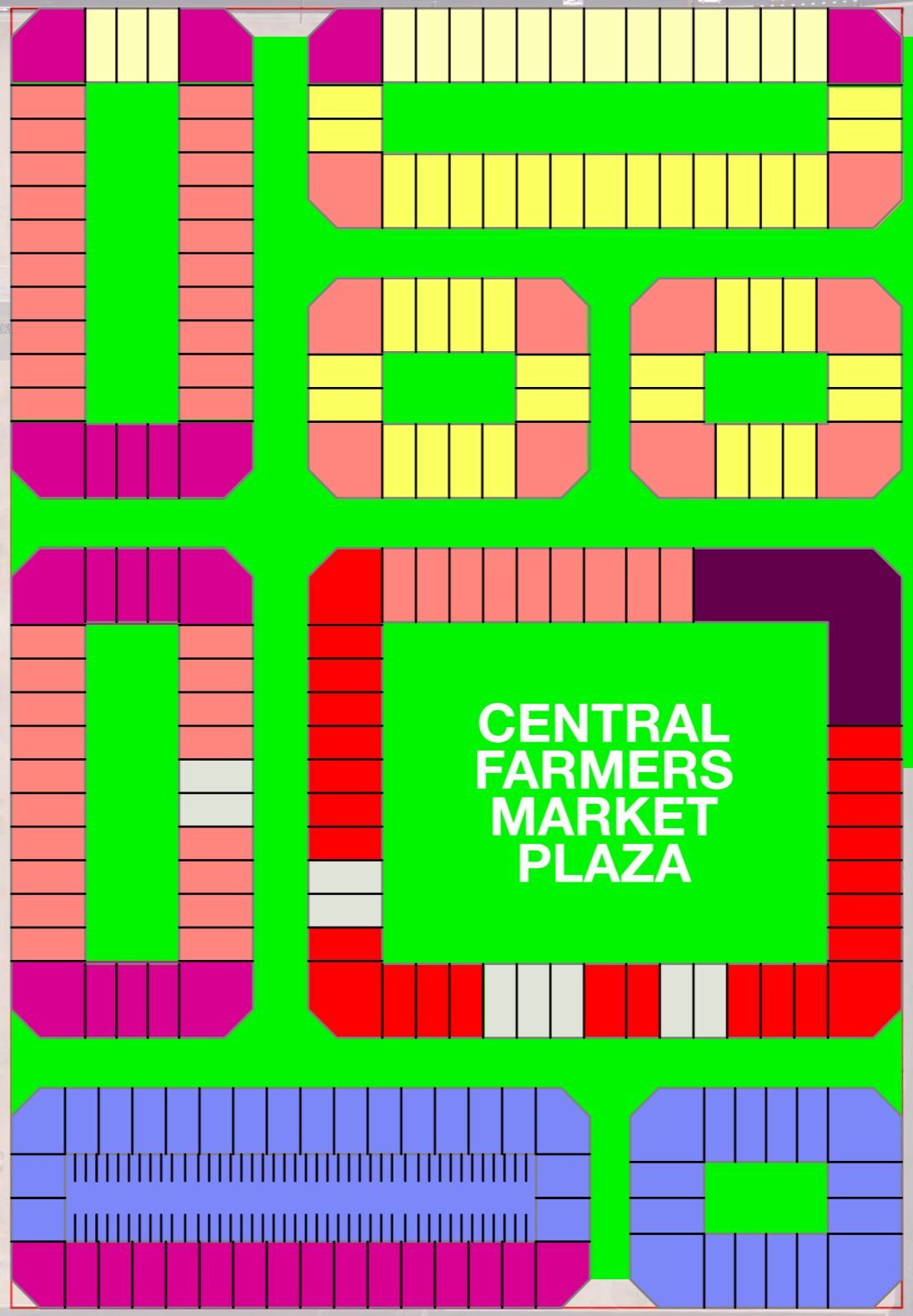
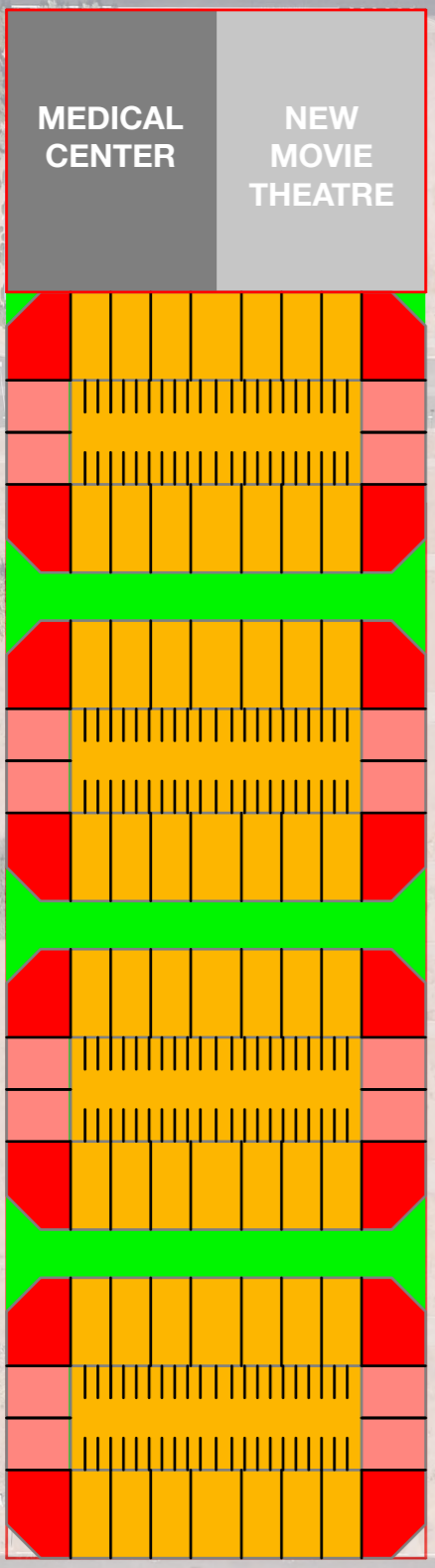
CENTRAL FARMERS MARKET PLAZA

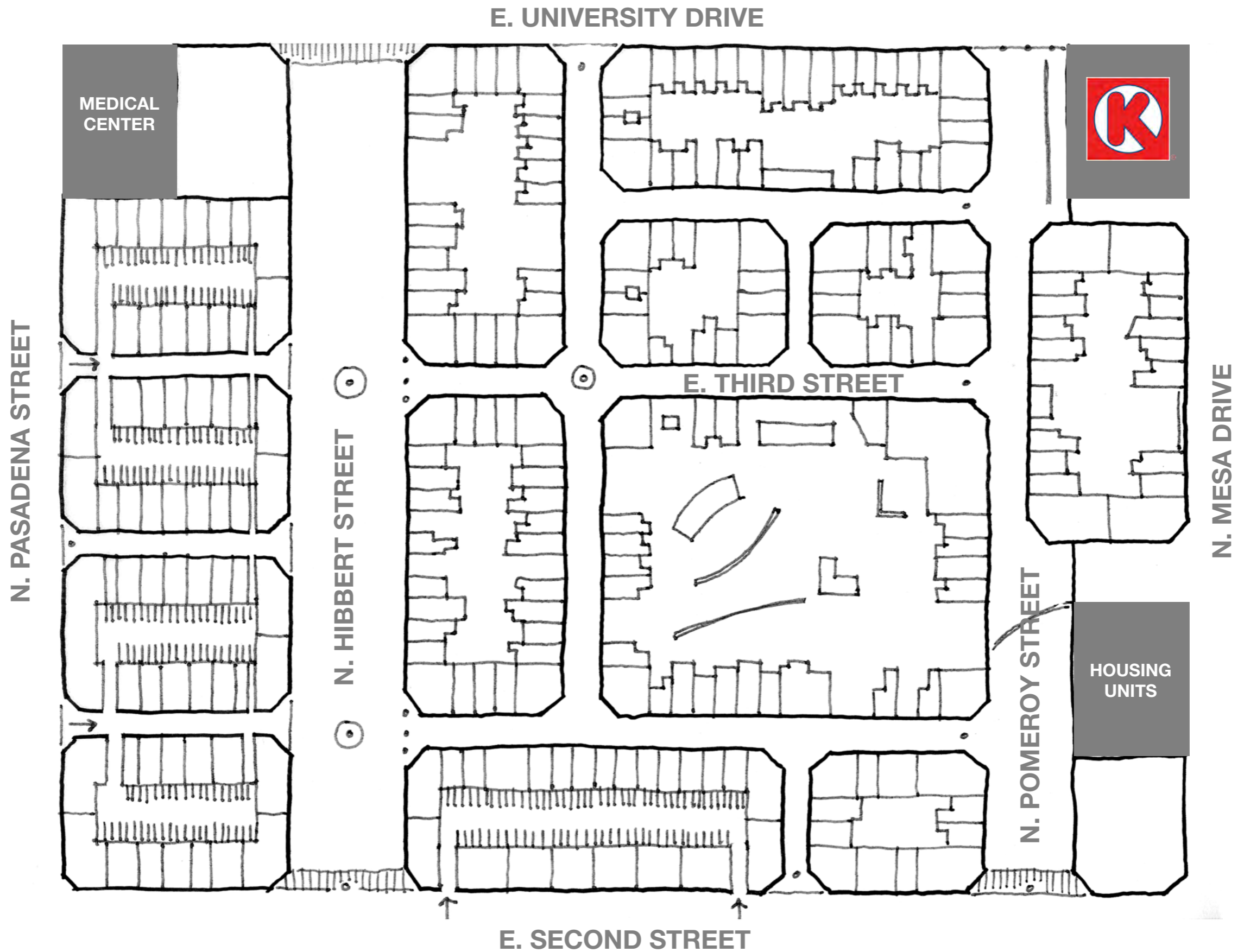
N. POMEROY STREET

HOUSING UNITS

E. SECOND STREET

ZONING DIAGRAM





FINAL SITE PLAN SKETCH SHOWING ORGANIC INFILL





STROGET 50ÅR FESTDAGE
31.8 - 2.9 2012









CASE STUDY

Sunline Transit Learning Center

Net-zero educational exhibits focused
on hydrogen powered bus fleets.







SunLine
LEARNING CENTER

SUNLINE LEARNING CENTER
DEDICATED OCTOBER 2012

BOARD OF DIRECTORS

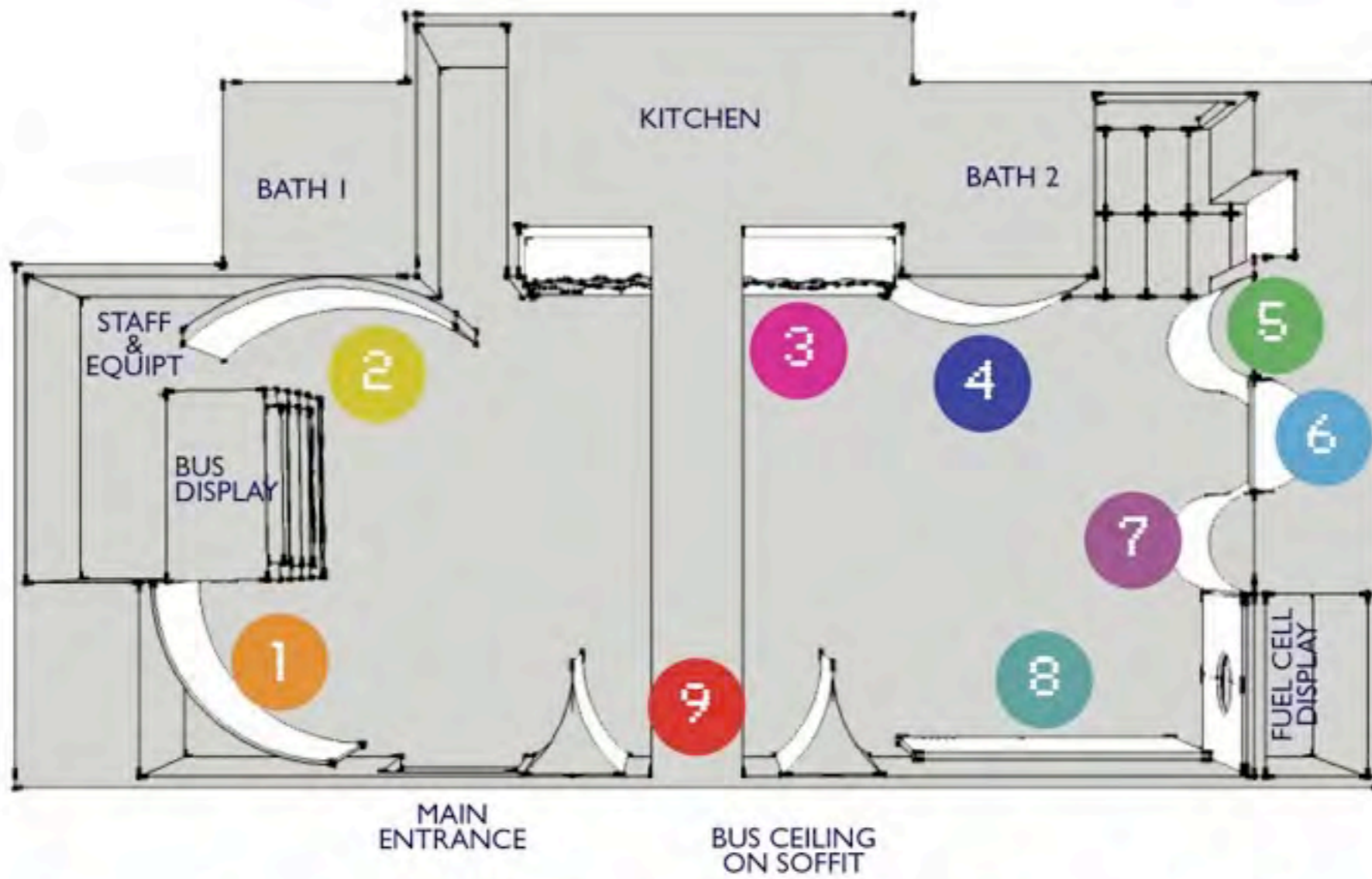
ROBERT A. VINCIGLIONE PALM BEACH	WILLIAM POWERS MIAMI BEACH
TYRONNE PARKS, VICE CHAIR DEER BEACH SPRINGS	DON ADOLPH LA JOLLA
RICK HULL, VICE CHAIR PALM BEACH	GLENN MILLER INDO
CHARLES "BOB" ENGLAND LAKE WORTH CITY	EDUARDO GUERRA DACHULA
G. DANIEL HOBBS RANCH WOODBRIDGE	JOHN J. BENNETT MERRIDGE COUNTY

C. BRUCE COLBERT
GENERAL MANAGER

EDUCATIONAL PARTNERS

AVIS	CALTRANS	THE U.S. FORD GROUP
BAE SYSTEMS	ELIZABETH NATIONAL	ORGANIC ARCHITECT
BILLBOARD	HANDOVER DISPLAYS	TRAVEL GROUP





- 1 **WELCOME & SIGN IN**
- 2 **CITIES**
- 3 **AWARDS**
- 4 **VEHICLES**
- 5 **SOLAR & WIND**
- 6 **FUELS**
- 7 **HYDROGEN**
- 8 **IMPACT & FUTURE**
- 9 **OPEN**

TODAY

The U.S. gets **90%** of its energy from nonrenewable sources. Our growing demand for energy resources calls for reexamining today's

35%

OIL

26%

22%

9%

5%

2%

1%

COAL NUCLEAR GAS NATURAL GAS HYDRO OTHER

GLOBAL ENERGY CONSUMPTION WILL GROW **33%** BY 2035

while global energy related carbon emissions could rise by **20%**



2050

Renewable can displace our dependency on fossil fuels, not only for energy, but for

\$5,000,000,000

in economic development

4%

2%

23%

26%

43%

HYDRO HYDROGEN COAL NUCLEAR NATURAL GAS WIND SOLAR & OTHER RENEWABLES

FROM 2004 - 2011

the cost of **SOLAR** DECREASED

72%

\$4/watt to \$1.13/watt



WHILE AT THE SAME TIME...

the cost to **DRIVE**



INCREASED

68%

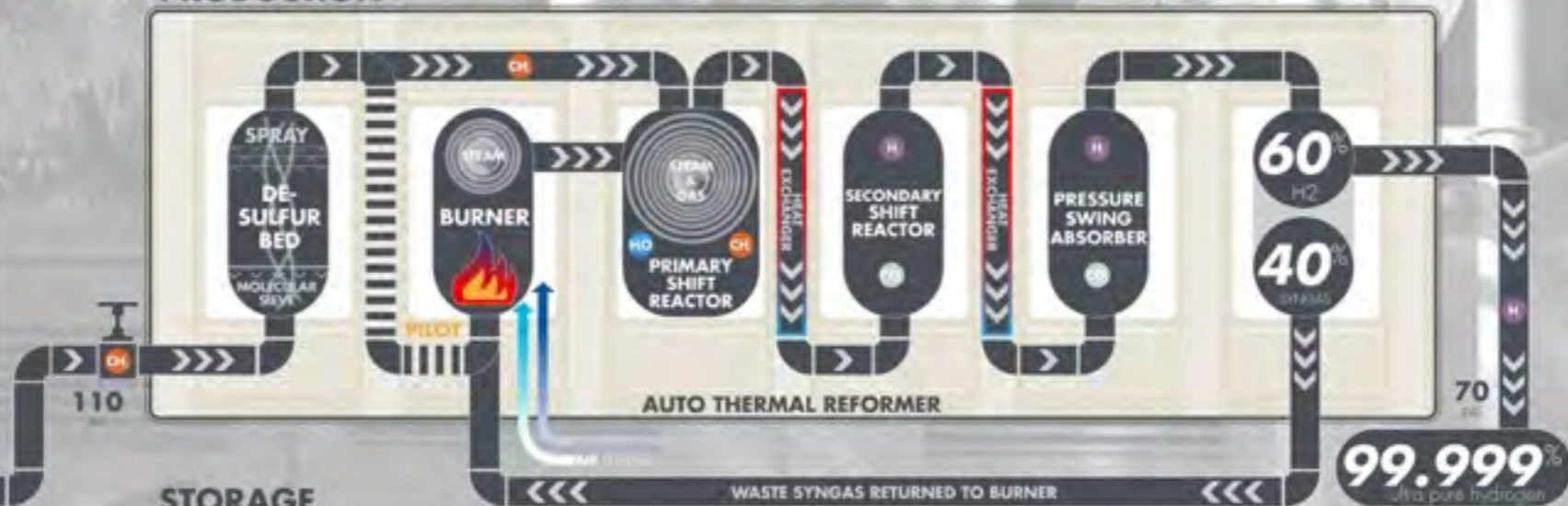


our renewable energy systems provide enough electricity to power more than

200 HOMES for a year.

HOW HYDROGEN BECOMES VEHICLE FUEL

PRODUCTION



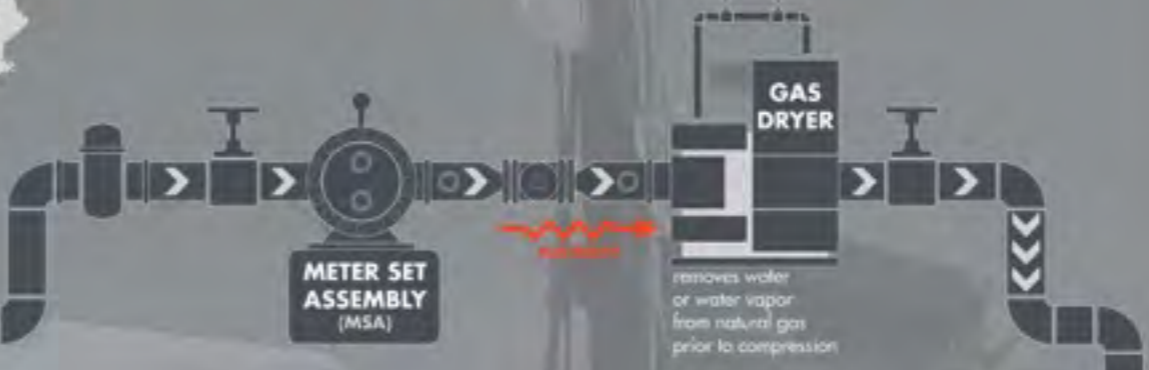
STORAGE



FUEL CELL BUS



HOW NATURAL GAS BECOMES VEHICLE FUEL



10.4 gallons per minute

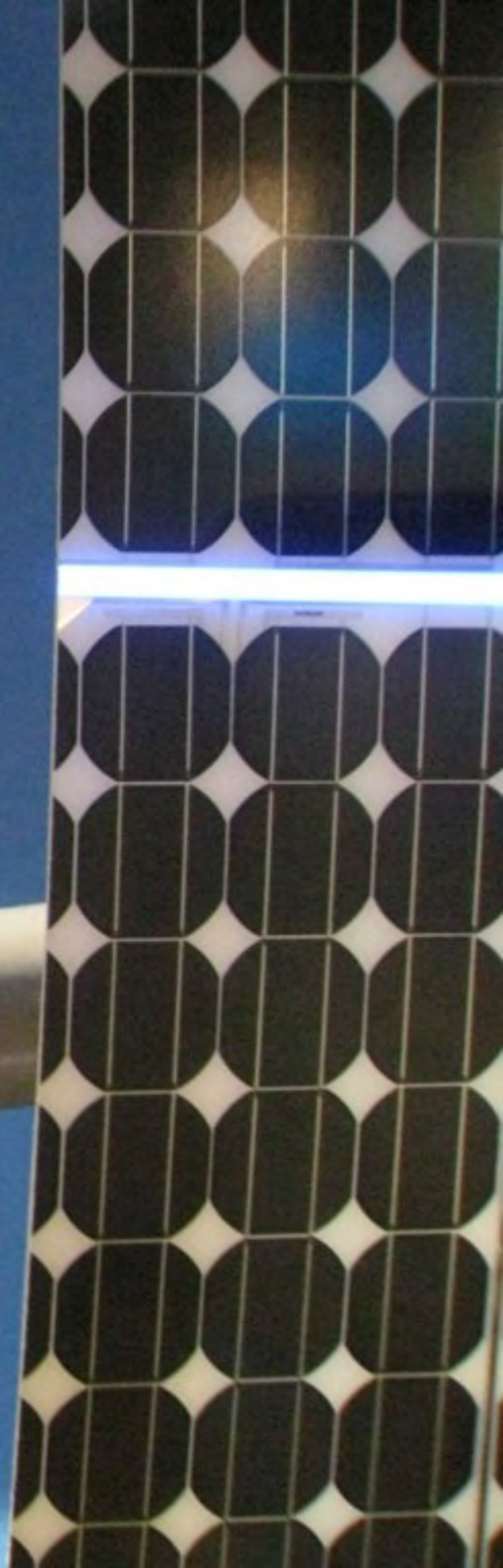
cost breakdown

up to **90** less smog
40 less green house gas

5½ minutes to fill up



RENEWABLE



CARBON EMISSIONS



SUNLINE TRANSIT
21,323,851
895,960
7,947,165

IMPACT

PUBLIC TRANSIT?
CARBON EMISSIONS?
SUNLINE TRANSIT



OTHER EVOLVING



SUNLINE

SunBus

WELCOME

GUEST BOOK

Sunline



off the road saving more than 2,160,000 pounds of CO₂

WELCOME

sunBus

MILESTONES

444

229

139

81

38

0

IMPACT

PUBLIC TRANSIT?

32%	16%	5%
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CARBON EMISSIONS?

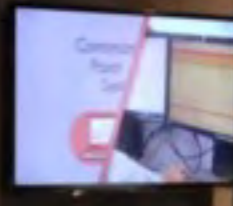
438	2900	500
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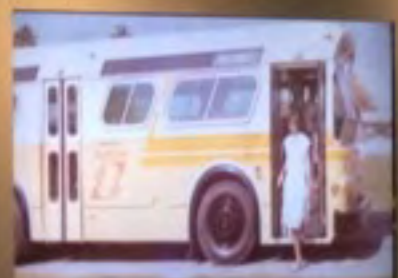
its Ridership: 2,534,590



Reduction of CO₂



1 (+2.7%)  Year-To-Date Ridership: 2,534,5



MILESTONES

EVER EVOLVING

HYDROGEN FUEL

ElDorado National

OVGIL

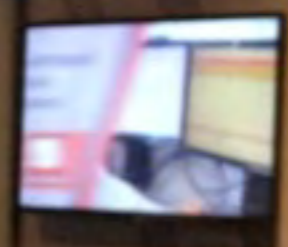
DEBUTWRAPS.COM

Hemmer Displays

BALLARD

2,160,000 pounds of CO2 emissions. SunLine Mor

Renewable Solutions for Energy
HYDROGEN FUELED
SunBus



BALLARD



1985

1990

1995

Operations moved to new
Thousand Palms facility

Dedication of new
Maintenance and
bus wash facilities
SunLine carried more than
one million passengers

Celebration of 10th Anniversary

1995
SunLine celebrated its 10th anniversary on May 1, 1995. The agency has grown from a small bus line to a major transit provider. In 1995, SunLine carried over 1 million passengers and operated over 100 buses daily. The agency has received numerous awards for its service and commitment to the community. SunLine continues to work hard to provide the highest quality of service to its customers.

EXIT

MAX OCCUPANCY 82

RENEWABLE



ENERGY

Renewable energy is a sustainable, clean energy source that can be used to generate electricity, heat, and transportation. It is a key component of a sustainable energy system that can help reduce greenhouse gas emissions and combat climate change.

Renewable energy sources include solar, wind, hydro, geothermal, and biomass. These sources are naturally replenished and do not produce greenhouse gas emissions during their operation. They are also often more resilient to natural disasters and other risks associated with fossil fuel extraction and transportation.

Renewable energy is becoming increasingly cost-competitive with fossil fuels, and its use is growing rapidly. This is due to a combination of factors, including technological advances, government incentives, and a growing awareness of the need to transition to a sustainable energy system.

Investing in renewable energy is not only good for the environment, but it is also good for the economy. It creates jobs, stimulates innovation, and reduces dependence on foreign energy sources. As the world transitions to a sustainable energy system, renewable energy will play a central role in meeting our energy needs and ensuring a bright future for generations to come.

Independence

EL C



1977 1980 1985 1990 1995 2000 2005 2010 2015 2020



MILESTONES

Text describing the milestones of the organization.

