ERIC COREY FREED

Executive Director, Urban Re:Vision
Principal, organic**architect**

nearly 20 years of experience in green building

LEED Accredited Professional, US Green Building Council

Author: "Green Building & Remodeling for Dummies"

Author: "Green$ense: How to Pay For and Profit From 50 Green Home Projects"

Author: "Sustainable School Architecture"

Founding Chair of Architecture, The San Francisco Design Museum

Board of Directors, Architects/ Designers/ Planners for Social Responsibility

Advisory Boards: Green Home Guide, Ecosa Capital, West Coast Green

Co-Founder, ecoTECTURE: The Online Journal of Ecological Design

Columnist: Natural Home Magazine, GreenerBuildings.com, Luxe Magazine

Developer: Sustainable Design Curriculum Academy of Art University
University of California Berkeley

CONNECT:

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CONTACT:
415.474.7777
info@organicarchitect.com

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ERIC COREY FREED

Principal, organic**architect**

Architect

LEED Accredited Professional

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Author

“Green Building & Remodeling for Dummies”

“Sustainable School Architecture”

“Green$ense for your Home”

ERIC COREY FREED

Best Green Architect

San Francisco Magazine 2005

ERIC COREY FREED

Founding Chair of Architecture

The San Francisco Design Museum

ERIC COREY FREED

Professor, Sustainable Design

Academy of Art University
UC Berkeley Extension
University of California Riverside
City University Seattle

ERIC COREY FREED

Columnist

Natural Home KBB
Traditional Home ED&C
Metropolitan Home Luxe

ERIC COREY FREED

Advisory Boards

West Coast Green
Green Home Guide
How You Eco
Green Wizard
Brondell
BottleStone
BlueWorld Equity
New Luna Ventures
ADPSR
Live Glass
Sustainable Life Media
Natural Home Magazine
NanaWall
USGBC-CV

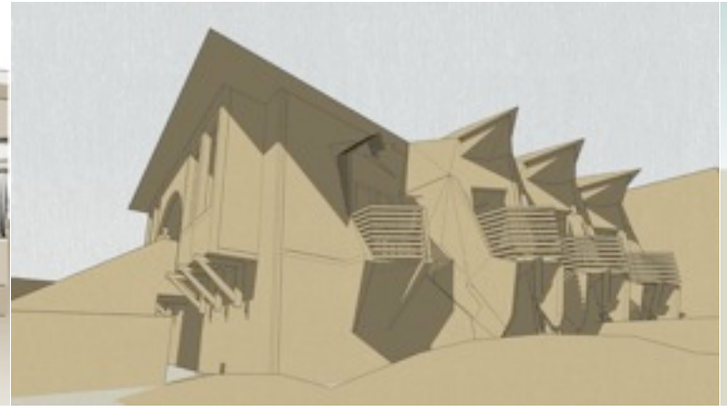
ERIC COREY FREED

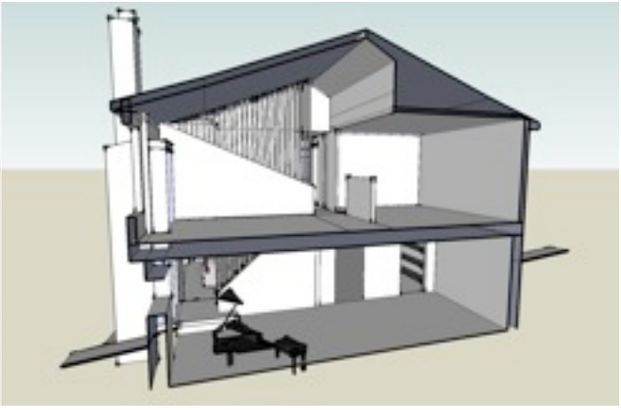
Executive Director

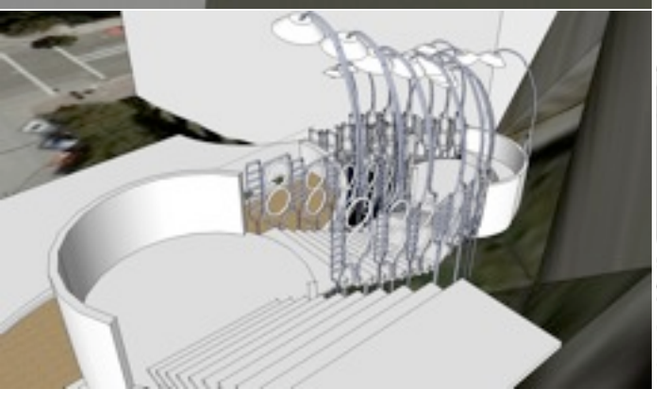
Urban Re:Vision

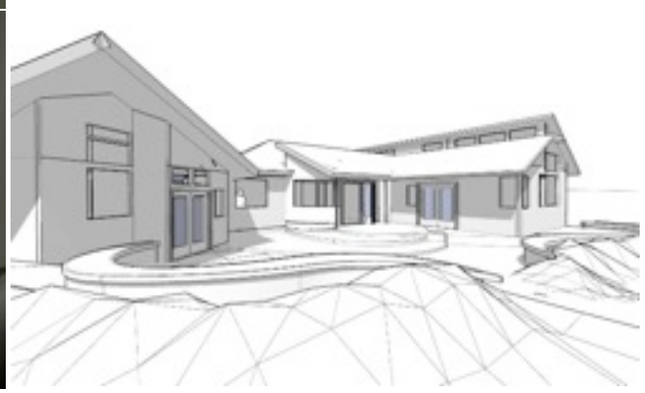
RE:VISION

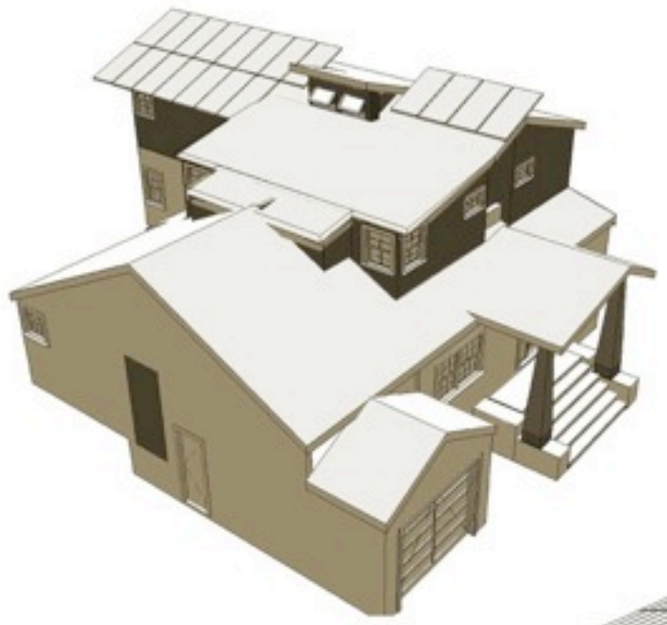
THIS PAST YEAR...

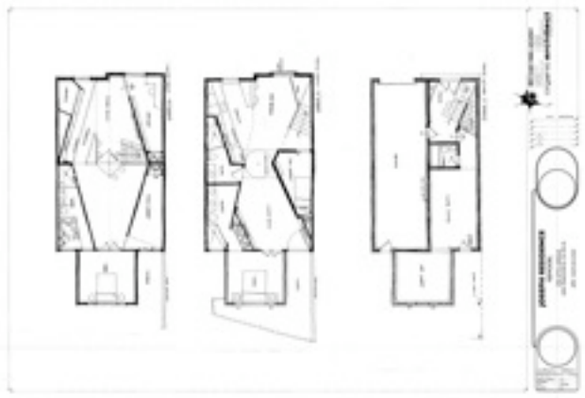


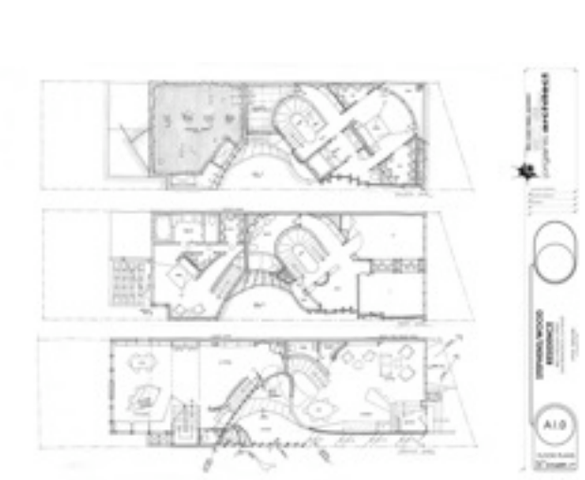


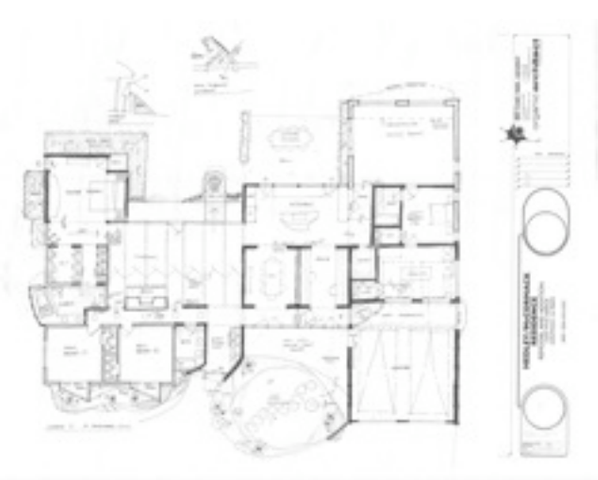












LOWE'S

UNICO™

McKESSON
Empowering Healthcare

WILLIAMS-SONOMA

FULLBLOOM
BAKING CO.

PETCHITECTURE
goes green

MAYACAMAS
·R·A·N·C·H·

LIEBHERR

NanaWall®
The Leader in Opening Glass Walls

arterra

PIXAR
ANIMATION STUDIOS

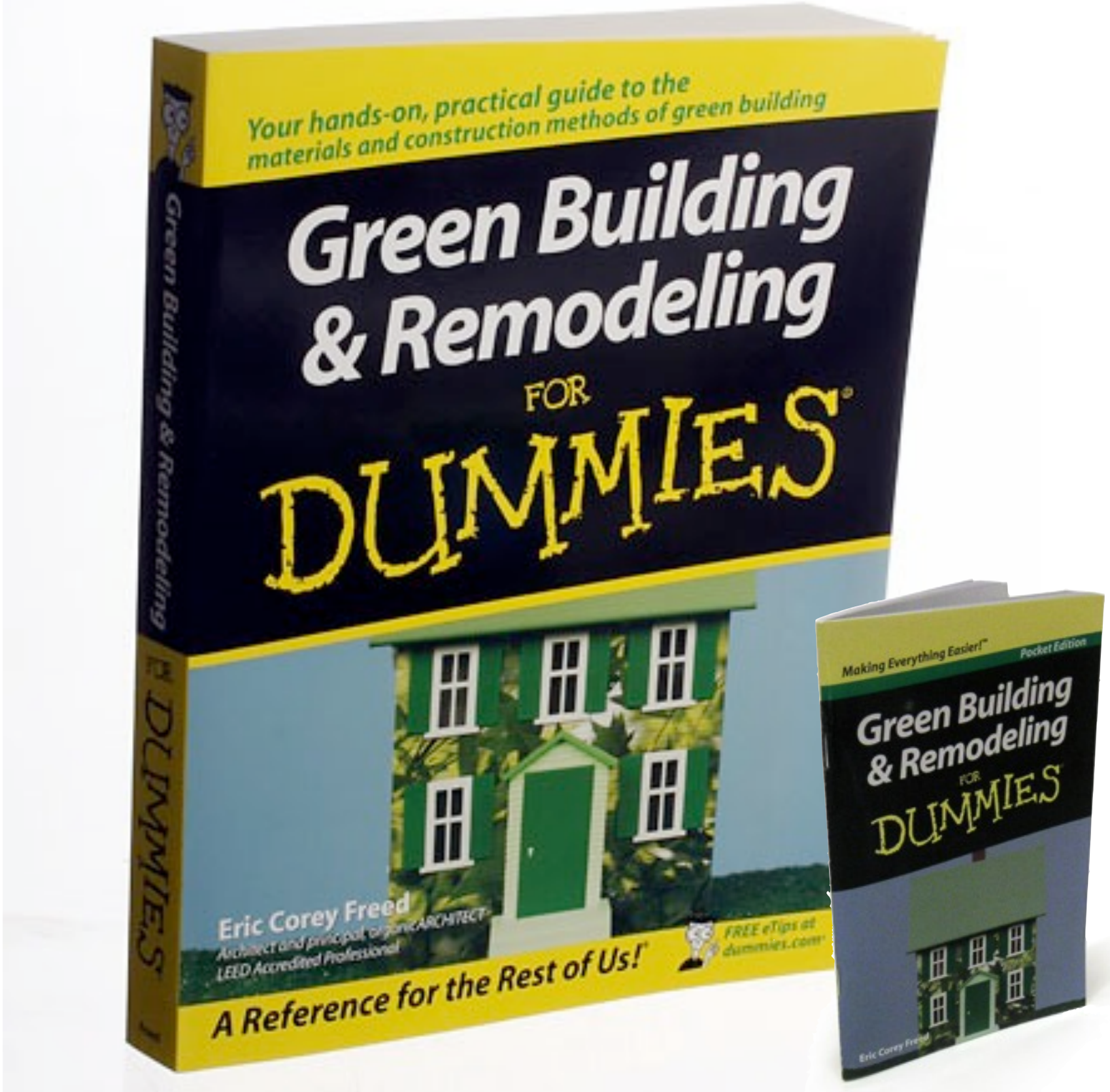
Autodesk

NEW WORLD™
HOME

LOS VALLES

SIMPATICO

LUTRON®


Your hands-on, practical guide to the materials and construction methods of green building
Green Building & Remodeling
FOR
DUMMIES
Eric Corey Freed
Architect and principal of greenARCHITECT
LEED Accredited Professional
A Reference for the Rest of Us!
FREE eTips at dummies.com
Making Everything Easier!™
Pocket Edition
Green Building & Remodeling
FOR
DUMMIES

THE MYTH OF SISYPHUS

A ROADMAP FOR FIXING OUR BUILDINGS

THE MYTH OF SISYPHUS

"does the realization of the **futility of life** require **suicide?**

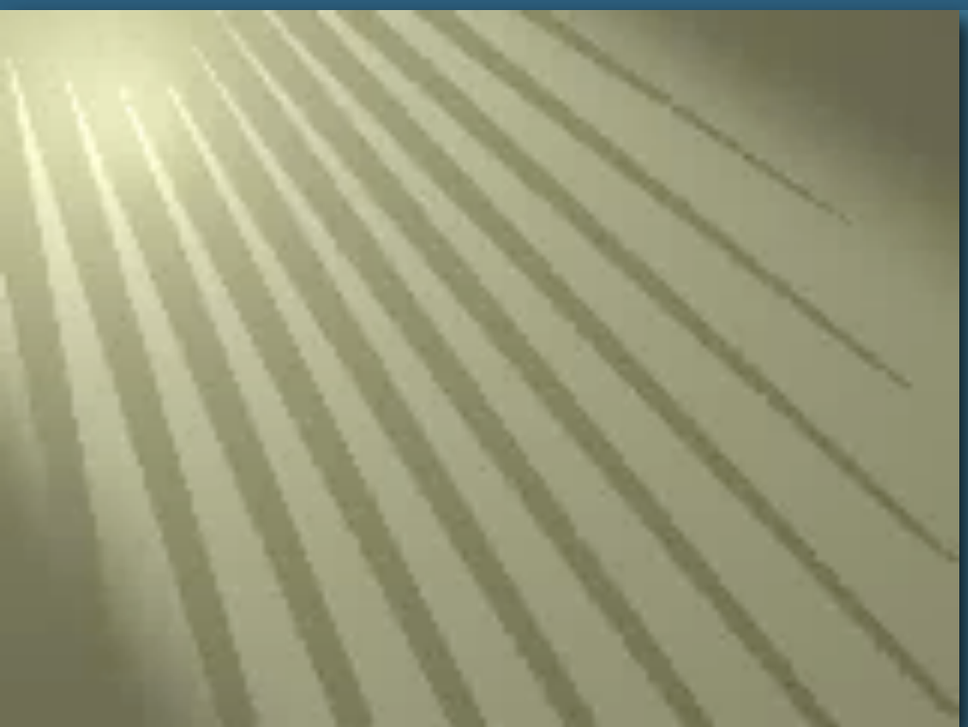
No. It requires **REVOLT.**"

-Albert Camus
The Myth of Sisyphus


TIME TO
REVOLT


HIPPIES
USE
BACKDOOR
NO EXCEPTIONS

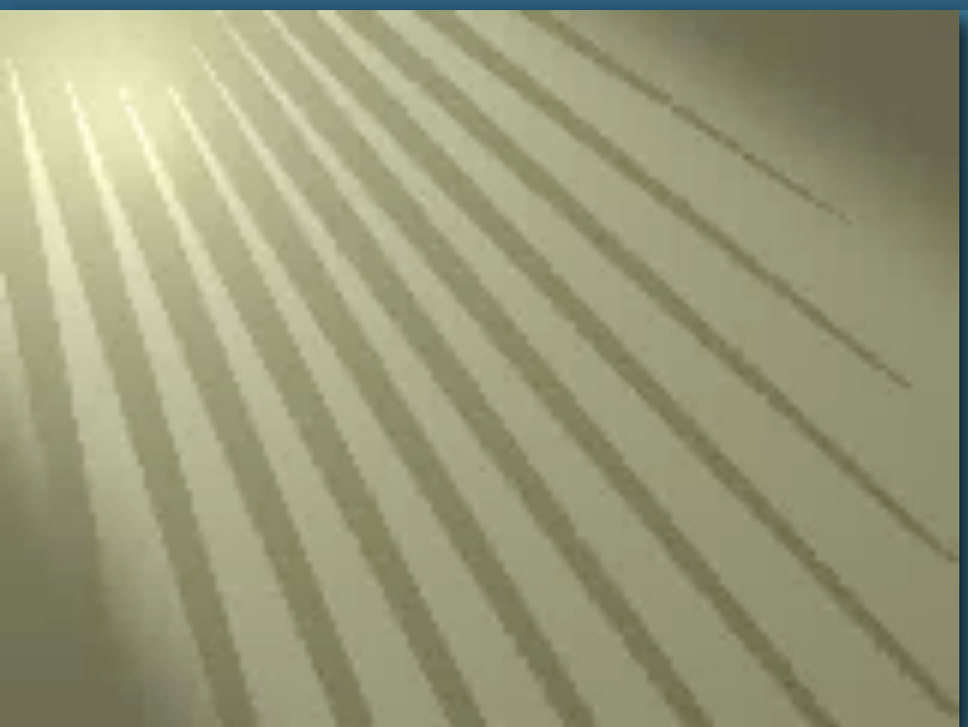
the 5 stages of grief



1

Denial.

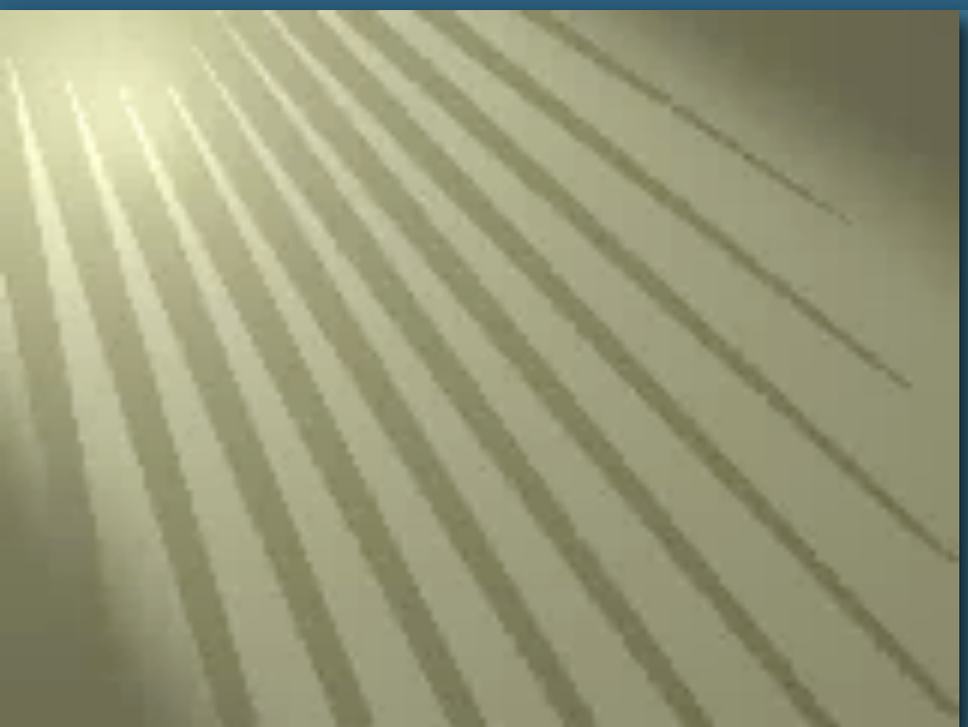
“This can't be happening…”



2

Anger.

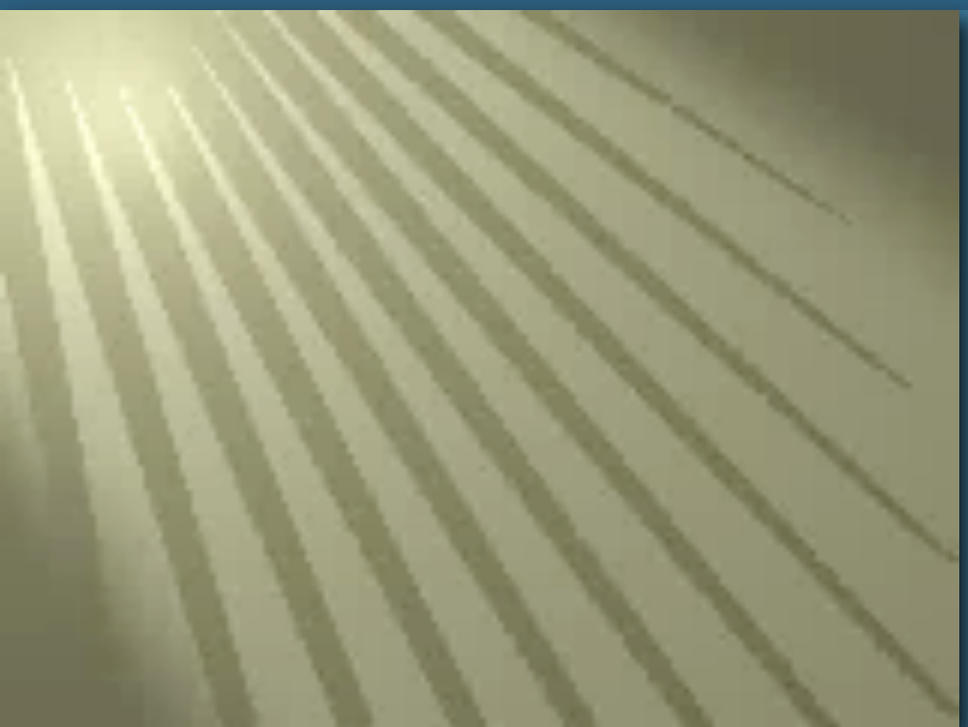
“It’s not fair!”



3

Bargaining.

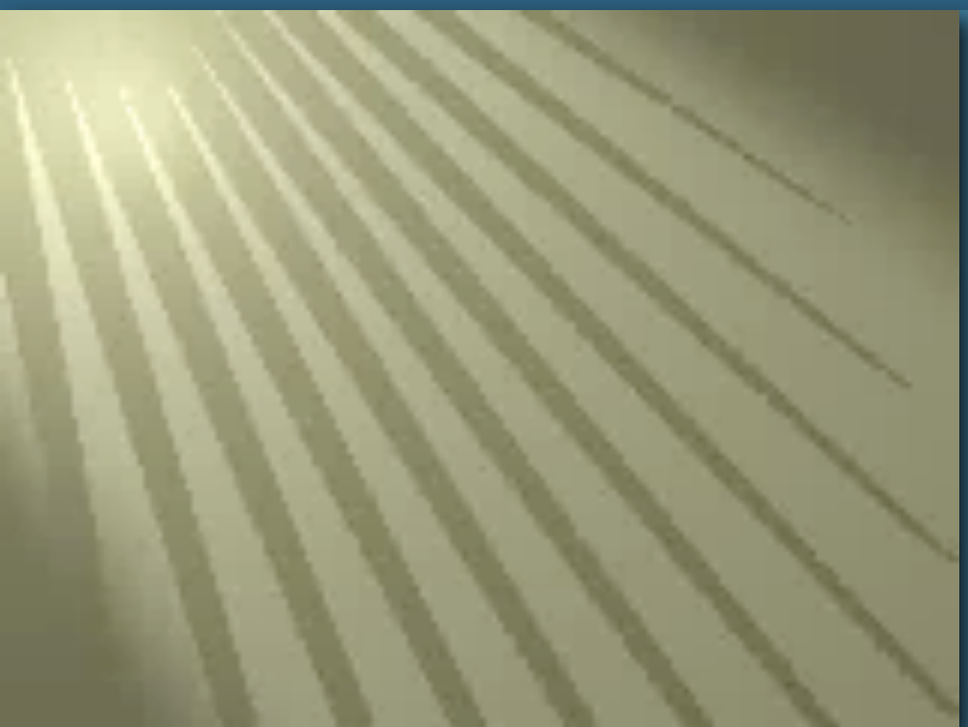
“Can’t this wait a little more?”

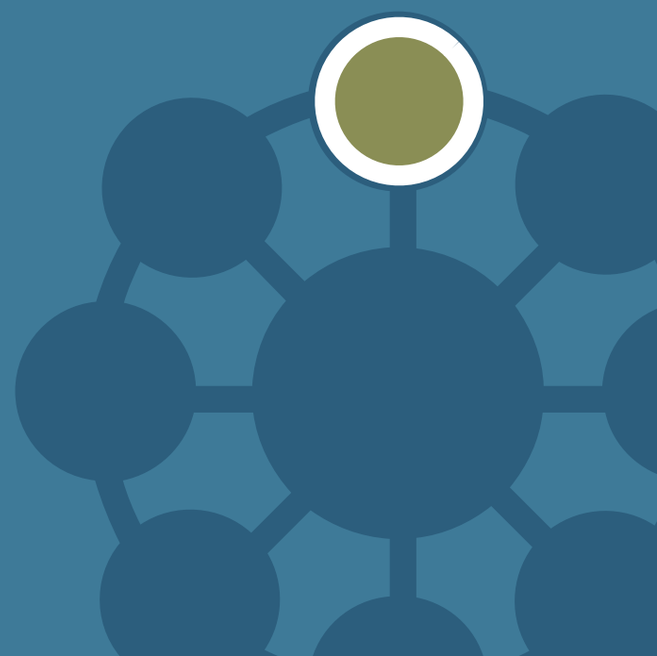


4

Depression.

“What’s the point?!”

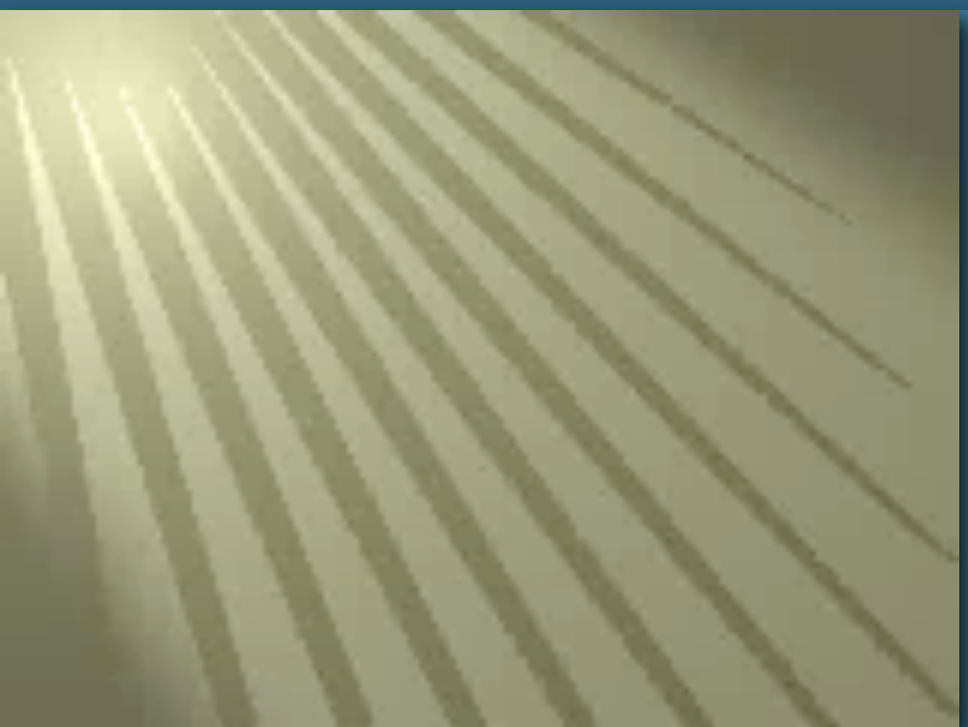




5

Acceptance.

“Everything will be OK!”



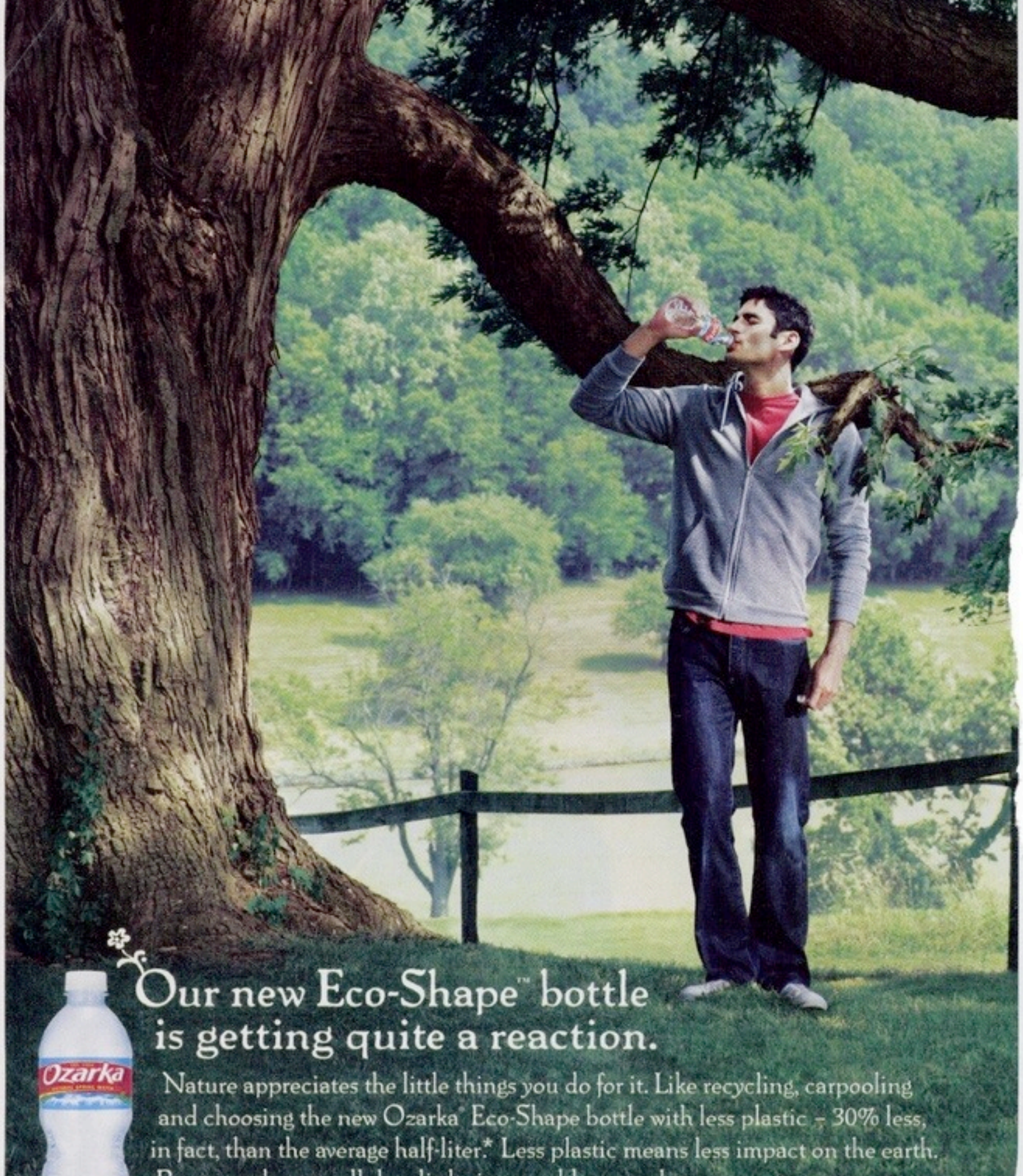
greenwash |ˈgrēnˌwä sh; -ˌwô sh

noun

disinformation disseminated by an organization so as to present an environmentally responsible public image.

"That oil company is, like, totally greenwashing."


Every drop is green.
3600
Every drop is green.
From the island of
FIJI
NATURAL ARTESIAN WATER
FIJI
FIJI



Our new Eco-Shape™ bottle is getting quite a reaction.

Nature appreciates the little things you do for it. Like recycling, carpooling and choosing the new Ozarka® Eco-Shape bottle with less plastic – 30% less, in fact, than the average half-liter.* Less plastic means less impact on the earth. Because when we all do a little, it can add up to a lot.

When we go green, we go all the way.

DON'T THROW ANYTHING AWAY
THERE IS NO AWAY.

IF ONLY WE HAD A MAGIC BIN THAT WE COULD THROW STUFF IN AND MAKE IT DISAPPEAR FOREVER. WHAT WE CAN DO IS FIND CREATIVE WAYS TO RECYCLE. WE USE OUR WASTE CO_2 TO GROW FLOWERS. AND OUR WASTE SULPHUR TO MAKE SUPER-STRONG CONCRETE.

REAL ENERGY SOLUTIONS FOR THE REAL WORLD. WWW.SHELL.COM/REALENERGY


Eco-
Dismol
100% ORGANIC
UPSET TUMMY RELIEVER
USGBC Approved
Soothing
Relief for
5 Symptoms
• Greenwashing
• Bad Karma
• Bad Vibes
• Tofu Attacks
• Negativity
U.S. GREEN BUILDING COUNCIL
USGBC
8 FL OZ (236 mL)

“Sustainable School Architecture”

MARCH 2010

with Lisa Gelfand
Wiley & Sons

TIME TO DO SOMETHING

“SENTIMENT without action is the ruin of the SOUL...”

-Edward Abbey

4

217753 FC

UNITED STATES OF AMERICA
OFFICE OF PRICE ADMINISTRATION

OFFICE OF PRICE ADMINISTRATION
OPA

WAR RATION BOOK FOUR

Issued to Rhoda Sachs
(Print first, middle, and last names)

Complete address 4943 Ormes St Penna.
Rhoda

READ BEFORE SIGNING

In accepting this book, I recognize that it remains the property of the United States Government. I will use it only in the manner and for the purposes authorized by the Office of Price Administration.

(Signature)

Void if Altered

It is a criminal offense to violate rationing regulations.

OPA Form R-145

16—35570-1

RATIONING SAFEGUARDS YOUR SHARE

U.S. PRESIDENT. EMERGENCY MGT. OFF.

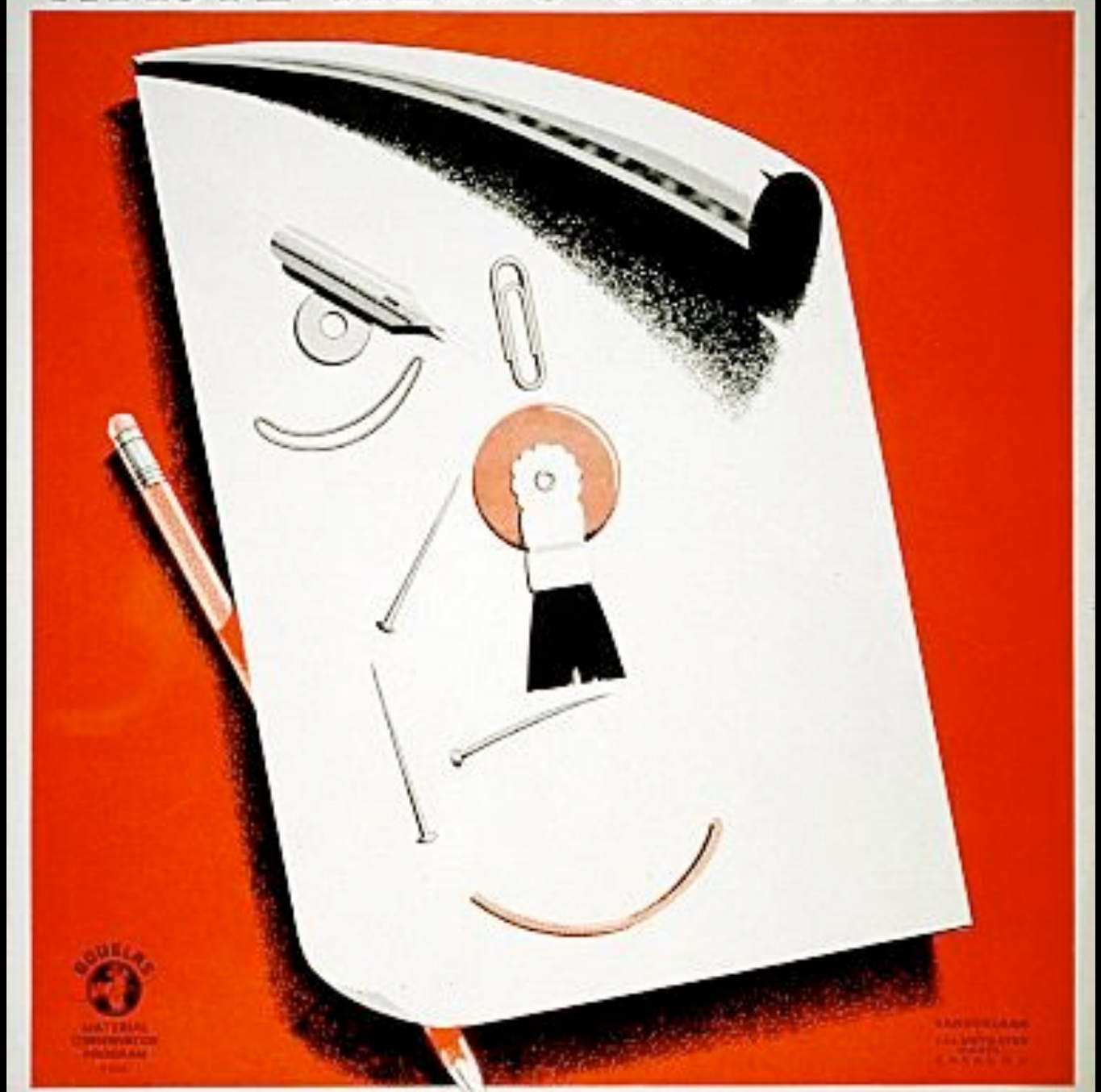
Office of Price Administration

We Can Do It!

POST FEB. 15 TO FEB. 28

WAR PRODUCTION CO-ORDINATING COMMITTEE

WASTE HELPS THE ENEMY



CONSERVE MATERIAL

A MESSAGE TO OUR TENANTS FROM THE GOVERNMENT

Help stop fuel waste

1. Use less hot water.
2. Turn off radiators to prevent over-heating.
3. Don't demand heat 24 hours a day.
4. Keep windows closed as much as possible.
5. Don't leave lights burning.

SAVING FUEL SAVES TRANSPORTATION FOR AMERICA'S WAR EFFORT

THE OFFICE OF WAR INFORMATION, WASHINGTON, D. C.
Poster No. 12

Do with less– so they'll have enough!

RATIONING GIVES YOU YOUR FAIR SHARE

KEEP SCRAPPING

America needs more

RUBBER
★ METALS
RAGS
PAPER
BURLAP

★ Separate the different metals

Get in the SCRAP

America's war industries need

METALS
PAPER
OLD RAGS
RUBBER

Get it back in war production

WANTED
For VICTORY

Waste Paper
Old Rags
Scrap Metals
Old Rubber

GET IN THE SCRAP

SELL TO A COLLECTOR OR GIVE TO A CHARITY

A Gas Mask requires
1.11 pounds of rubber

A Life Raft requires
17 to 100 pounds of rubber

A Scout Car requires
306 pounds of rubber

A Heavy Bomber requires
1,825 pounds of rubber

America needs your
SCRAP RUBBER

WAR PRODUCTION BOARD
Bureau of Industrial Conservation

ALL FUEL IS SCARCE

PLAN FOR WINTER NOW!

THE SOLID FUELS ADMINISTRATION FOR WAR URGES:

1 **WINTERIZE YOUR HOME!** Insulate walls and ceilings. Install storm doors, sash, weather strips

2 **CHECK YOUR HEATING PLANT!** Clean and repair equipment. Install fuel saving devices

3 **ORDER FUEL AT ONCE!** Take your dealer's advice on amount and kind of fuel. Be ready to accept delivery

Fuel Fights!

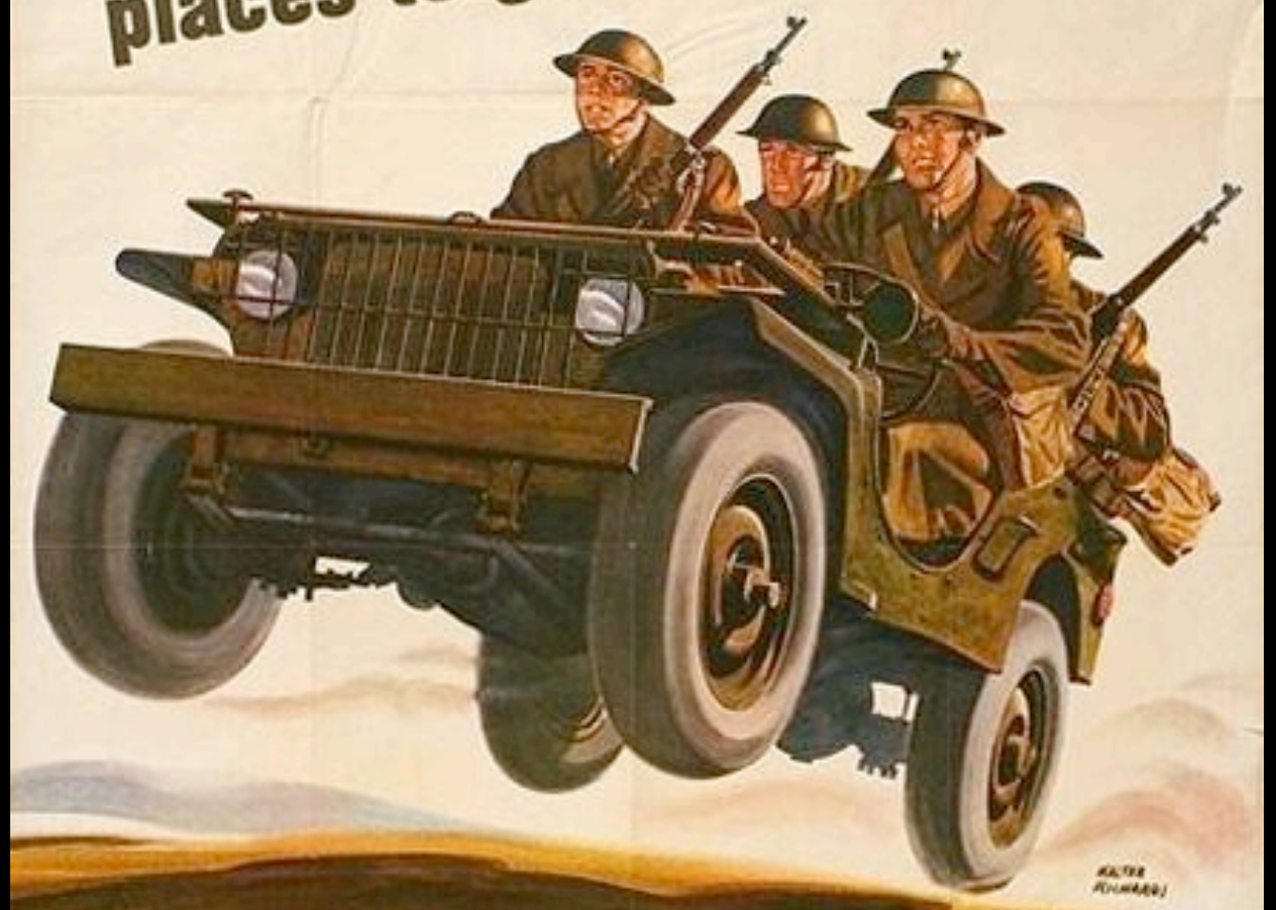
SAVE YOUR SHARE

1. **Keep temperature at 65° F. during day - lower at night.**
2. **Don't heat unused rooms.**
3. **Keep windows closed.**
4. **Draw window shades at night.**
5. **Shut off heat when weather permits.**
6. **Keep heating plant in top condition.**
7. **Use less hot water.**

Saving fuel also saves manpower, material, equipment

CONSERVE COAL, OIL, GAS... FOR WAR

They've got more important places to go than you!...



Save Rubber

CHECK YOUR TIRES NOW

Division of Information
Office of Defense Transportation

sugar is scarce

make it stretch


SCRAP

THE NEW SCHOOL

66

LEED Certified
Hippies Welcome.

55,394,000

students

SOURCE: Capital E


1 in
5
people

student growth

60,443,000

by 2017

schools spend

$35,000,000,000

in annual tax dollars

number of schools

125,766

K-12

Schools typically designed just to meet codes

Studies show many schools are unhealthy

poor indoor air quality

15,000 schools

8,000,000 children

SOURCE: US General Accounting Office

national dropout rates

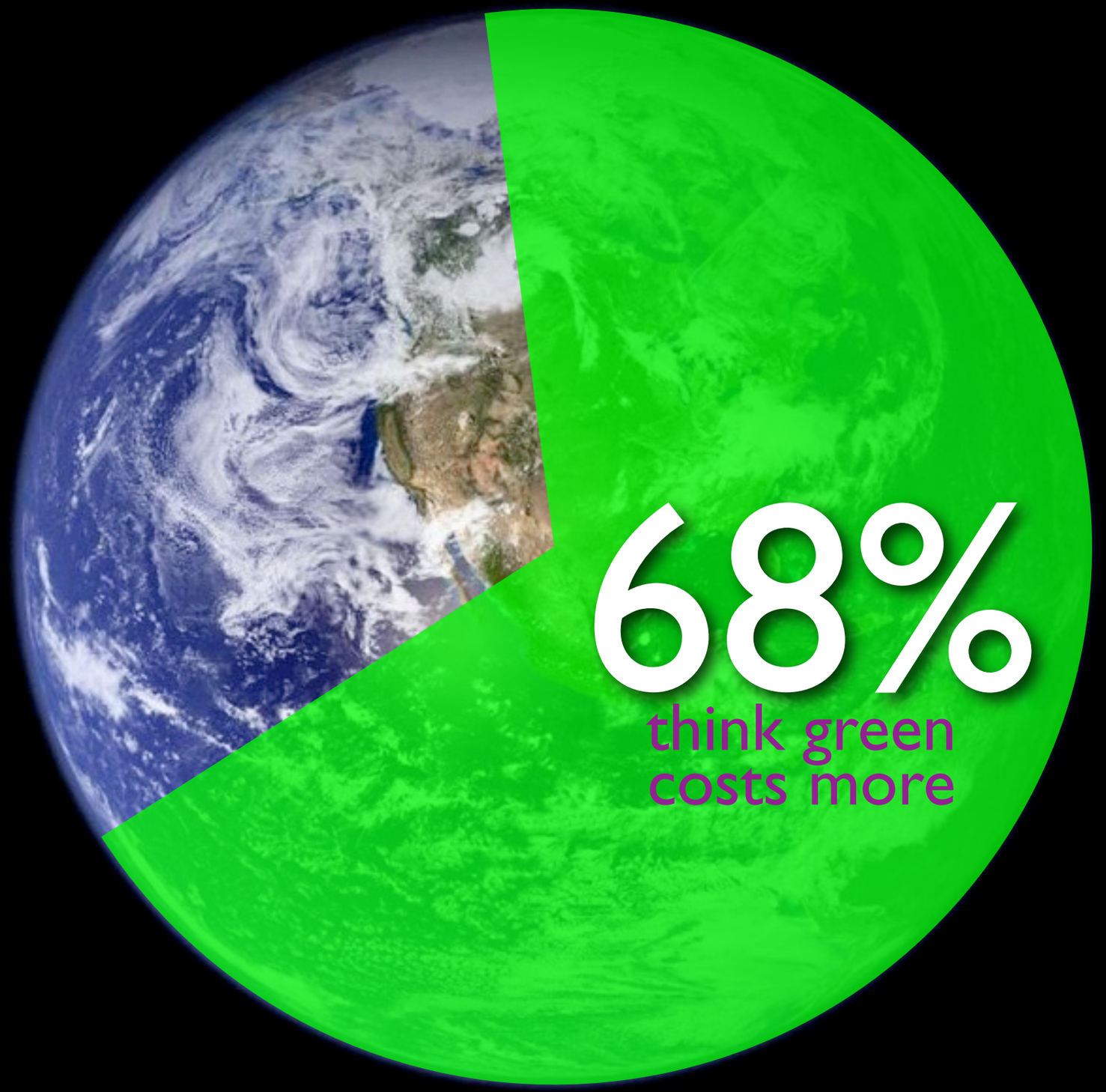
8.7%

2007


50 largest cities
50%
graduate


in Detroit
50%
illiteracy rate
marchandmeffre.com


need for
green
schools



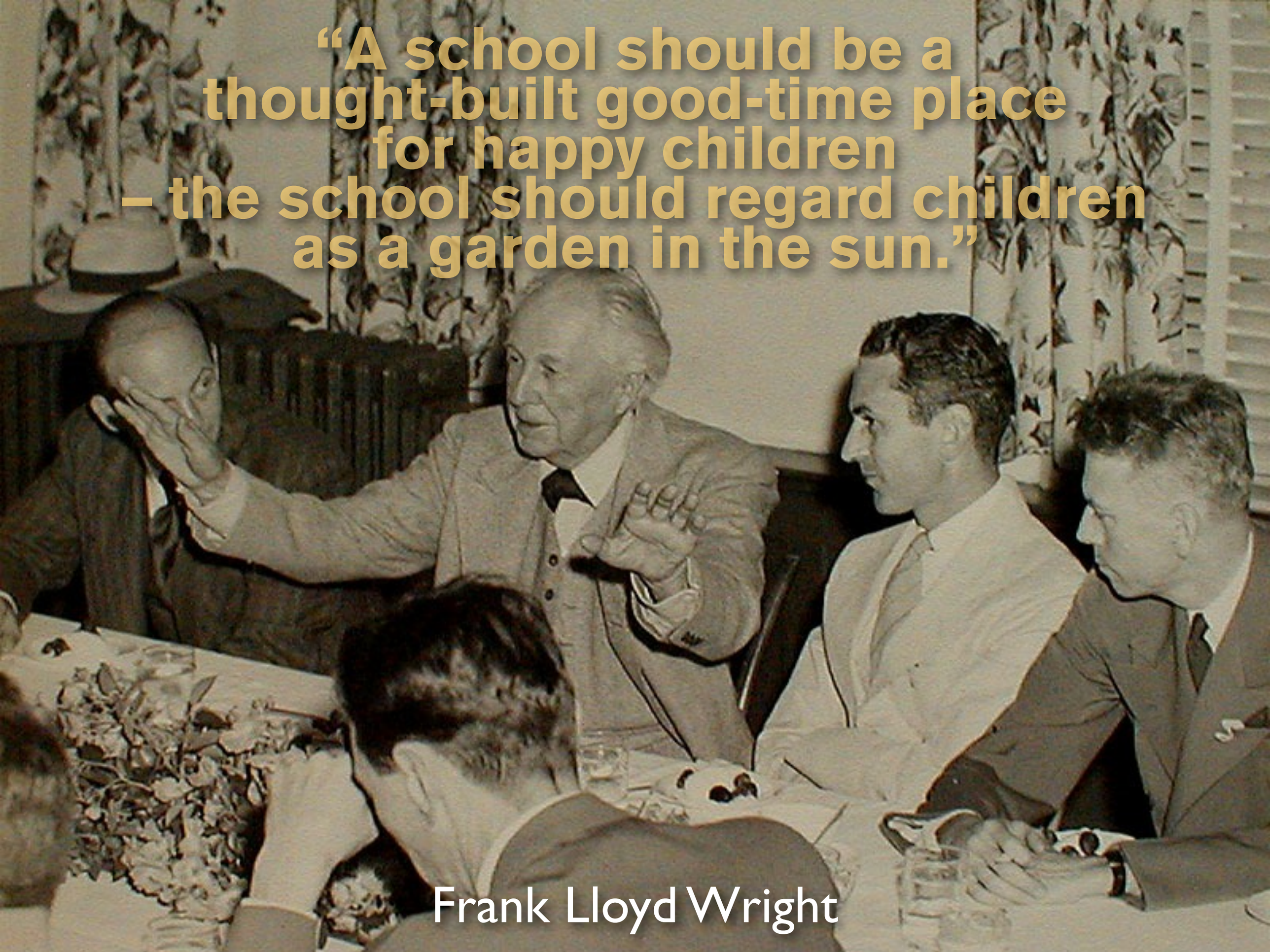
perception of the green schools

among executives

SOURCE: Capital E

Benefits of Green Schools

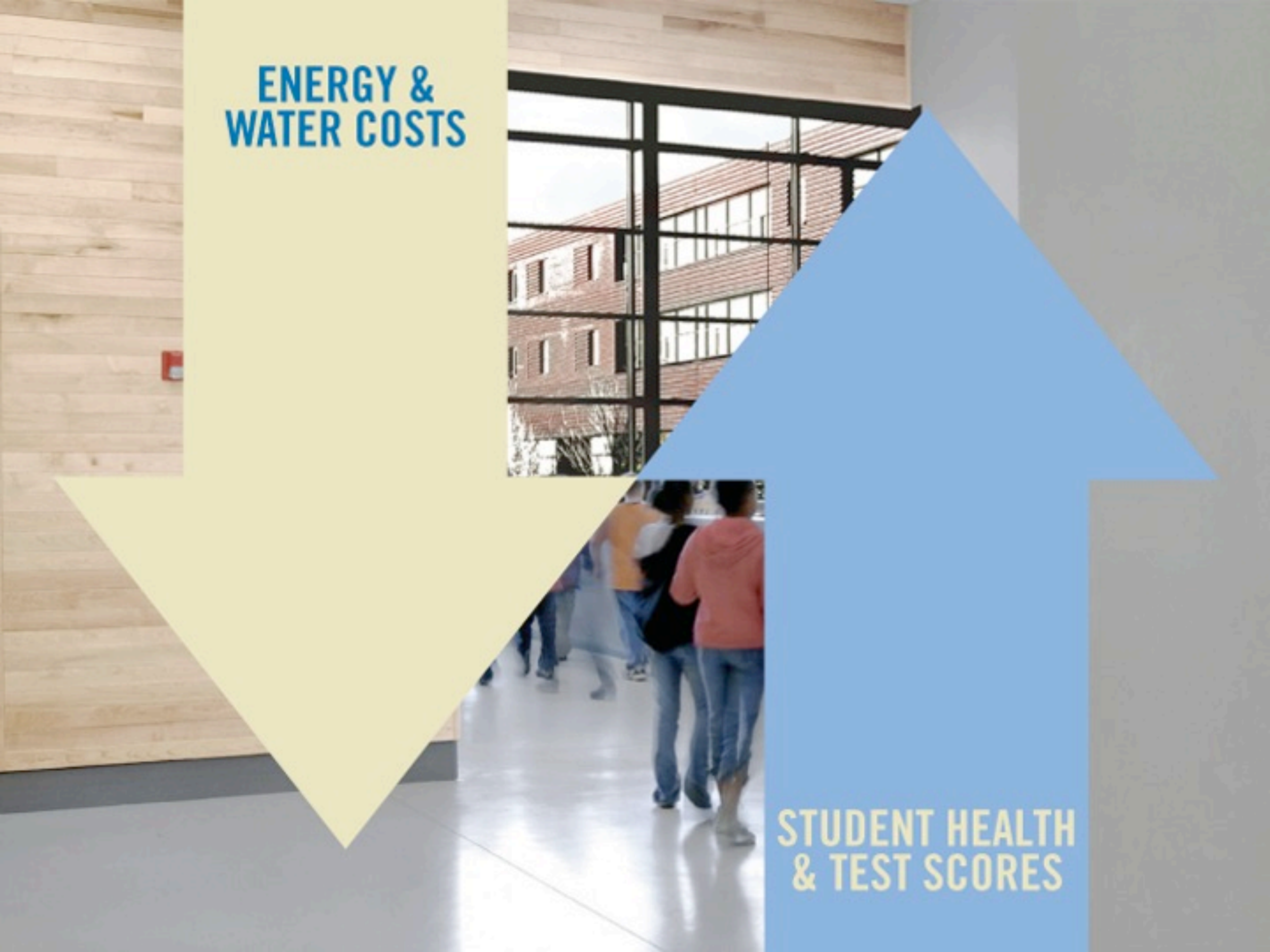
3% Increased Learning, Productivity & Performance
1.4% Increased Future Earnings of Students
25% Reduced Asthma
15% Reduced Colds and Flu
3% Reduced Teacher Turnover



“A school should be a
thought-built good-time place
for happy children
– the school should regard children
as a garden in the sun.”

Frank Lloyd Wright

ENERGY & WATER COSTS



STUDENT HEALTH & TEST SCORES

Green Schools are Springing Up Everywhere

LEED Certified: 208

Registered: 1,611

Photo by James Steinkamp

As of September 2009

$ savings

71

$ increase

4

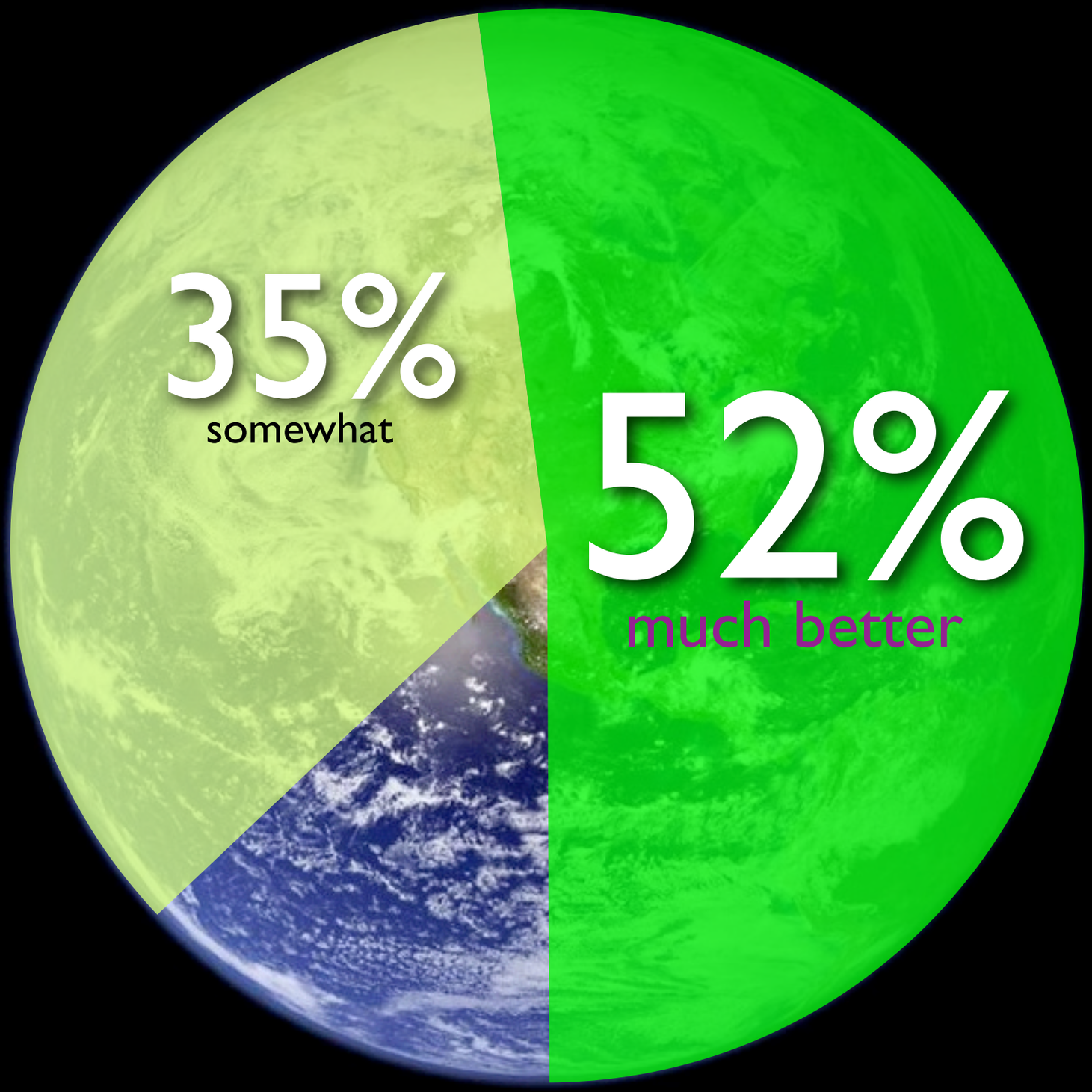
per square foot

SOURCE: Capital E; US Green Building Council

payback

20 times over cost of greening

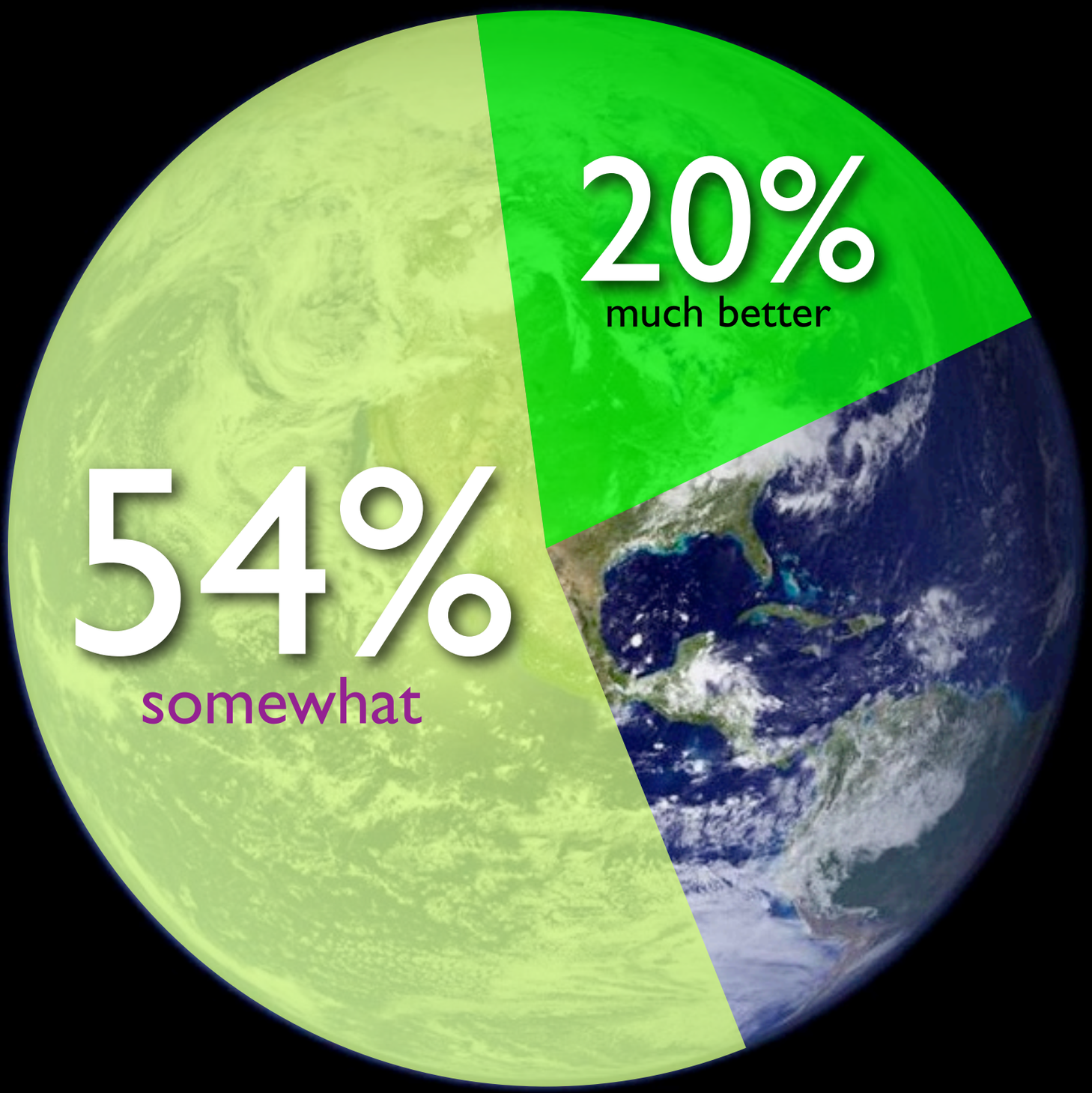

SOLON
SCHOOL
EST. 1898
up-front cost of green
1.65%



perception of community image

green school benefits

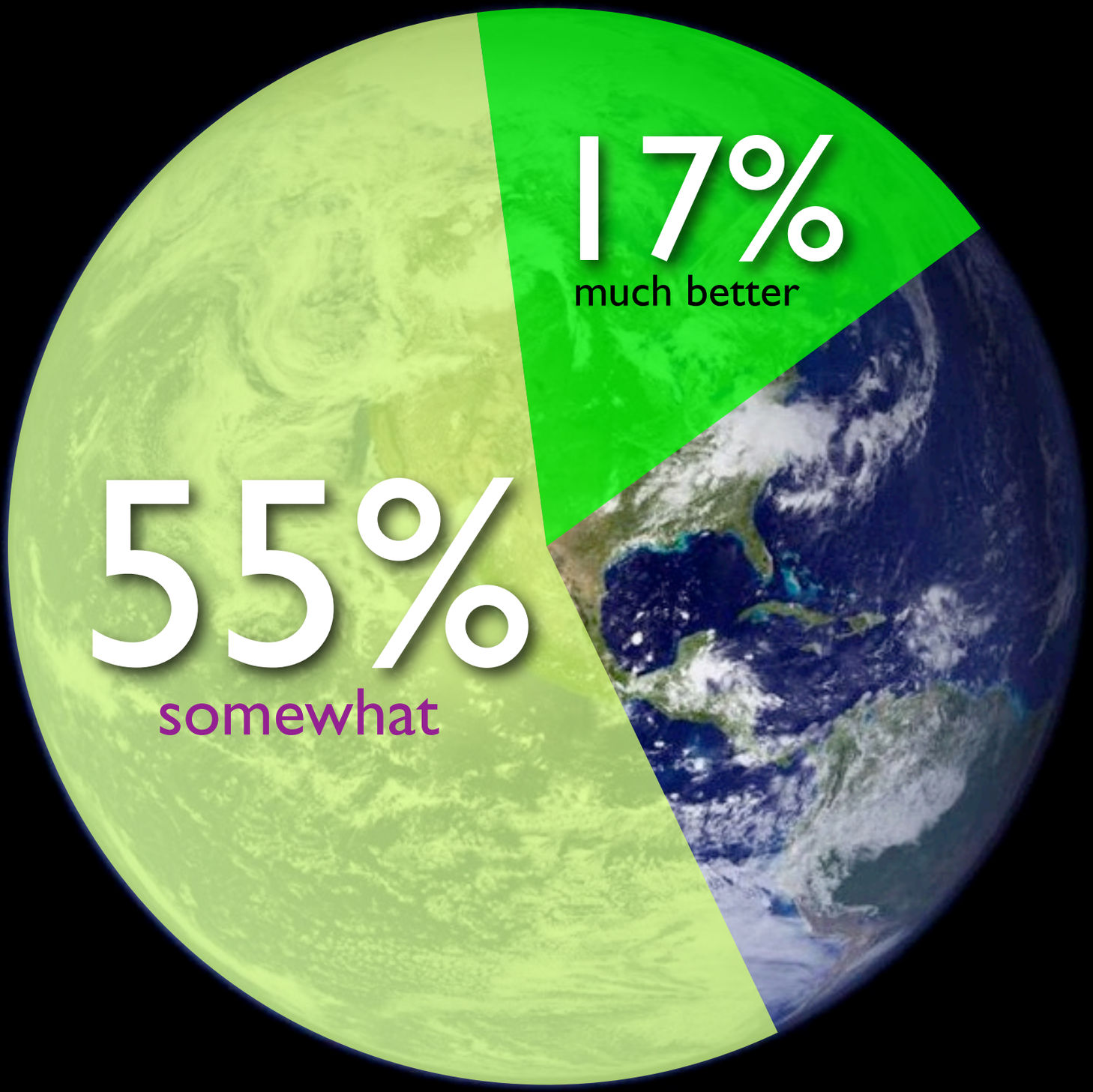
SOURCE: Turner Construction Company, 2005 Survey of Green Schools



ability to retain/attract teachers

green school benefits

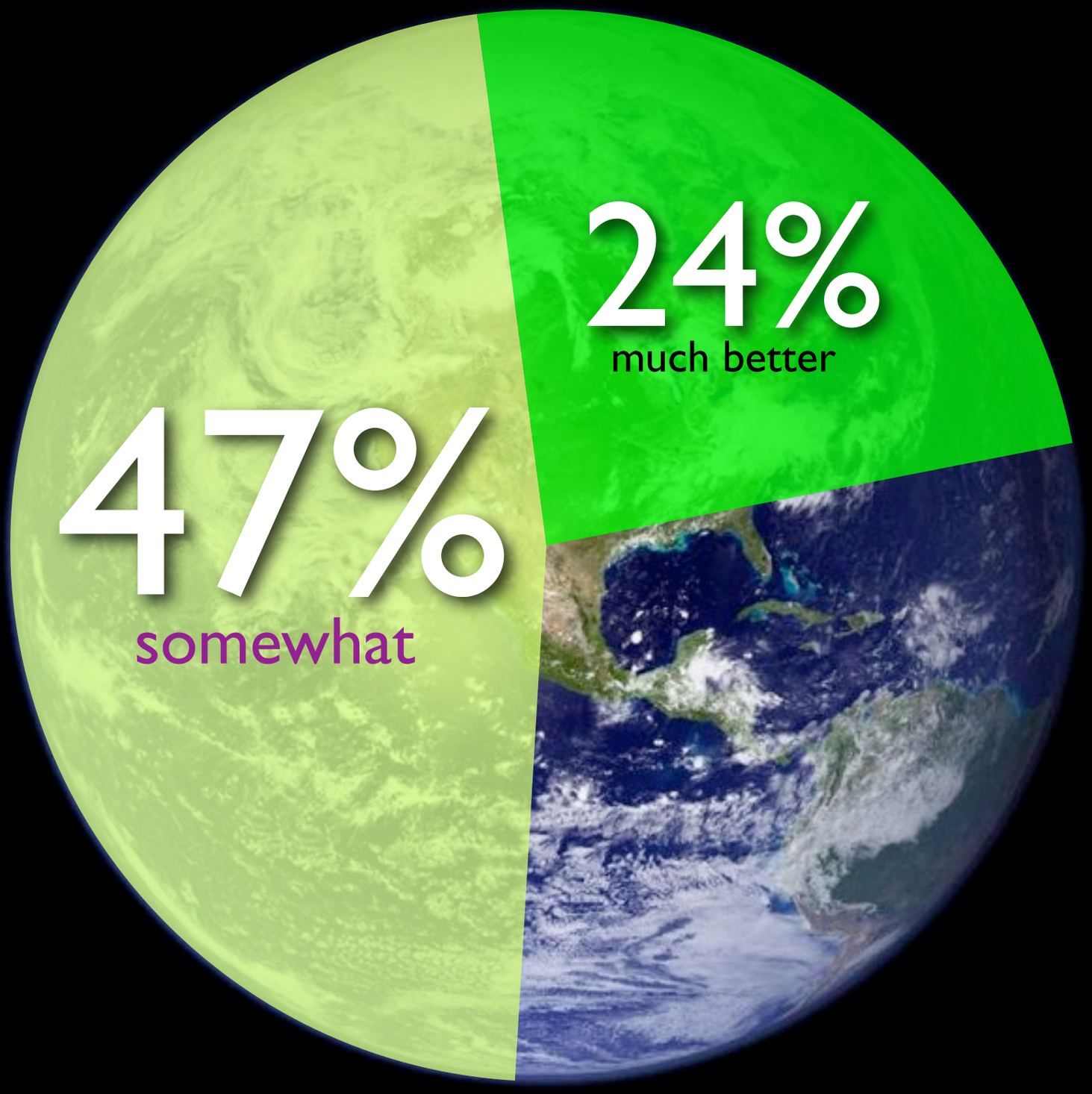
SOURCE: Turner Construction Company, 2005 Survey of Green Schools



reduced student absenteeism

green school benefits

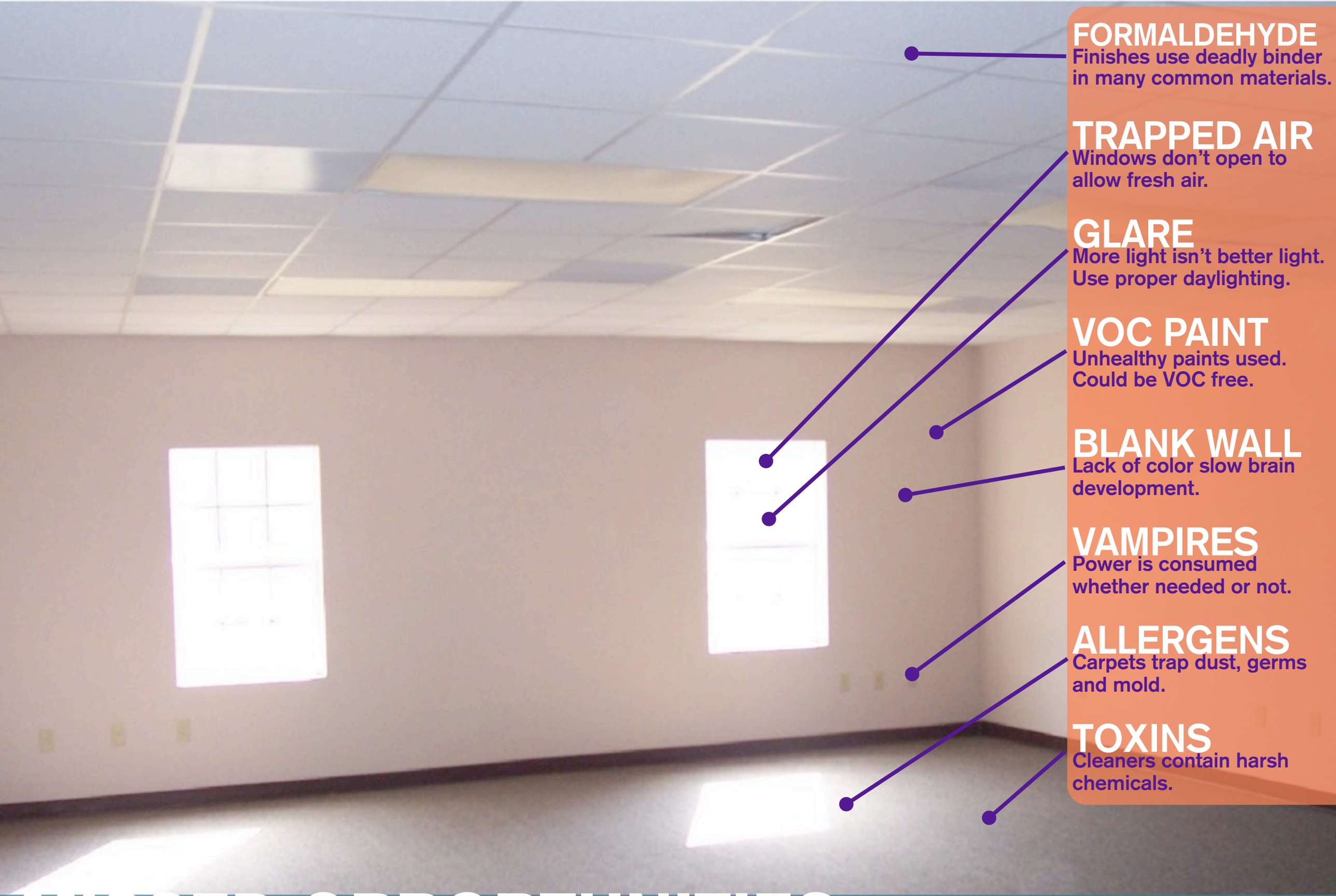
SOURCE: Turner Construction Company, 2005 Survey of Green Schools



student performance

green school benefits

SOURCE: Turner Construction Company, 2005 Survey of Green Schools



FORMALDEHYDE
Finishes use deadly binder in many common materials.

TRAPPED AIR
Windows don't open to allow fresh air.

GLARE
More light isn't better light. Use proper daylighting.

VOC PAINT
Unhealthy paints used. Could be VOC free.

BLANK WALL
Lack of color slow brain development.

VAMPIRES
Power is consumed whether needed or not.

ALLERGENS
Carpets trap dust, germs and mold.

TOXINS
Cleaners contain harsh chemicals.

MISSED OPPORTUNITIES

LEARNING BENEFITS OF GREEN SCHOOLS

=

+3%
INCREASE IN PRODUCTIVITY, LEARNING, & PERFORMANCE

AND

-3%
DECREASE IN TEACHER TURNOVER

DIRECT SAVINGS FOR AN AVERAGE GREEN SCHOOL

$47,880

Annual Direct Energy Savings Per School

$95,760

Annual Total Direct Savings Per School

annual green building savings

2 teachers

5,000 textbooks

200 computers

MAINTENANCE | HEALTH | WATER | ENERGY | LIGHT | EDUCATION

MAINTENANCE

schools spend more on

trash disposal

than

new textbooks

MAINTENANCE

is the primary decision

DESIGN

a 40 year building.

PREVAILING WAGE

determines the walls.

A.D.
1920

CORNER
STONE

EXPLAINING SUSTAINABILITY:

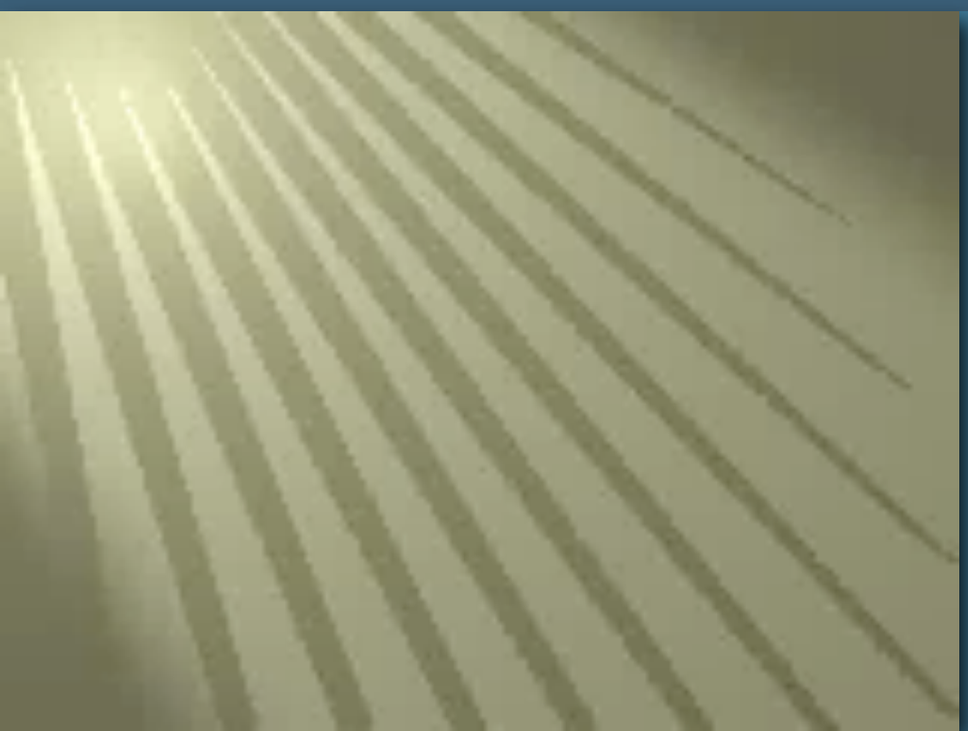
every
MATERIAL & PRODUCT
has a
LIFECYCLE
and some parts of that are...

EMBODIED ENERGY:

All of the energy:
DIRECT & INDIRECT
used to
extract, manufacture, transport
and install
a material or product.

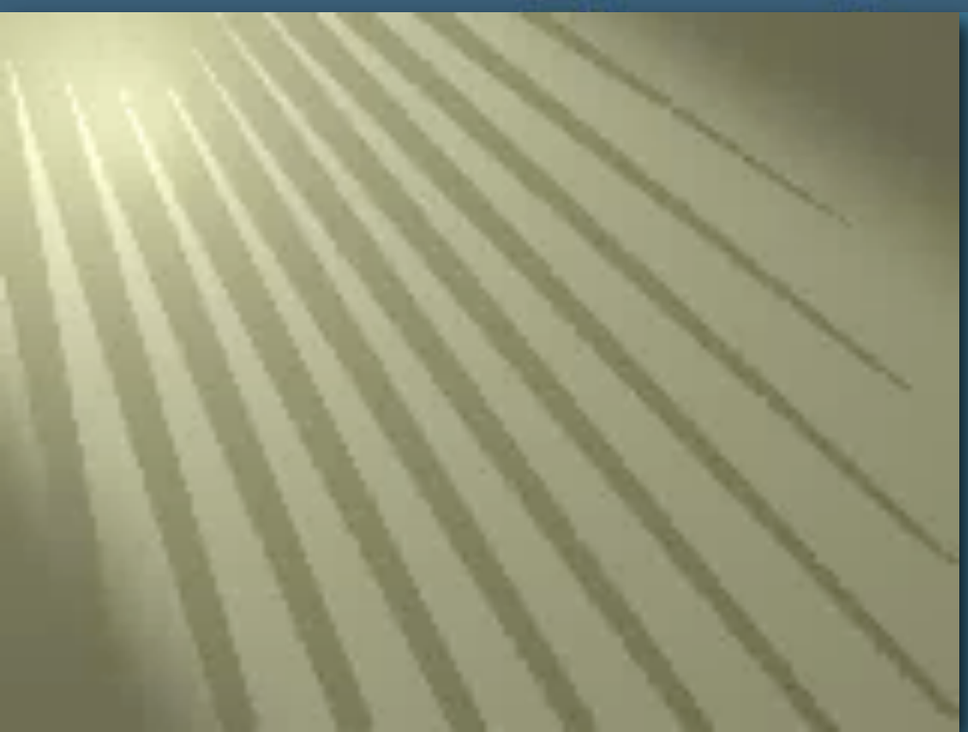
BY PRODUCTS:

The resultant materials, both GOOD & BAD caused from the extraction, manufacture, transport and installation a material or product.



WASTE:

A man-made
LABEL
used to describe
potentially valuable resources
we have yet to find a use for.



there's
no such thing as
WASTE

LIFECYCLE:

a look at the entire life of a

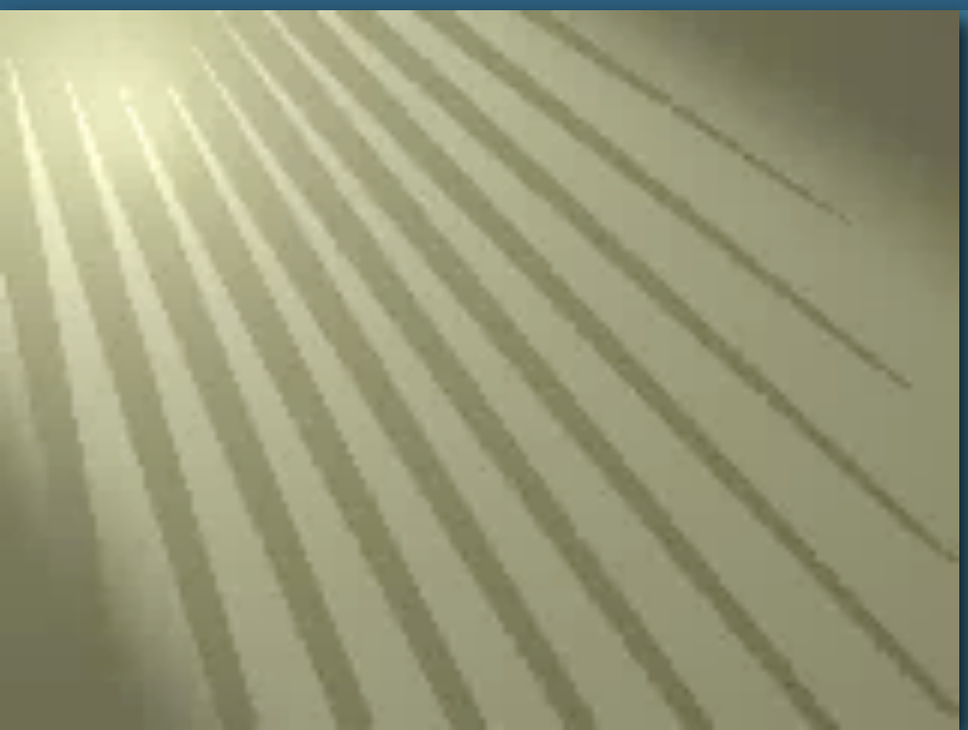
MATERIAL or PRODUCT

from

extraction, manufacture, transport & installation

through

USE



and including

disposal

RAW MATERIAL

SUPPLY CHAIN PROCESS

MFR'G

DELIVERY RECV'G

INSTALL--ATION

MAINTENANCE CYCLE

REPAIR CYCLE

USE

DISPOSAL
PRODUCT LIFESPAN

RE-USE?
RECYCLE

DISASSEMBLY
BREAKDOWN

BIODEGRADABLE?

THE LIFECYCLE OF ANY PRODUCT

HOW DO WE EMBRACE SUSTAINABILITY WITH DESIRE?

AT EACH STAGE of the LIFECYCLE:

ENERGY
is provided

ENERGY
is lost

AT EACH STAGE...

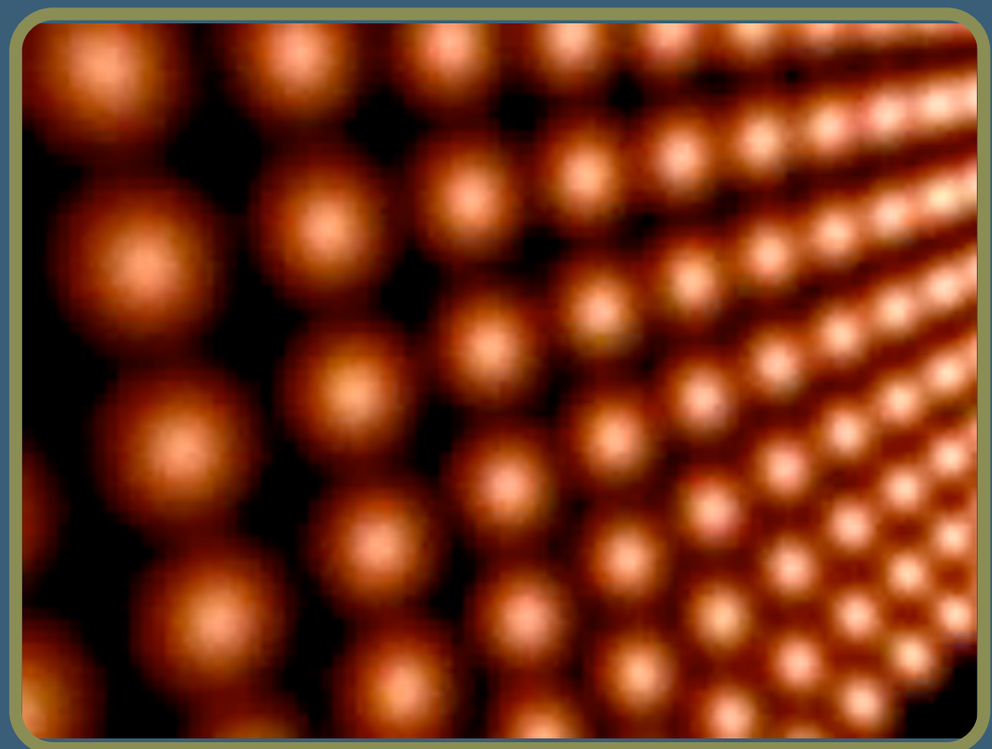
OPPORTUNITIES

AT EACH STAGE of the LIFECYCLE:

BYPRODUCTS
are given off

BYPRODUCTS
are lost

(Some call this WASTE)



AT EACH STAGE...

OPPORTUNITIES

Most designers only concern themselves with **USE**

AT EACH STAGE...

OPPORTUNITIES

ADDING SUSTAINABILITY TO YOUR DESIGNS

RAW MATERIAL

SUPPLY CHAIN PROCESS

MFR'G

DELIVERY RECV'G

INSTALL--ATION

MAINTENANCE CYCLE

REPAIR CYCLE

USE

DISPOSAL
PRODUCT LIFESPAN

RE-USE?
RECYCLE

DISASSEMBLY
BREAKDOWN

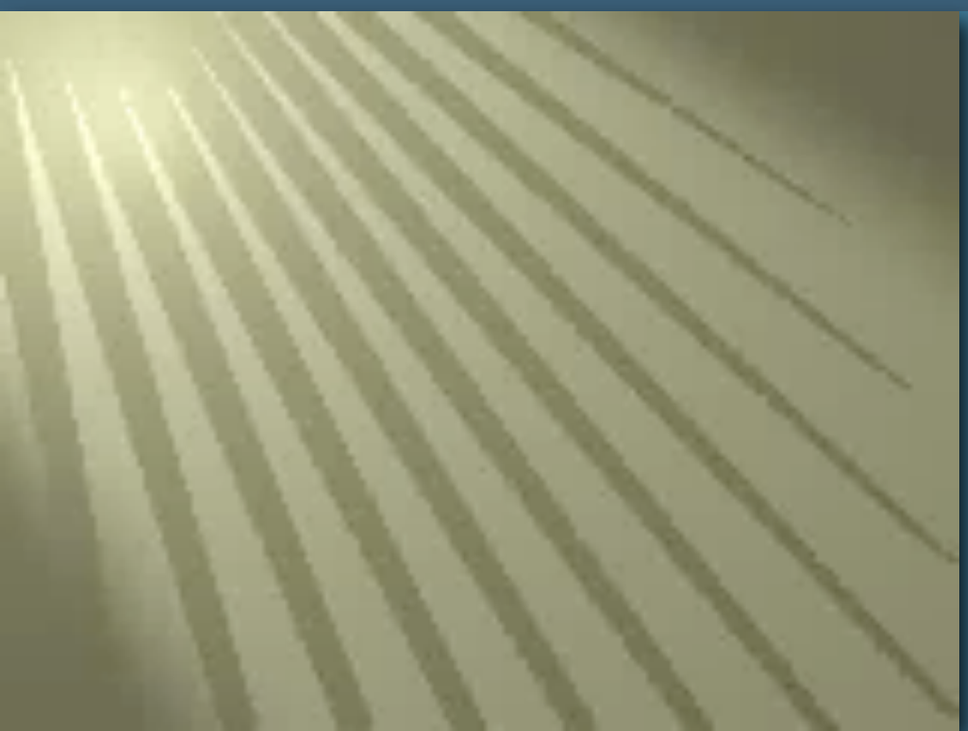
BIODEGRADABLE?

THE LIFECYCLE OF ANY PRODUCT

HOW DO WE EMBRACE SUSTAINABILITY WITH DESIRE?

AT EACH STAGE of the LIFECYCLE:

ASK
how can we use this to
INSPIRE OUR DESIGN
and
PROTECT OUR RESOURCES



and
save our clients
MONEY?

ADDING SUSTAINABILITY TO YOUR DESIGNS

RAW MATERIAL

SUPPLY CHAIN PROCESS

MFR'G

DELIVERY RECV'G

INSTALL--ATION

MAINTENANCE CYCLE

REPAIR CYCLE

USE

DISPOSAL
PRODUCT LIFESPAN

RE-USE?
RECYCLE

DISASSEMBLY
BREAKDOWN

BIODEGRADABLE?

THE LIFECYCLE OF ANY PRODUCT

HOW DO WE EMBRACE SUSTAINABILITY WITH DESIRE?

WOOD

PRODUCTION

A. Where did they come from?

B. What are the by-products of their manufacture?

C. How are they delivered or installed?

USE

D. How are they maintained?

E. How healthy are the materials?

RETURN

F. How are they re-used when we are done with them?

BAMBOO

PRODUCTION

A. Where did they come from?

B. What are the by-products of their manufacture?

C. How are they delivered or installed?

USE

D. How are they maintained?

E. How healthy are the materials?

RETURN

F. How are they re-used when we are done with them?

CONCRETE

PRODUCTION

A. Where did they come from?

B. What are the by-products of their manufacture?

C. How are they delivered or installed?

USE

D. How are they maintained?

E. How healthy are the materials?

RETURN

F. How are they re-used when we are done with them?

GLASS

PRODUCTION

A. Where did they come from?

B. What are the by-products of their manufacture?

C. How are they delivered or installed?

USE

D. How are they maintained?

E. How healthy are the materials?

RETURN

F. How are they re-used when we are done with them?

TRADITIONAL MATERIALS

VINYL

PRODUCTION

A. Where did they come from?

B. What are the by-products of their manufacture?

C. How are they delivered or installed?

USE

D. How are they maintained?

E. How healthy are the materials?

RETURN

F. How are they re-used when we are done with them?

NOT BLACK AND WHITE:

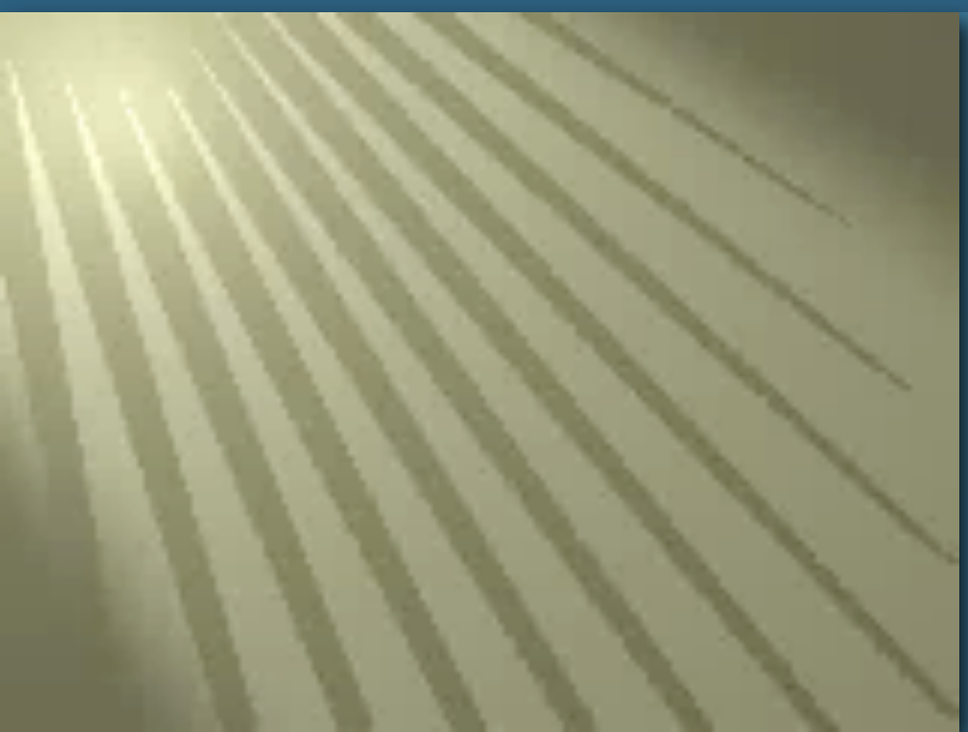
biodegradable vs. low energy
local vs. certified
recycled vs. recyclable
old appliances vs. new efficient
energy efficient vs. indoor air quality

WHAT IS THE PROBLEM?

BACK TO OUR GRAY EXAMPLE

YOUR (NEW) PRIORITIES TOWARDS FINISHES:

* natural / non-toxic
* low embodied energy (includes salvaged)
* sustainably harvested
* recyclable/biodegradable
* recycled content
* locally harvested
* durability



we should not

KILL

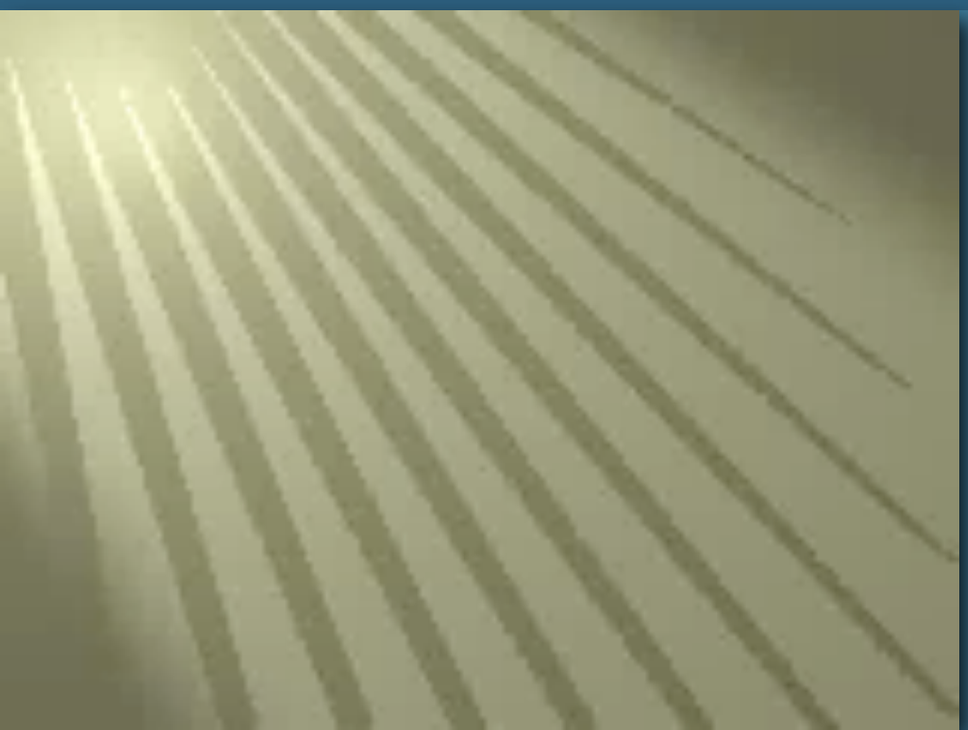
our clients

CHANGE YOUR THINKING

FINISHES | SYSTEMS | STRUCTURE | SITING

YOUR (NEW) GOALS (shown in priority):

* indoor environmental quality
* water efficiency
* site selection & planning
* energy reduction
* material & resource efficiency
* community building



these are in

ADDITION

to budget & schedule

HEALTH

3 percent

IN 1980

9 percent

IN 2003

22 percent

higher on

S.A.T.’s

natural light

3.2-.8

more days

SOURCE: Energy Performance of Daylit Schools in North Carolina (Mike Nicklas and Gary Bailey, 1996)

WATER

green schools water savings

using ultra low flow fixtures

SOURCE: Capital E

WATER CATCHMENT

1000sf = 632 gal/in

10,000 = 6320 gal/in

30,000sf building / 3 floors
= 10,000sf roof area

= 21 inches per year

x 6,320 gallons = 132,720 gallons/year

DRIP IRRIGATION

WATER SAVINGS

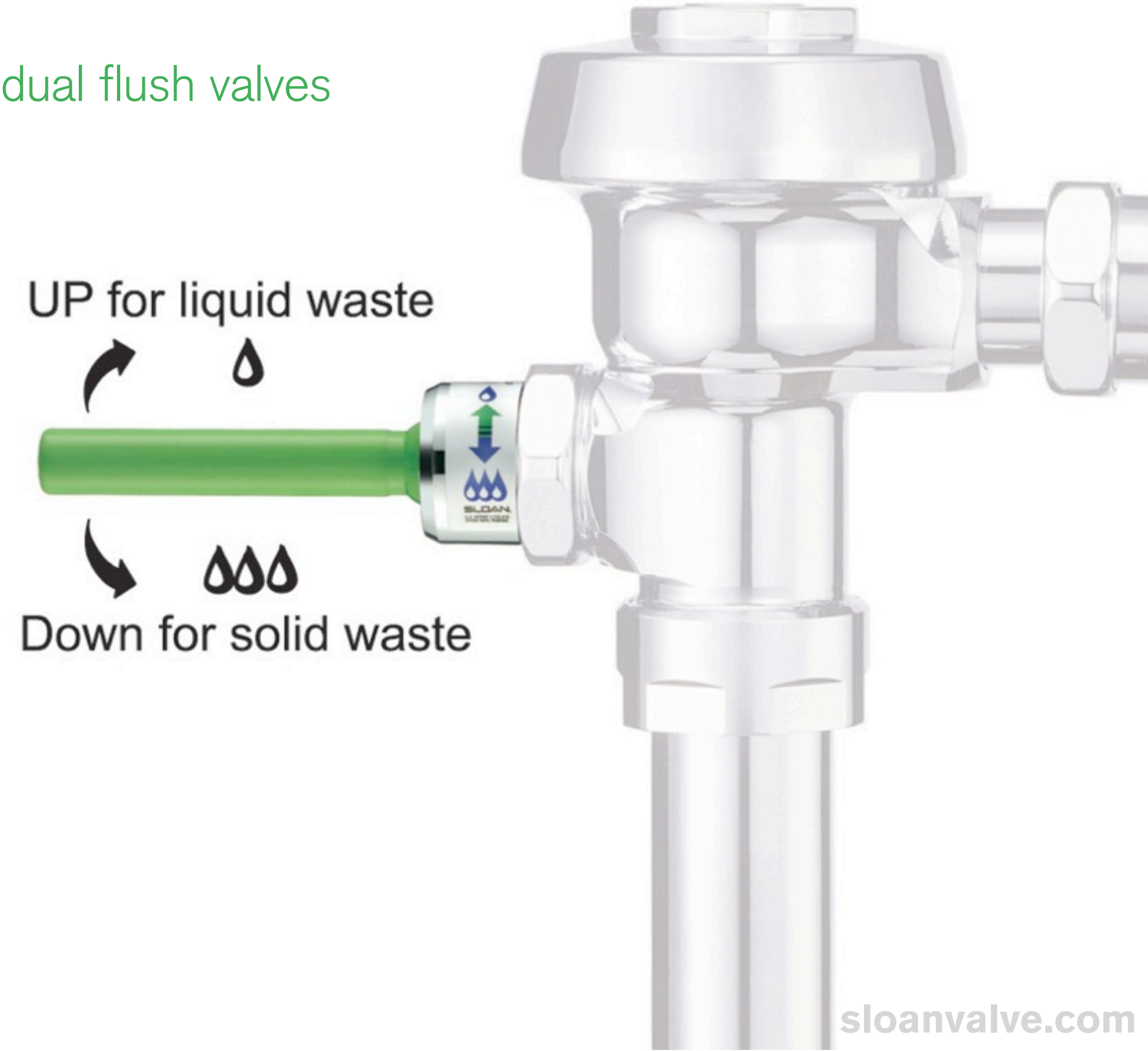
60%

POROUS PAVING

20°

LOWER TEMPERATURE

retrofit with dual flush valves



collect condensate from A/C

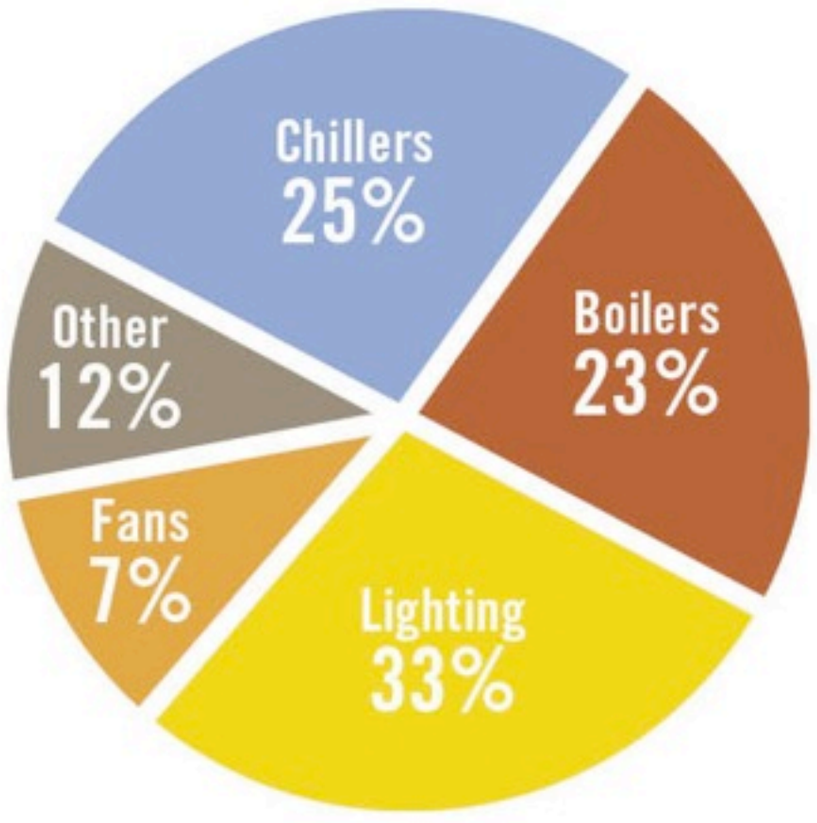
ENERGY

school energy costs

$110

per student/yr

Understanding Energy Use in Schools



This will vary depending on your climate region.

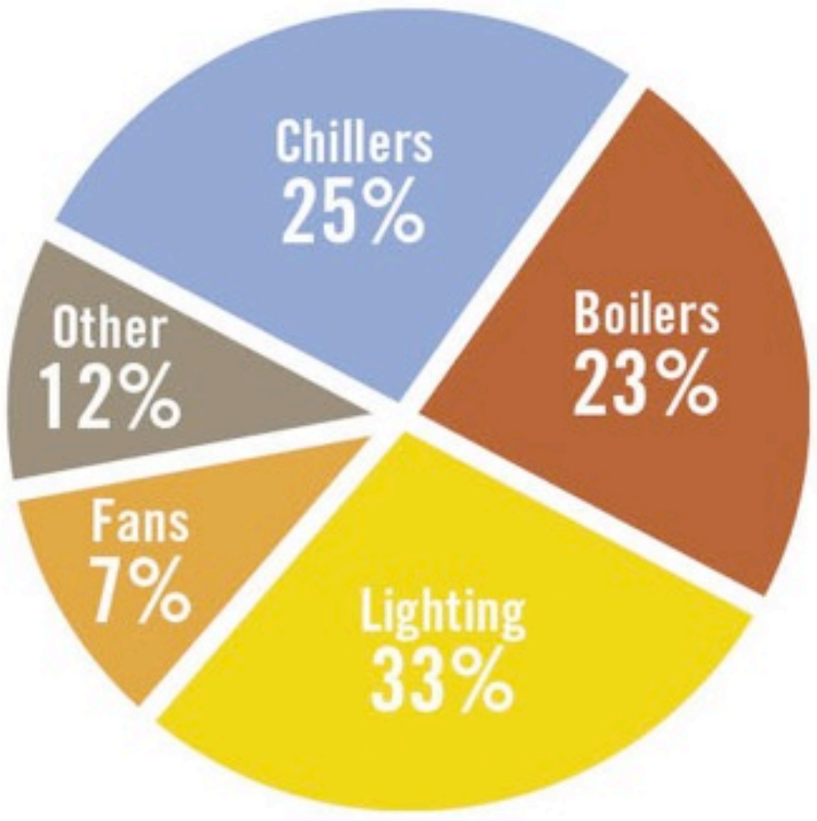
How much does your school spend each year on energy?

Elementary School:
$70,000 to $150,000

Middle School:
$100,000 to 200,000

High School:
$200,000 to $650,000

Understanding Energy Use in Schools



This will vary depending on your climate region.

How much does your school spend each year on energy?

Potential No-Cost Savings → 10%

Elementary School:
$70,000 to $150,000 ~ $10,000

Middle School:
$100,000 to 200,000 ~ $15,000

High School:
$200,000 to $650,000 ~ $30,000

if every school went green

$20,000,000,000

over next 10 years

GREEN ROOF SAVINGS

40%

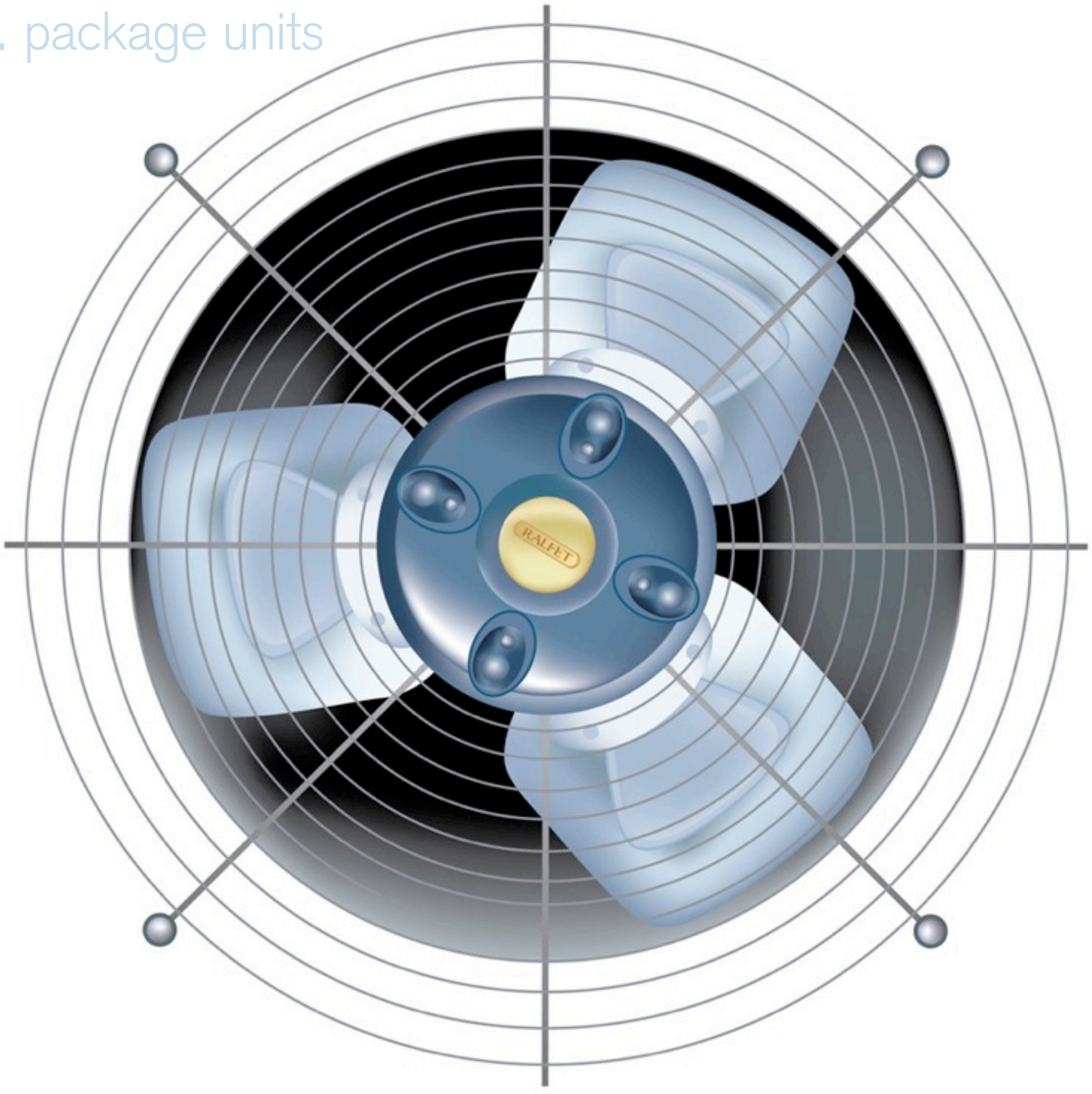
energy savings

$ 12-24 sq ft
green roof

$ 8 sq ft
green grid

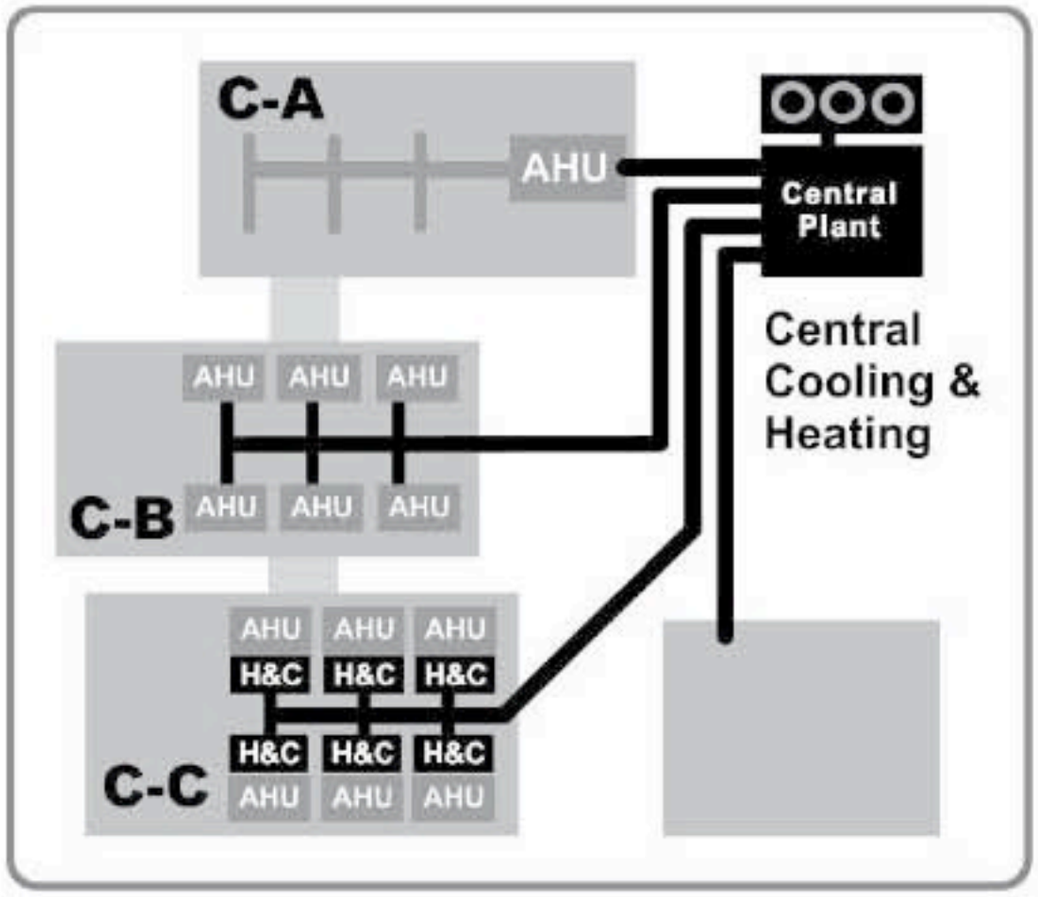
hydrotechusa.com

central vs. package units



no heat = no school

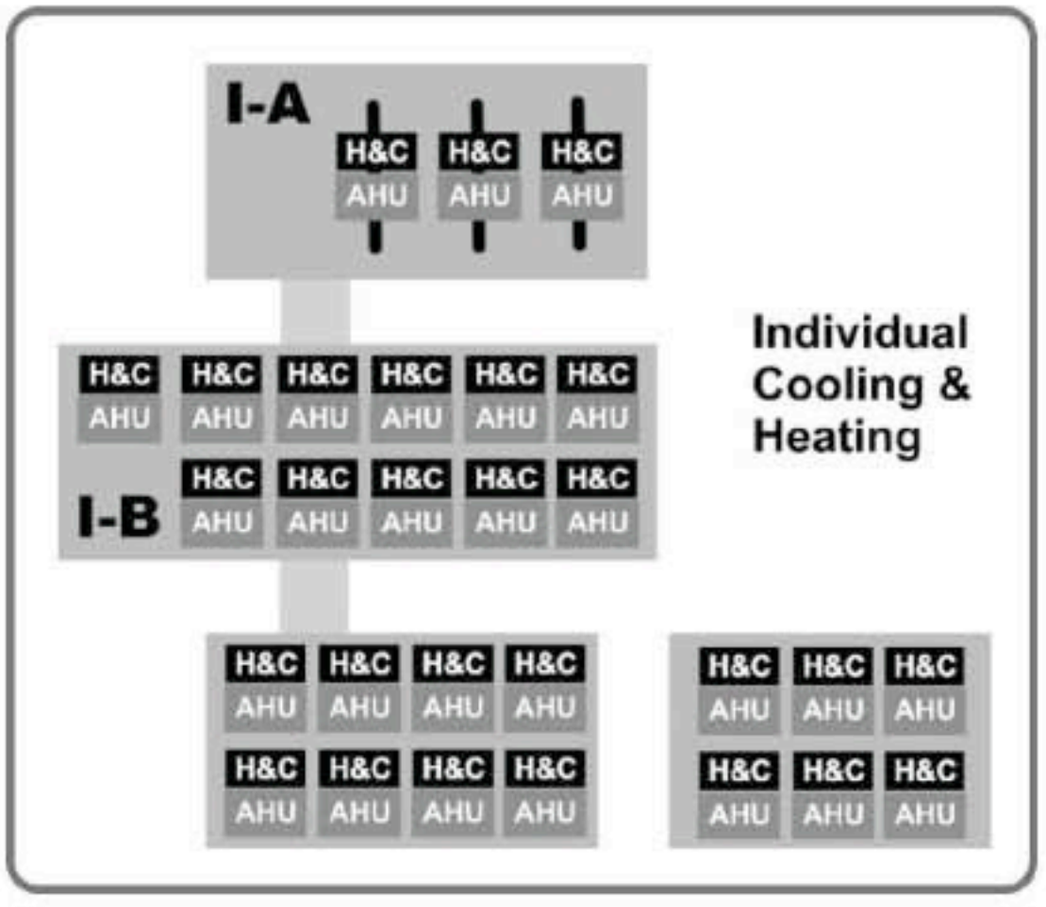
Central Plant



- Chiller system
- Hot water/steam
- Water-source HP

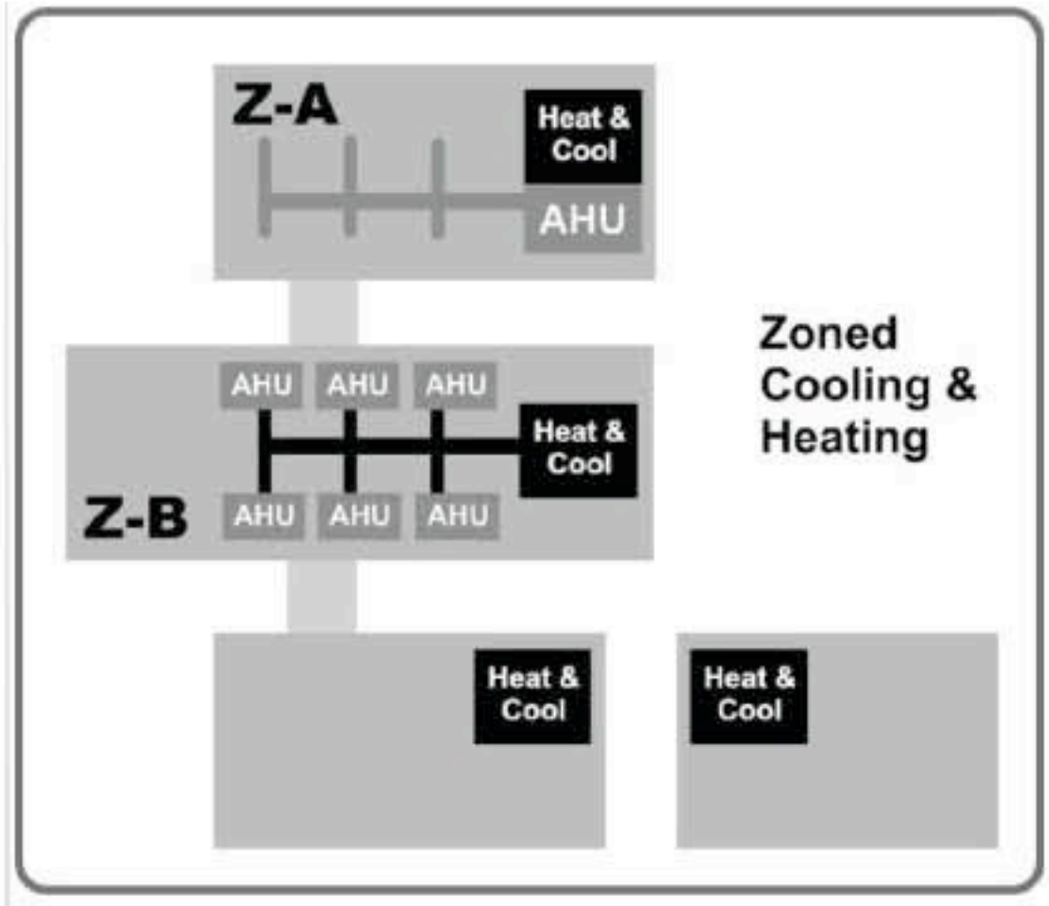
redundant, but reliable

Individual Units



- Wall units
- Roof top units
- Split systems

Zoned Systems

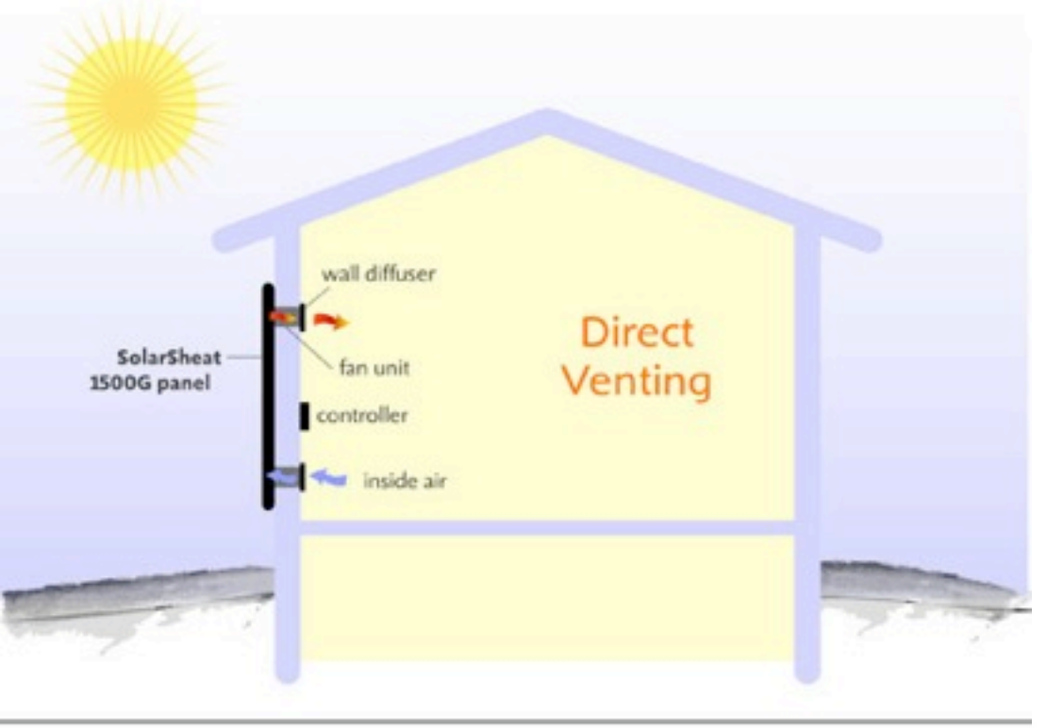


- Small chiller systems
- DX systems
- Split systems


NOISY AIR CONDITIONER
gets shut off and the door opens.

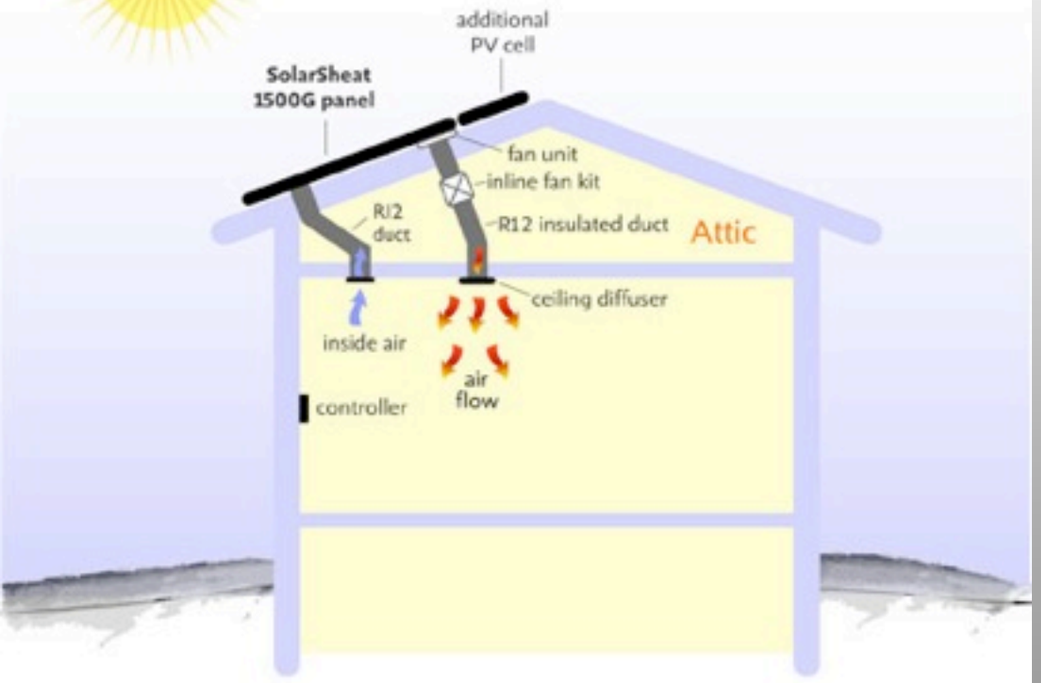
Direct Venting into a Room - SolarSheat 1500G

How it works: The SolarSheat 1500G panel heats inside air. The amount of heat produced is based on the volume of air passing through the solar panels and the degree of sunshine. The SolarSheat is a supplemental heating system. It does not work at night. No AC electricity is required.



Roof Mounting - SolarSheat 1500G

How it works: The SolarSheat 1500G panel heats inside air. The amount of heat produced is based on the volume of air passing through the solar panels and the degree of sunshine. The inline fan kit can be powered by an AC/DC wall adaptor or with an additional PV cell, to keep it off the grid.



school energy savings

8% off ENERGY BILL

1° lower THERMOSTAT

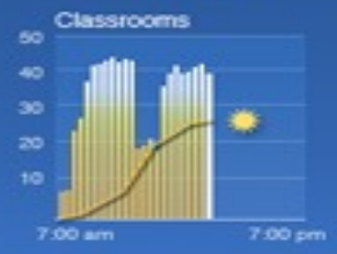
SOURCE: Capital E

Electricity

Measured in Kilowatts per hour
The kilowatt (symbol: kW), is equal to one thousand watts.

Did you know?
Most electronic devices continue to draw electricity even when turned off or left in "standby" mode. In fact, according to ENERGY STAR, the amount of electricity used nationally by idle equipment is roughly equal to the output of 17 power plants.

38 kw



8 kw

27 kw

3:00 pm

25 kw

SHADE SOUTH & WEST WINDOWS

(here)


EXIT
Excellence is the gradual
result of always
striving to do better.
-Pat Riley

LIGHT

DAYLIGHTING

is the most important thing you can do in a school.

more than
student/teacher ratio

more than
classroom size

Energy Performance of Daylit Schools in North Carolina (Mike Nicklas and Gary Bailey, 1996)

26%

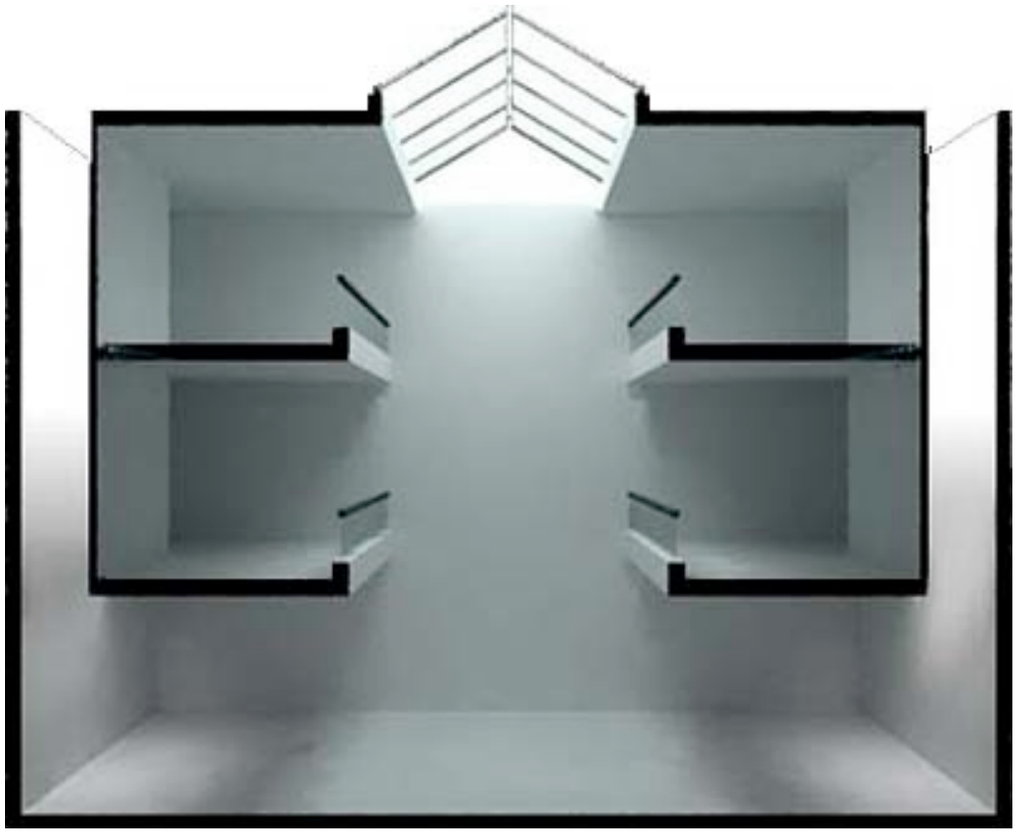
in reading

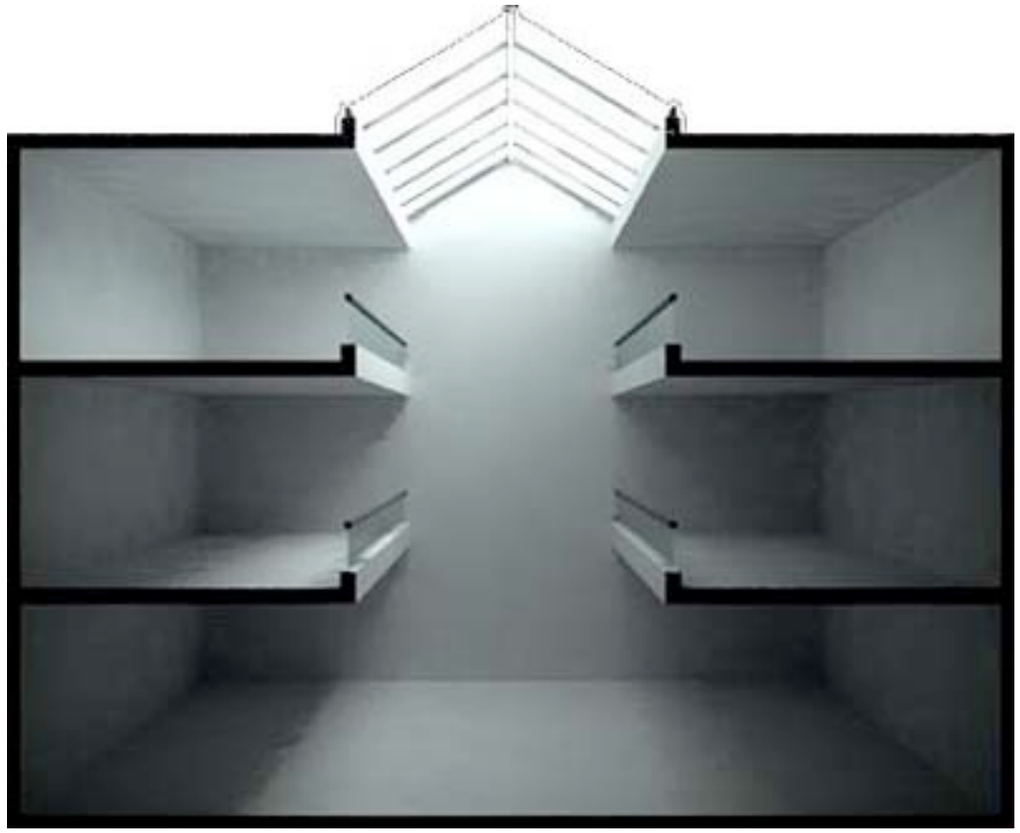
daylit schools

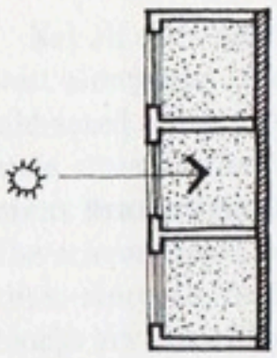
Energy Performance of Daylit Schools in North Carolina (Mike Nicklas and Gary Bailey, 1996)

Window views increase student performance

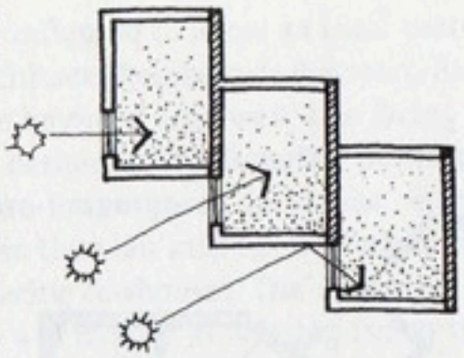
5-10%



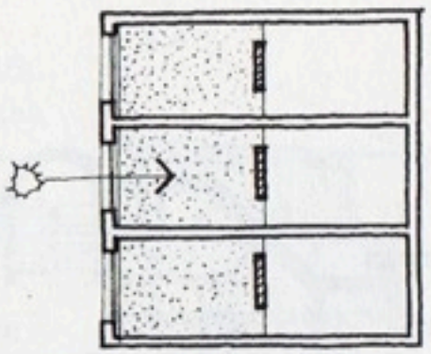




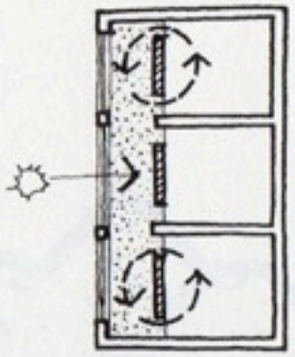
E-W Elongated



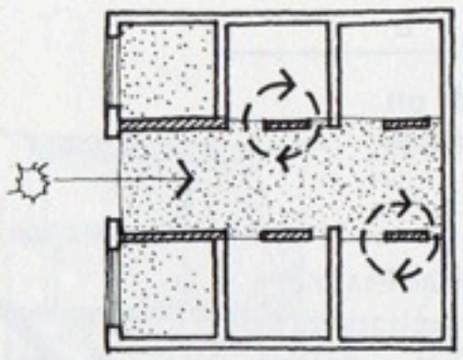
Staggered



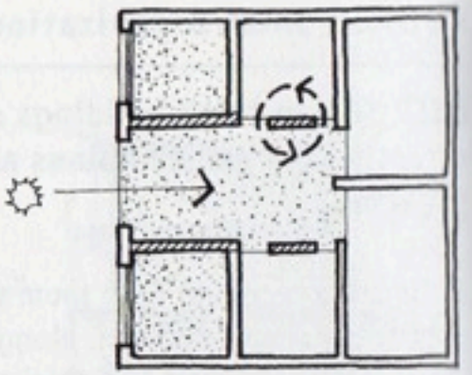
Linked N & S Rooms



Linked to Connector Room

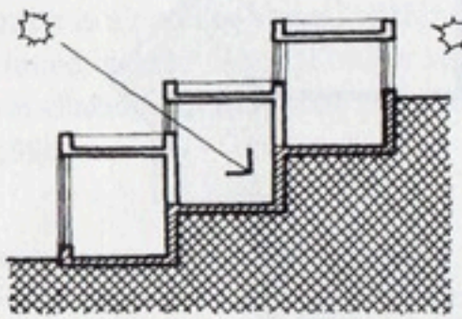


Deep Room Between

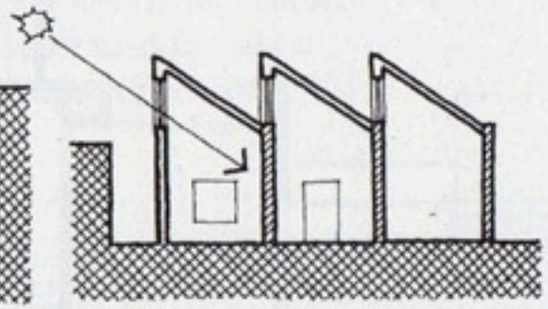


S-Facing Big Room

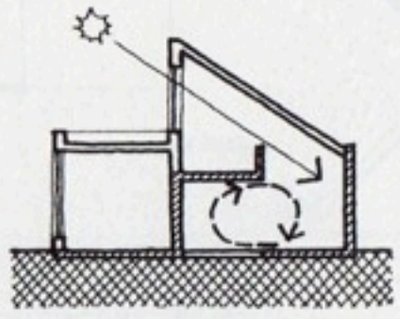
Plan Diagrams



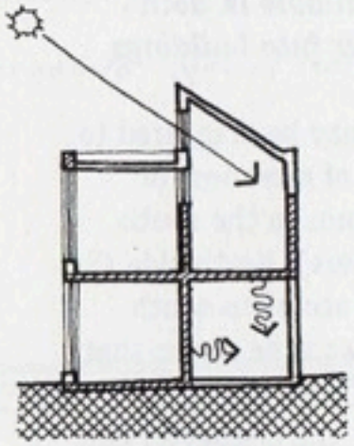
Stepped Section on Hill



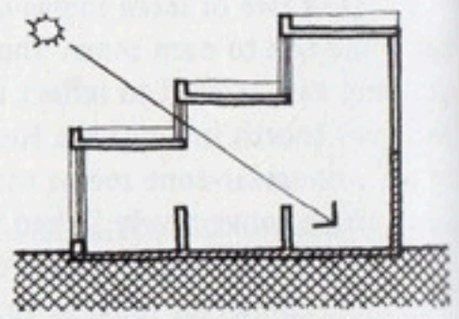
Roof Heat Over Obstruction



Mezzanine Under Slope

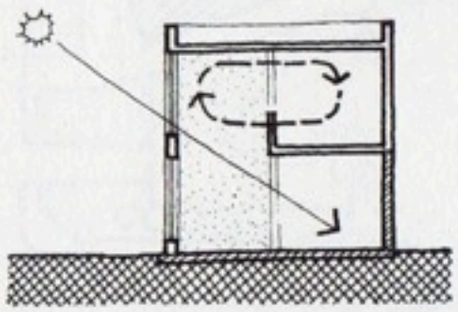


Tall Room Behind

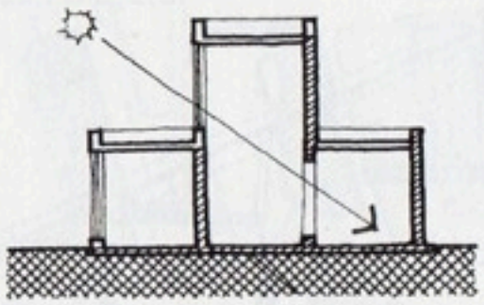


Stepped Clerestories

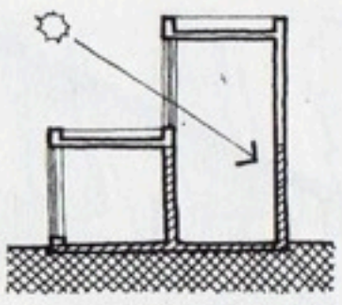
Section Diagrams



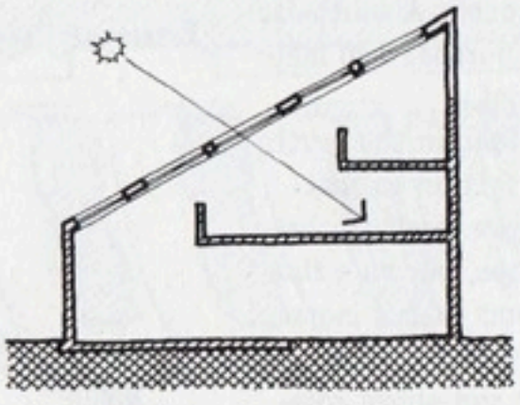
Tall Room to South



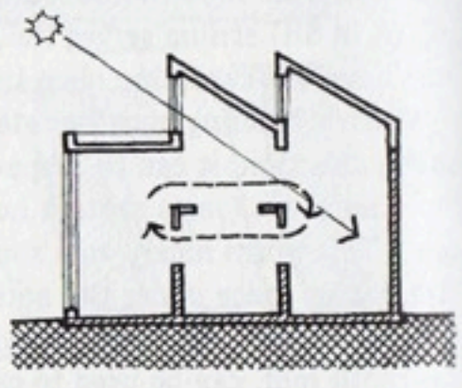
Tall Room Inbetween



Tall Room on North



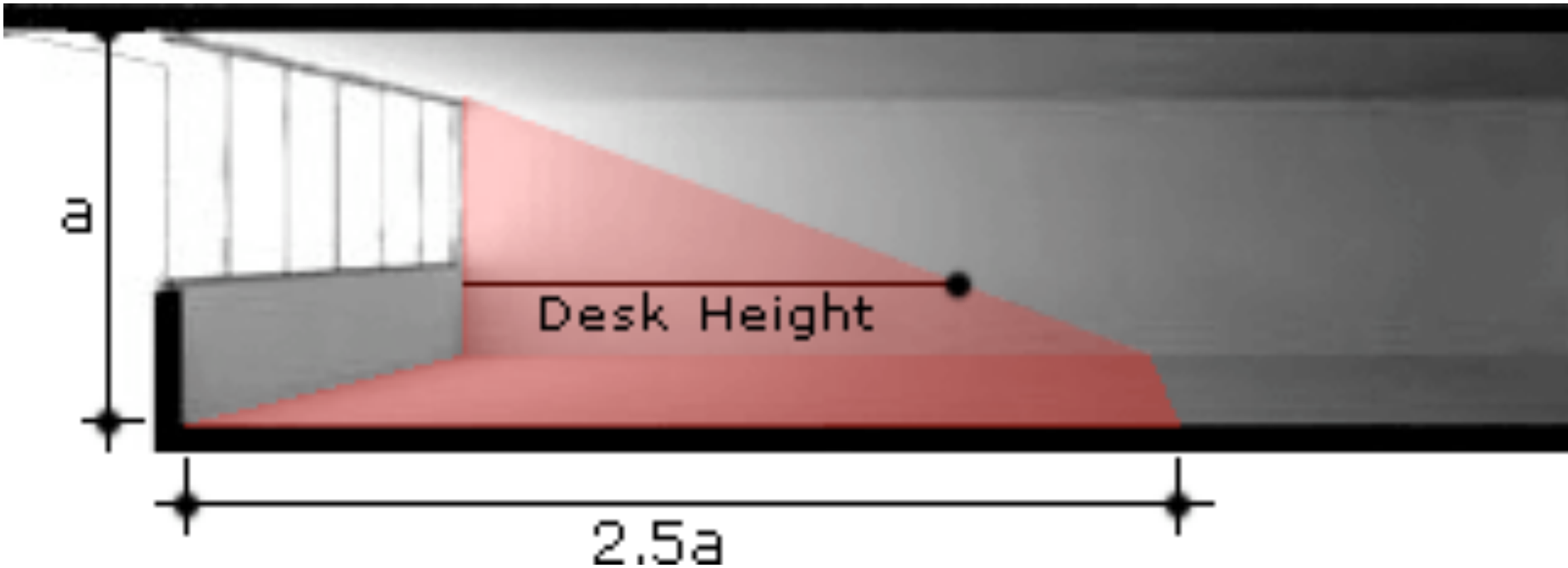
Trays Under Slope

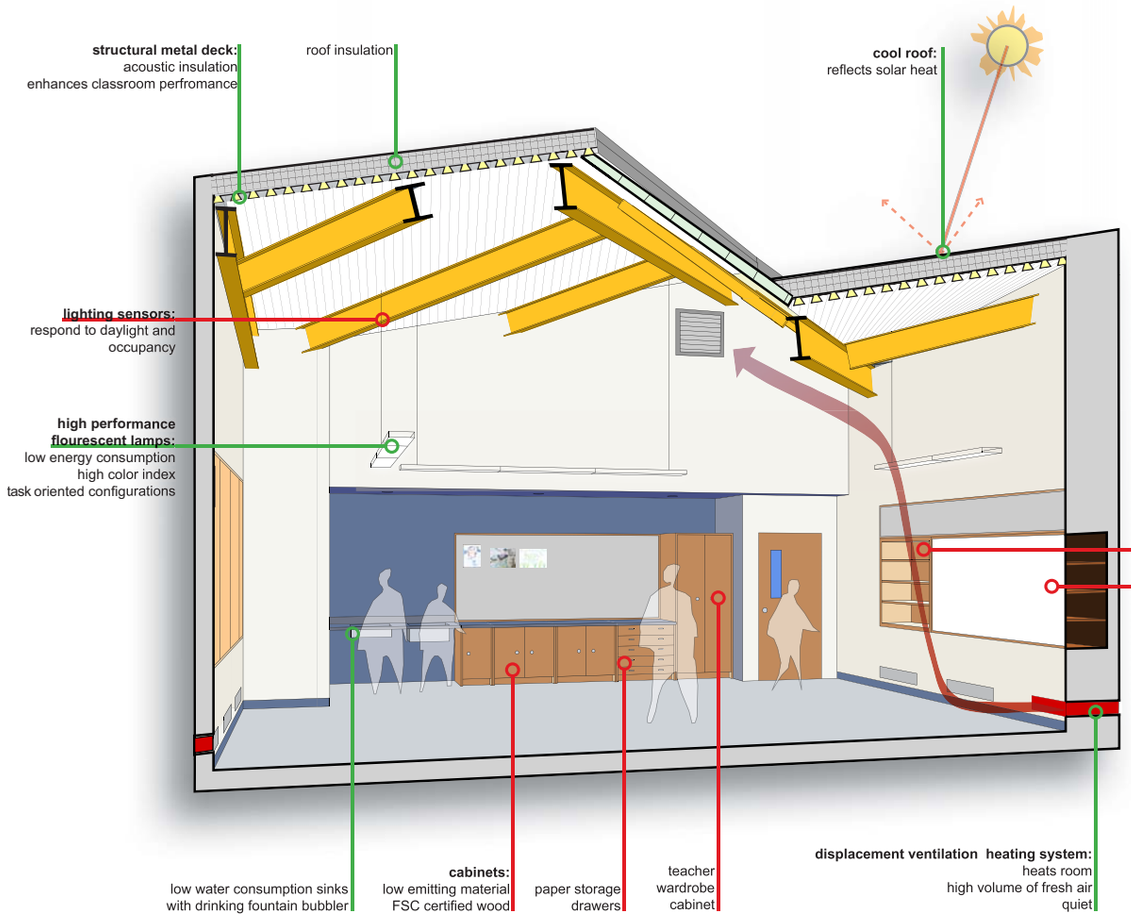


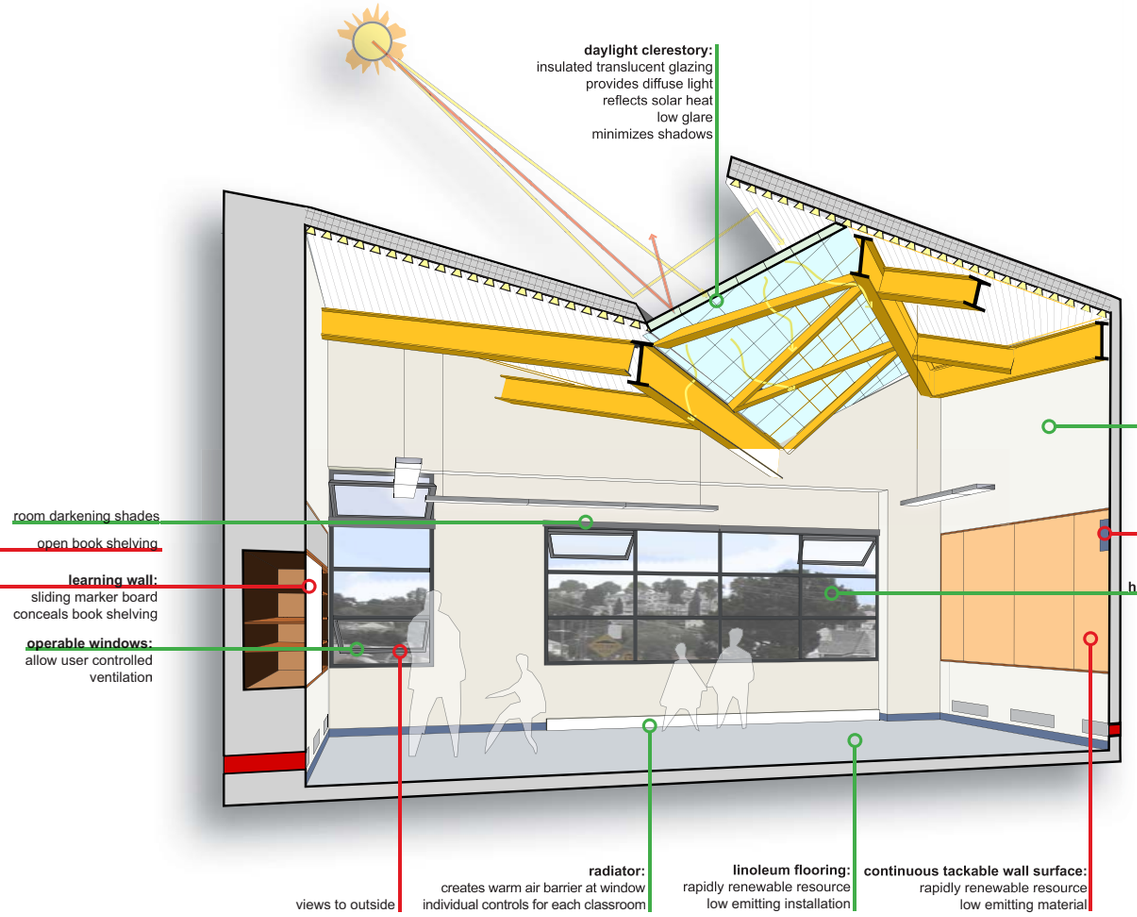
Big Room Encompassing

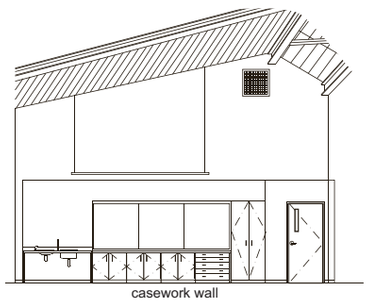
Section Diagrams

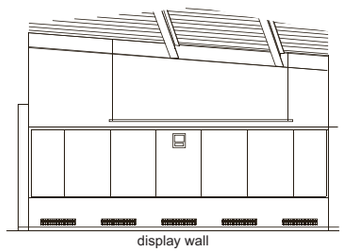
Plan and Section Organizations for Solar Heating of Thick Buildings

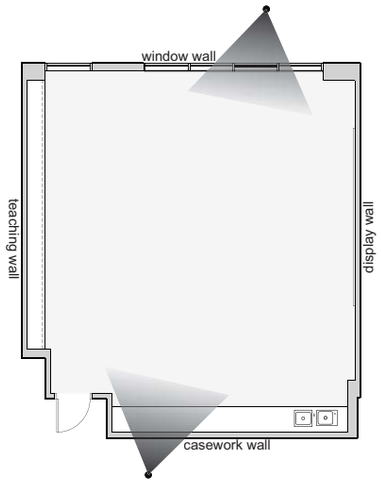

a
Desk Height
2.5a

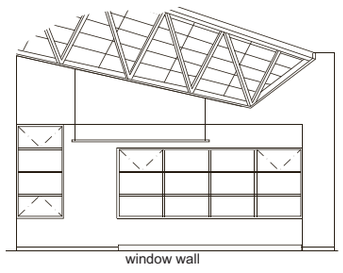


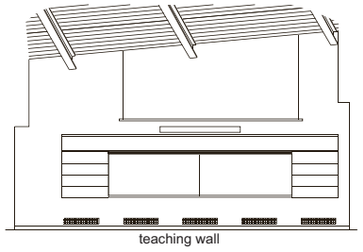








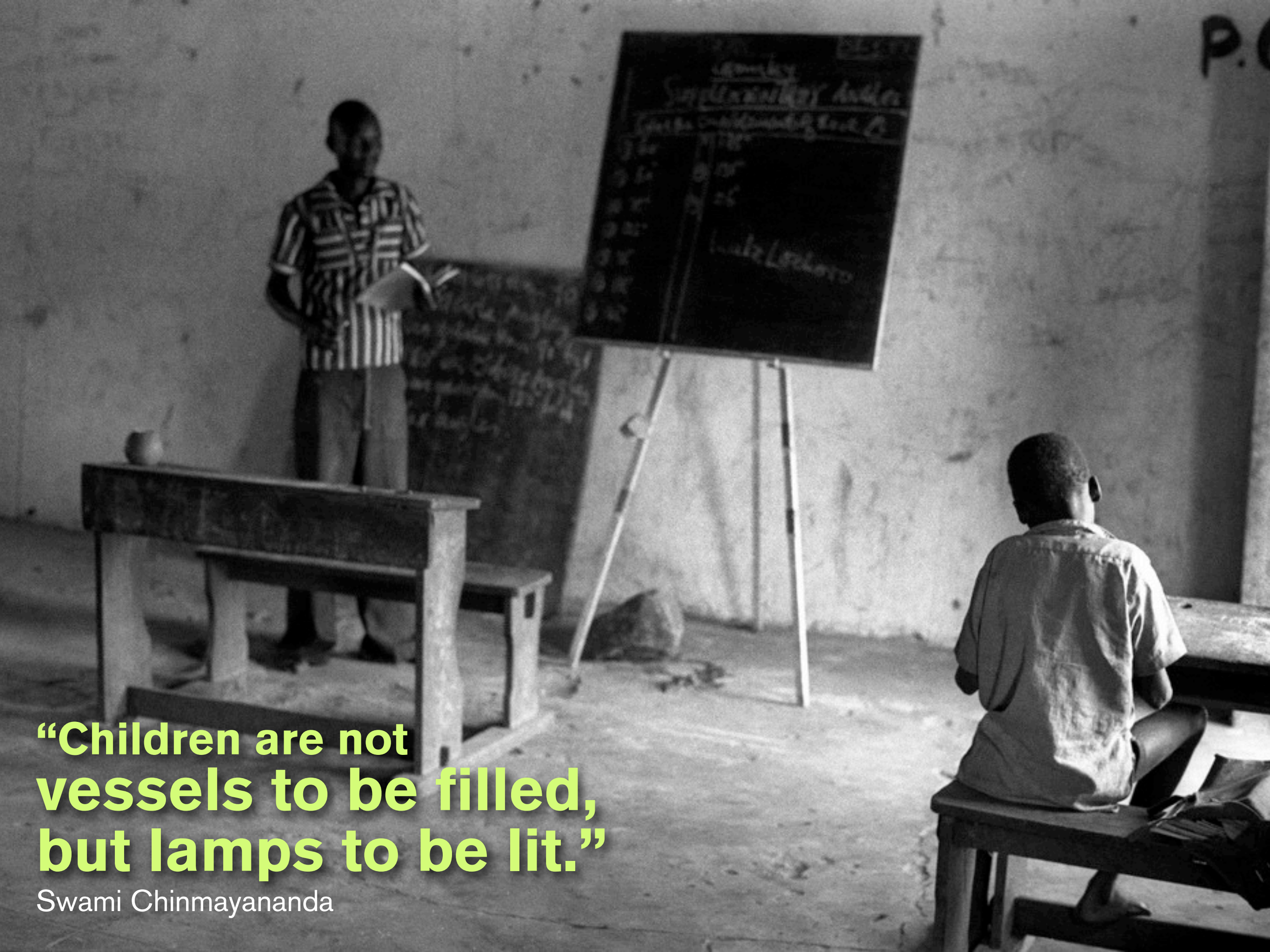




Gelfand Partners
ARCHITECTS

COX NEW CONSTRUCTION: TYPICAL CLASSROOM
May 14, 2008


EDUCATION



“Children are not vessels to be filled, but lamps to be lit.”

Swami Chinmayananda


Recycle
Compost
Landfill
SMART


24 HOUR
FITNESS
24 HOUR

- High school students calculating energy from **solar panels** on the roof.
- Middle school students studying ecosystems in their **constructed wetland.**
- Kindergarteners growing lunch in an **organic garden.**

make the
water cycle
visible


make the
energy use
visible

THE EDIBLE
SCHOOLYARD

THE EDIBLE SCHOOLYARD
NEW ORLEANS

esynola.org

SOURCE: North East Strategic Partnership for Sustainable Schools (NESPSS)
www.sustainableschools-ne.org.uk

SOURCE: North East Strategic Partnership for Sustainable Schools (NESPSS)
www.sustainableschools-ne.org.uk

SOURCE: North East Strategic Partnership for Sustainable Schools (NESPSS)
www.sustainableschools-ne.org.uk

Seaton Primary
Devon, UK

SOURCE: North East Strategic Partnership for Sustainable Schools (NESPSS)
www.sustainableschools-ne.org.uk

Eastchurch Primary, Kent, UK

SOURCE: North East Strategic Partnership for Sustainable Schools (NESPSS)
www.sustainableschools-ne.org.uk


School is a
living classroom


1388-2/HB
SOFT

Doctors are Scarce

One out of three has gone to war

Be Prepared

for minor injury

for minor illness

LEARN First Aid & Home Nursing

CD


INVENT for VICTORY
ARMY
ARMY
ALL AMERICANS WHO HAVE AN INVENTION
OR AN IDEA WHICH MIGHT BE USEFUL TO
THEIR COUNTRY ARE URGED TO SEND IT
IMMEDIATELY TO
NATIONAL INVENTORS COUNCIL
DEPARTMENT OF COMMERCE-WASHINGTON, D.C.

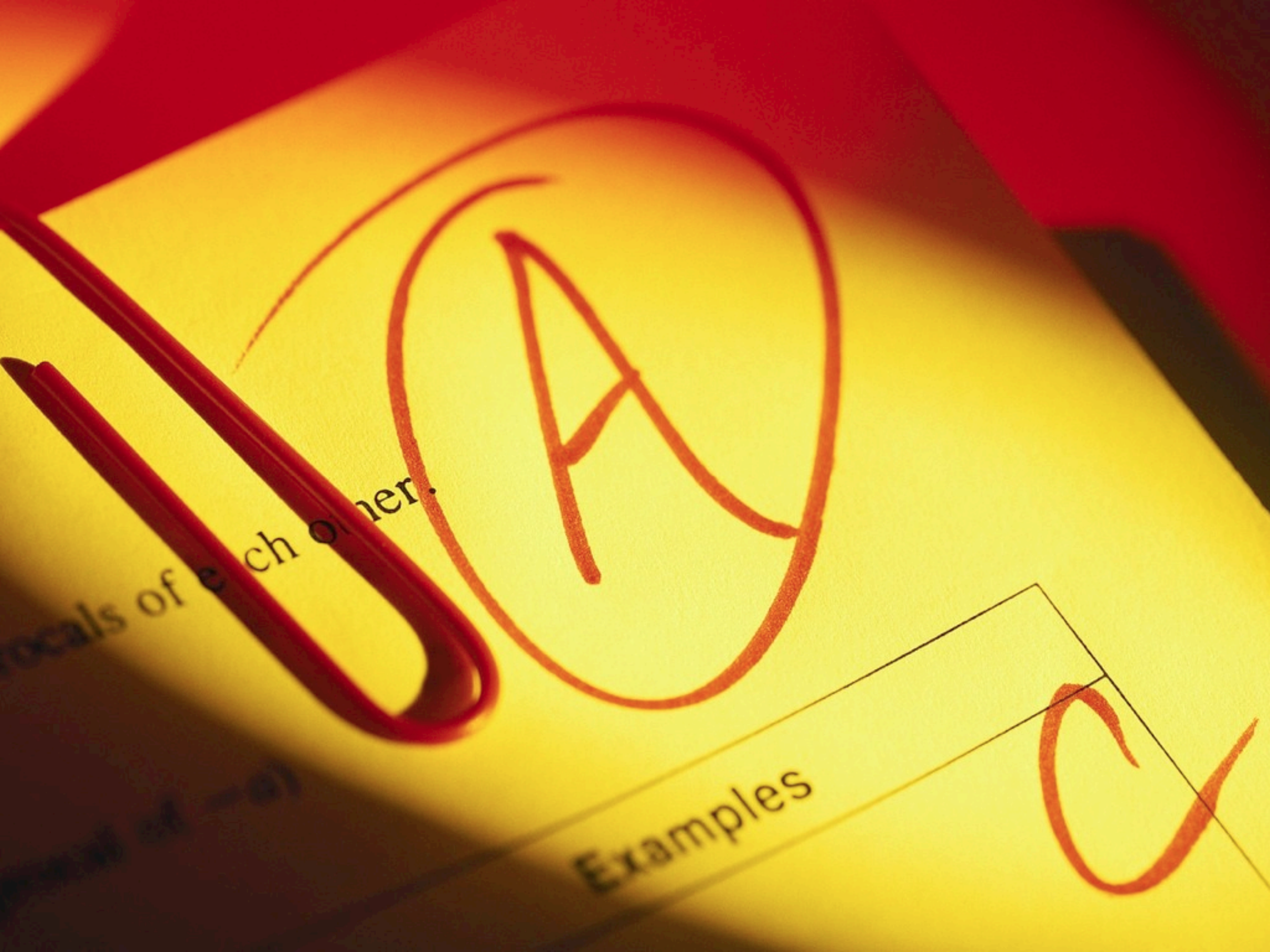
ANSWERS

1.

2. 90

3. 15

3


ch o ner.
Examples


CHPS
COLLABORATIVE FOR
HIGH PERFORMANCE
SCHOOLS
Better buildings. Better students.

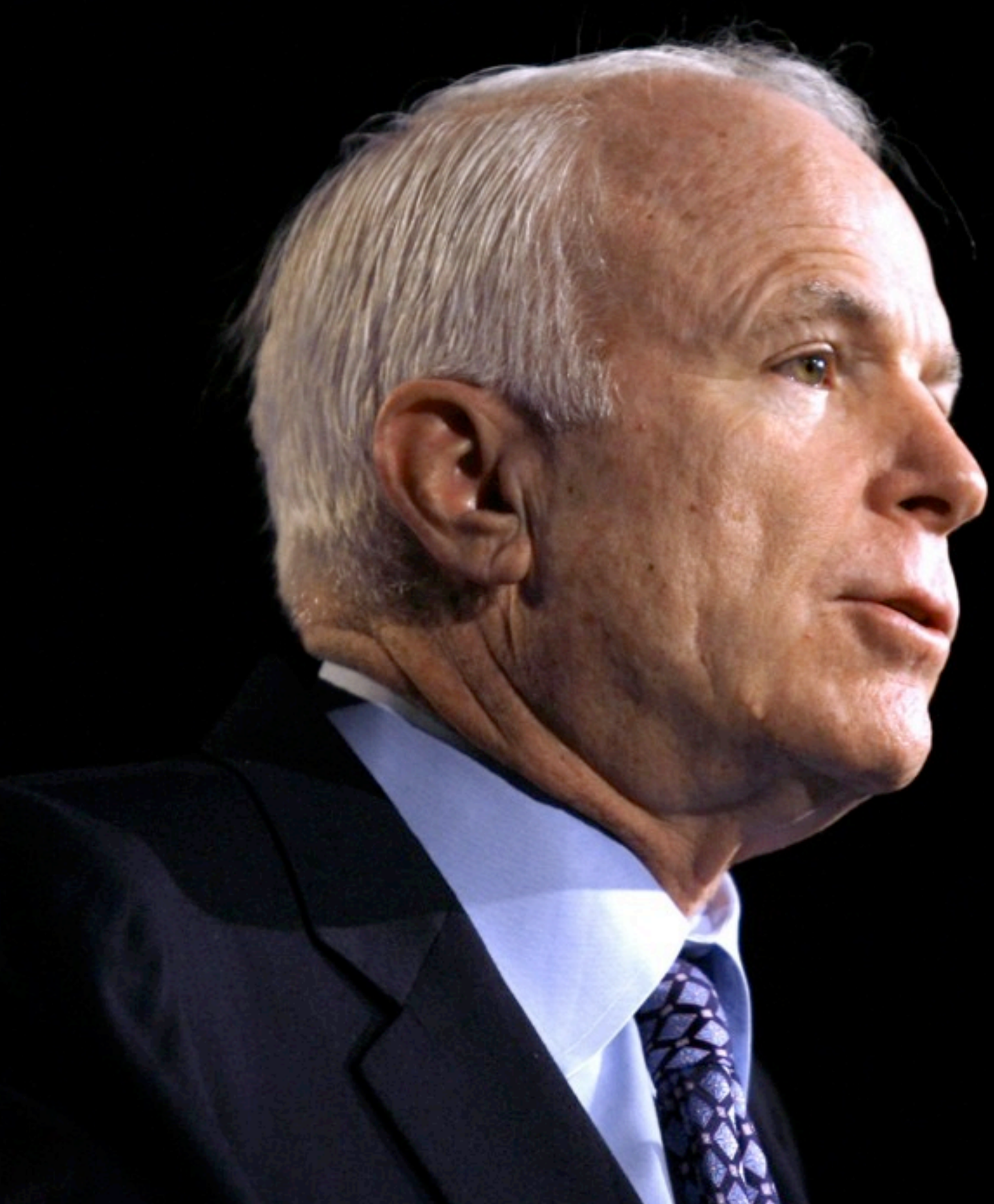
No Apology:
The Case For American Greatness

Gov. Mitt Romney


#
U.S.A.


DWIGHT SCHRUTE
DETERMINED
WORKER
INTENSE
GOOD WORKER
HARD WORKER
TERRIFIC

LIFE EXPECTANCY



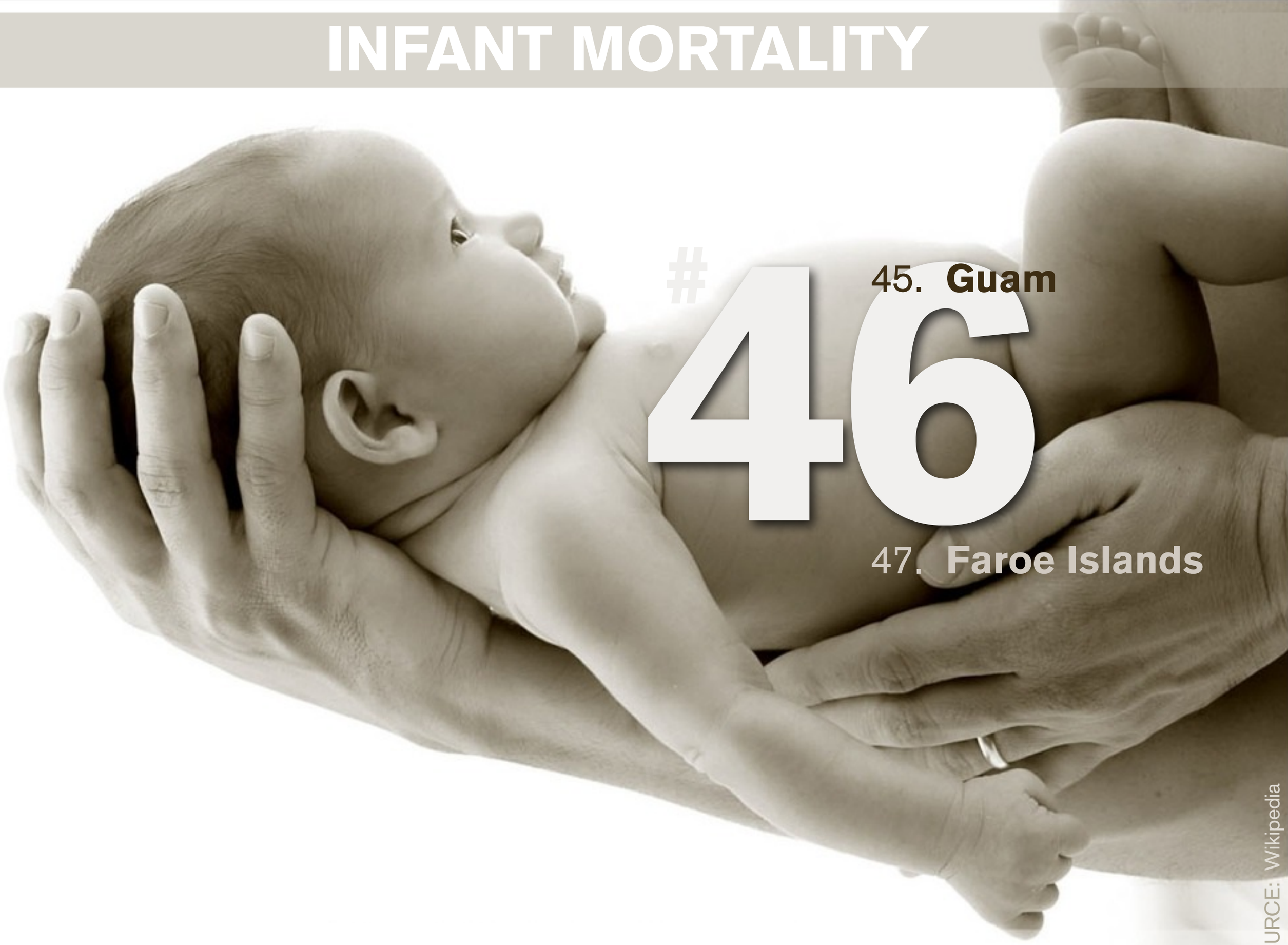
37. **Cuba**

#38

39. **Portugal**

SOURCE: Wikipedia

INFANT MORTALITY



45. **Guam**

#46

47. **Faroe Islands**

SOURCE: Wikipedia

HEALTH CARE

SOURCE: World Health Organization

NUMBER OF DOCTORS

per capita

#52

51. **Cyprus**

53. **Slovenia**

SOURCE: NationMaster.com

SOLAR POWER

per capita

1. Luxembourg
2. Laos
3. Japan
4. Costa Rica
5. Netherlands
7. Korea, South

#6

SOURCE: NationMaster.com

GROSS DOMESTIC PRODUCT

8

7. Ireland

9. Iceland

SOURCE: InfoPlease.com

EMPLOYMENT

#10

9. **Canada**

11. **Australia**

SOURCE: Wikipedia

MINIMUM WAGE

12. **Switzerland**

#13

14. **Austria**

SOURCE: Wikipedia

EDUCATION SPENDING

% of GDP

#37

37. **Estonia**

38. **Austria**

SOURCE: NationMaster.com

MATHEMATICAL LITERACY

#18

17. Czech Republic

19. Germany

SOURCE: NationMaster.com

BEER CONSUMPTION

#13

12. Spain

14. Croatia

SOURCE: Wikipedia

#

handgun deaths

SOURCE: NationMaster.com

SOURCE: NationMaster.com

SOURCE: NationMaster.com

executions

SOURCE: NationMaster.com

rape

SOURCE: NationMaster.com

#1

teen pregnancy

SOURCE: NationMaster.com

#

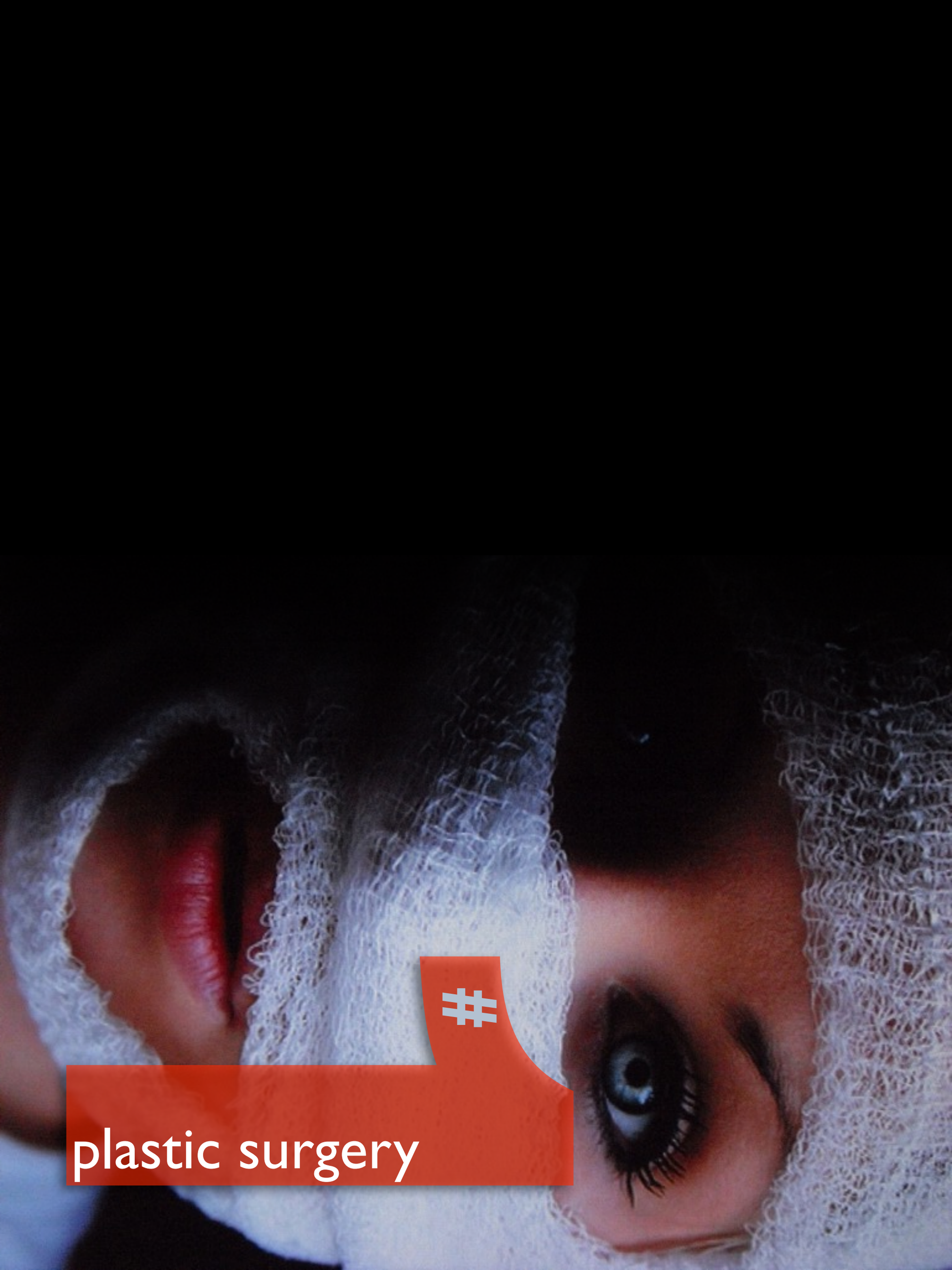
healthcare expense

SOURCE: NationMaster.com

personal spending

SOURCE: NationMaster.com

SOURCE: NationMaster.com


#
plastic surgery

SOURCE: NationMaster.com

SOURCE: Wikipedia

military spending

SOURCE: NationMaster.com

SOURCE: InfoPlease.com

total energy use

SOURCE: CIA World Factbook; DOE

energy consumption

SOURCE: CIA World Factbook; DOE

oil consumption

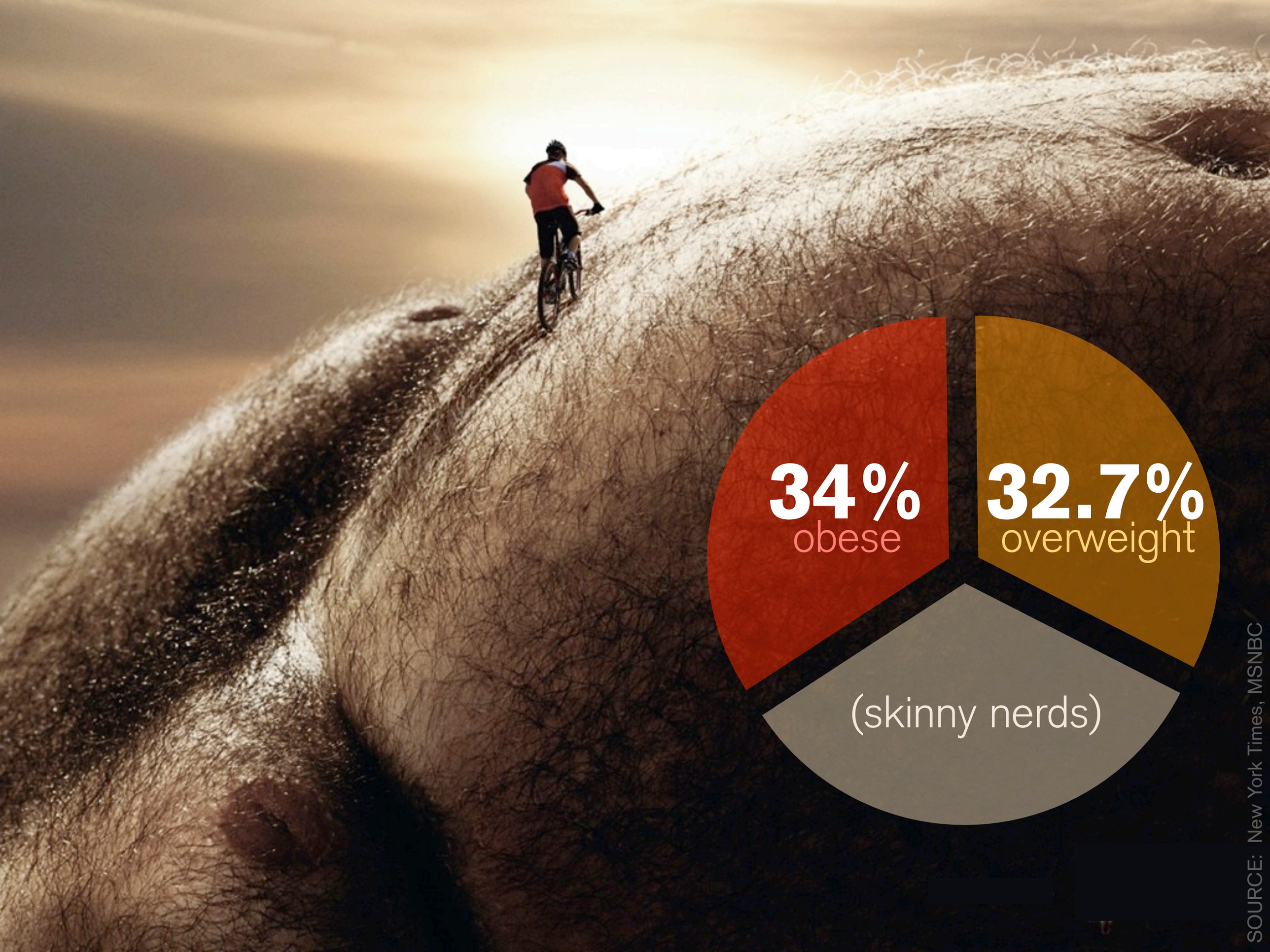
SOURCE: CIA World Factbook; DOE

oil imports

SOURCE: CIA World Factbook; DOE


#
carbon emissions

SOURCE: New York Times, National Geographic


34%
obese
32.7%
overweight
(skinny nerds)
SOURCE: New York Times, MSNBC

obese americans

72,000,000

SOURCE: New York Times


obesity is associated with over
300,000
deaths/yr
$117,000,000
healthcare costs
SOURCE: US Department of Health & Human Services

by

2030

86%

of americans obese

SOURCE: Johns Hopkins Bloomberg School of Public Health

every hour
in a car
each day

6%

increase in
likelihood
of obesity

SOURCE: Georgia Tech Study, 2009

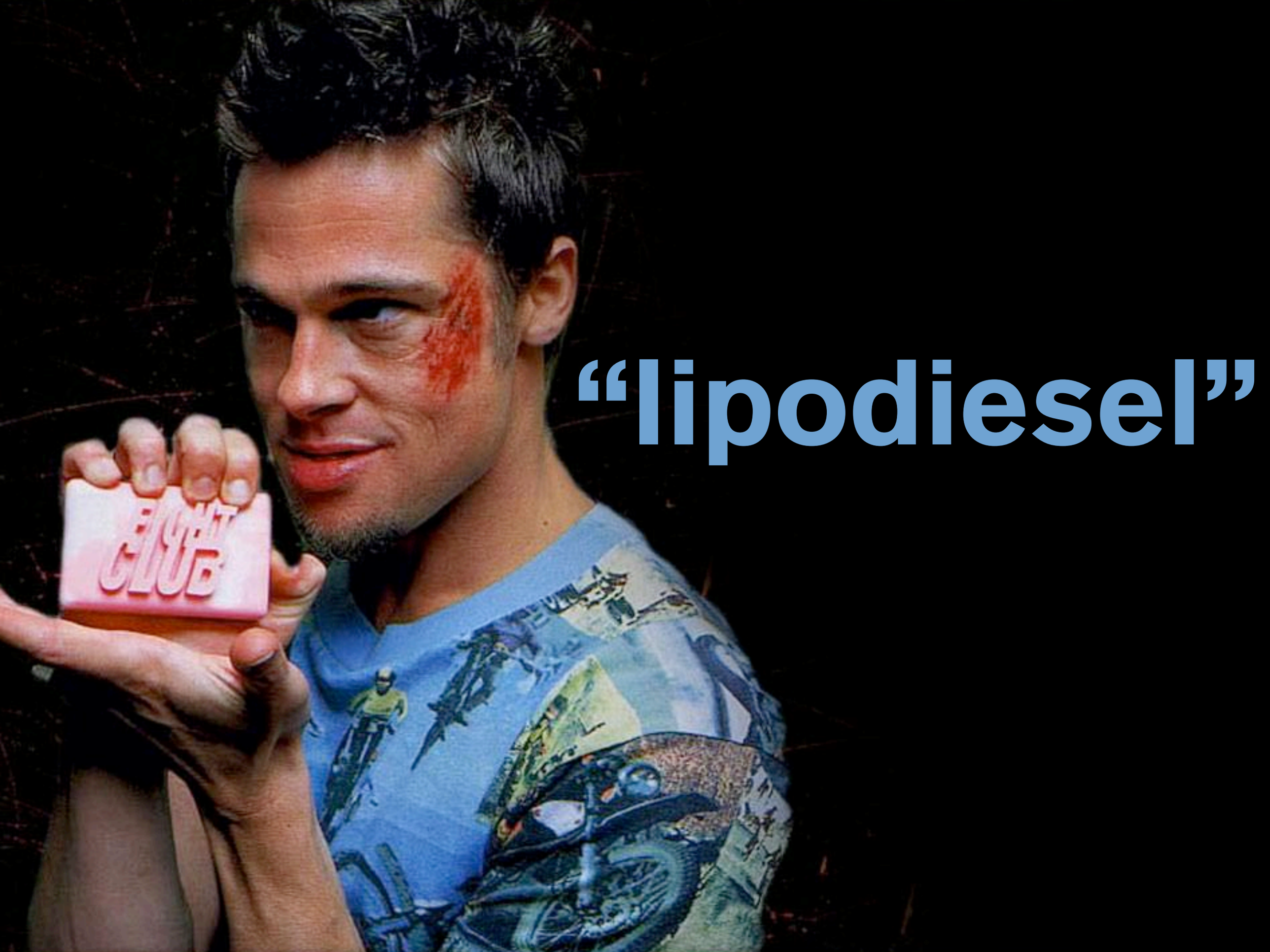

SONIC

35%

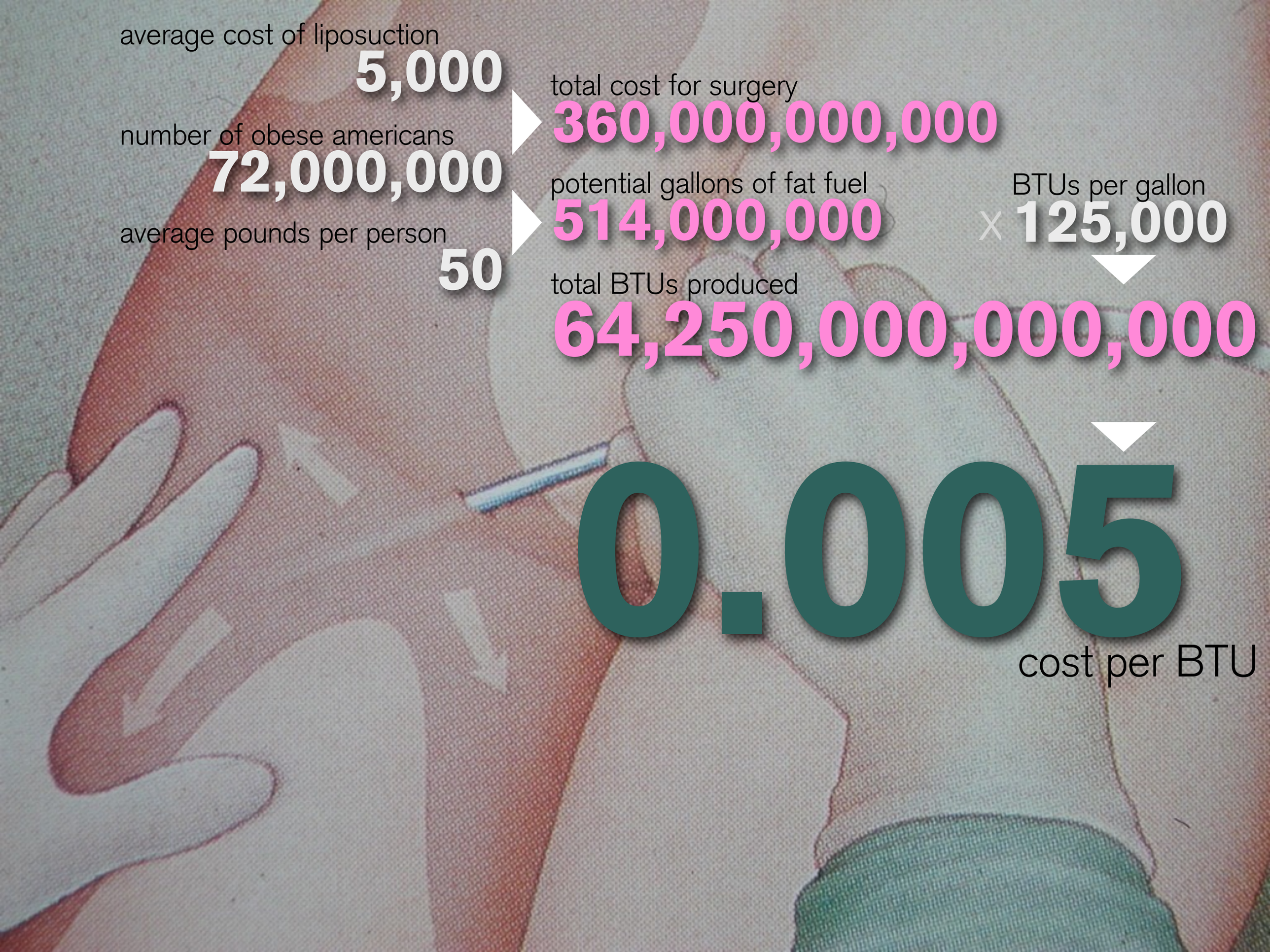
walkable neighborhoods

decrease in risk of obesity

walkscore.com



“lipodiesel”


average cost of liposuction
5,000
number of obese americans
72,000,000
average pounds per person
50
total cost for surgery
360,000,000,000
potential gallons of fat fuel
514,000,000
BTUs per gallon
x 125,000
total BTUs produced
64,250,000,000,000
0.005
cost per BTU

metric tons of co2 saved

3,210,350

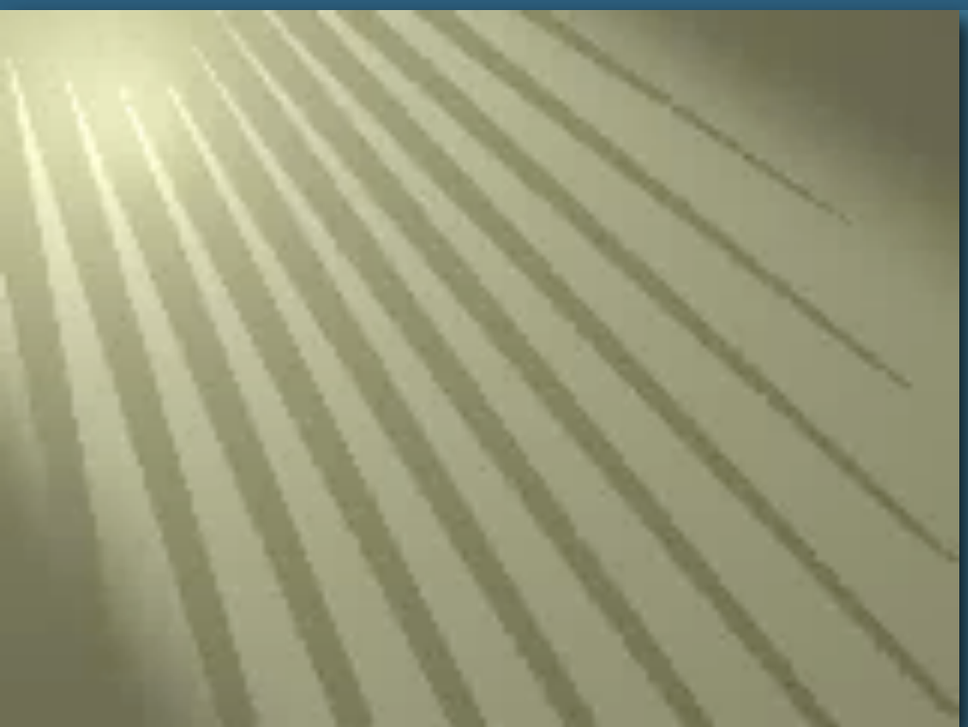
791,256 homes/year

1.21

gigawatts per person

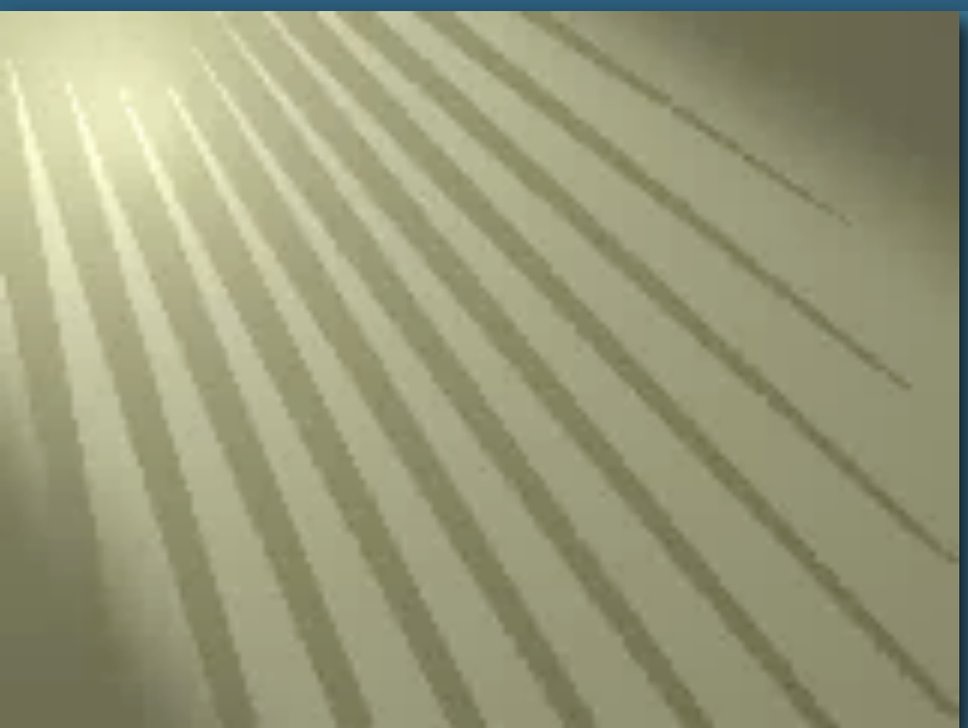

Gene Wilder

what's next: 5 action steps



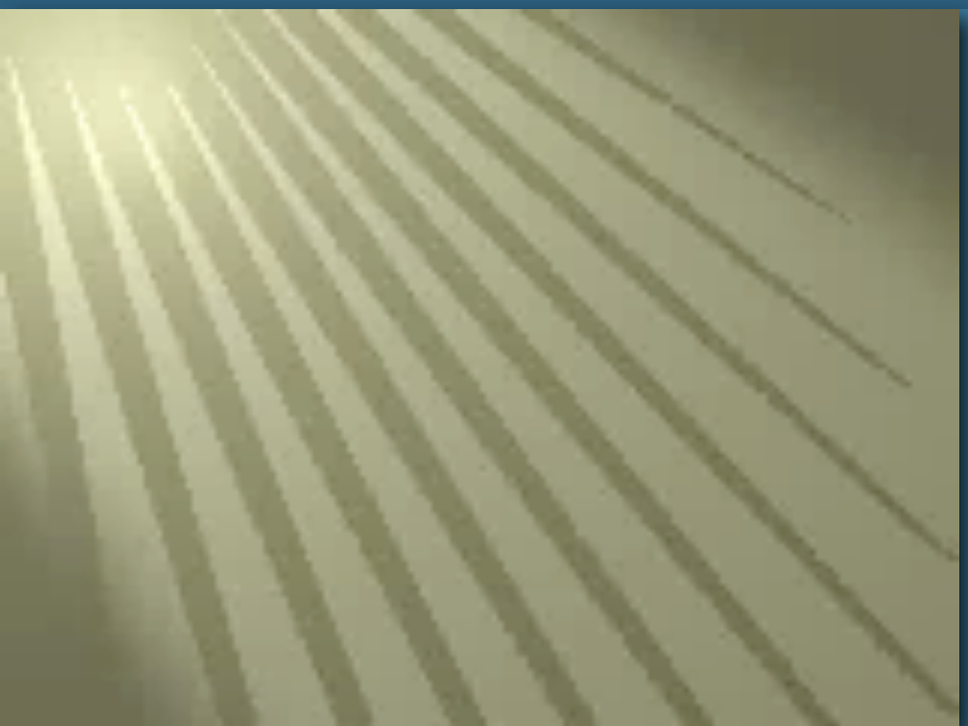
1

take action.
do something.
think big.



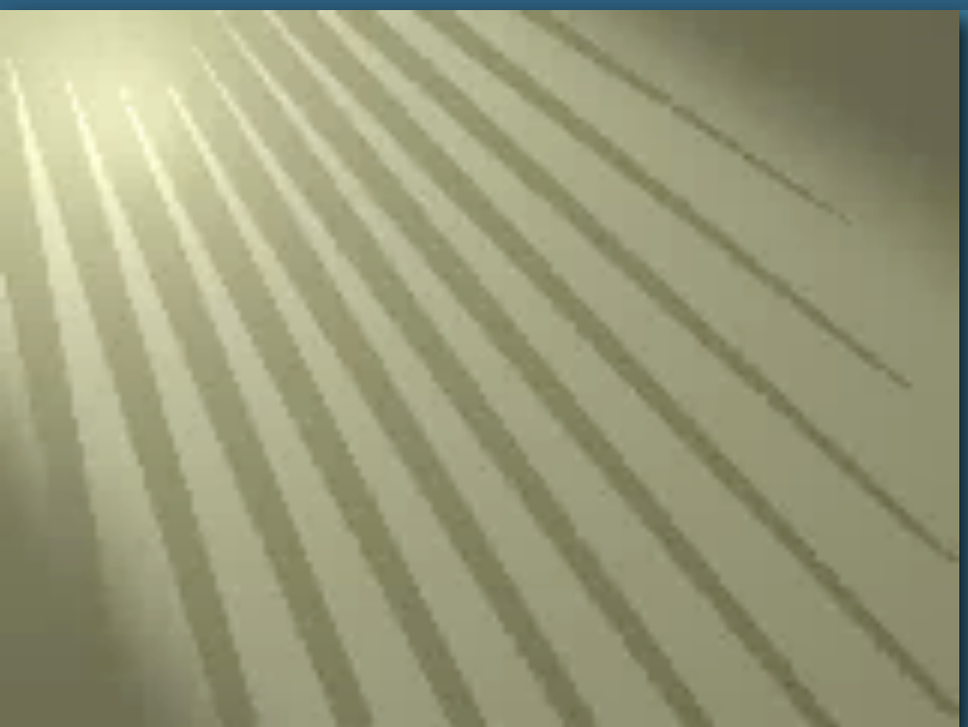
2

tell others. share your enthusiasm.

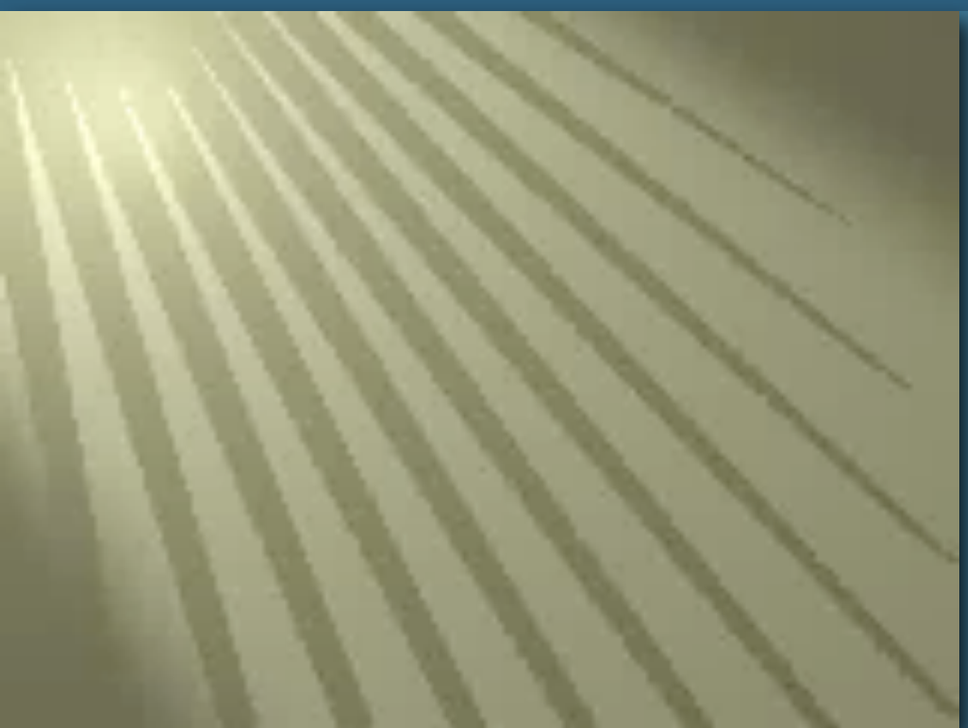


3

fill the materials library with green materials.



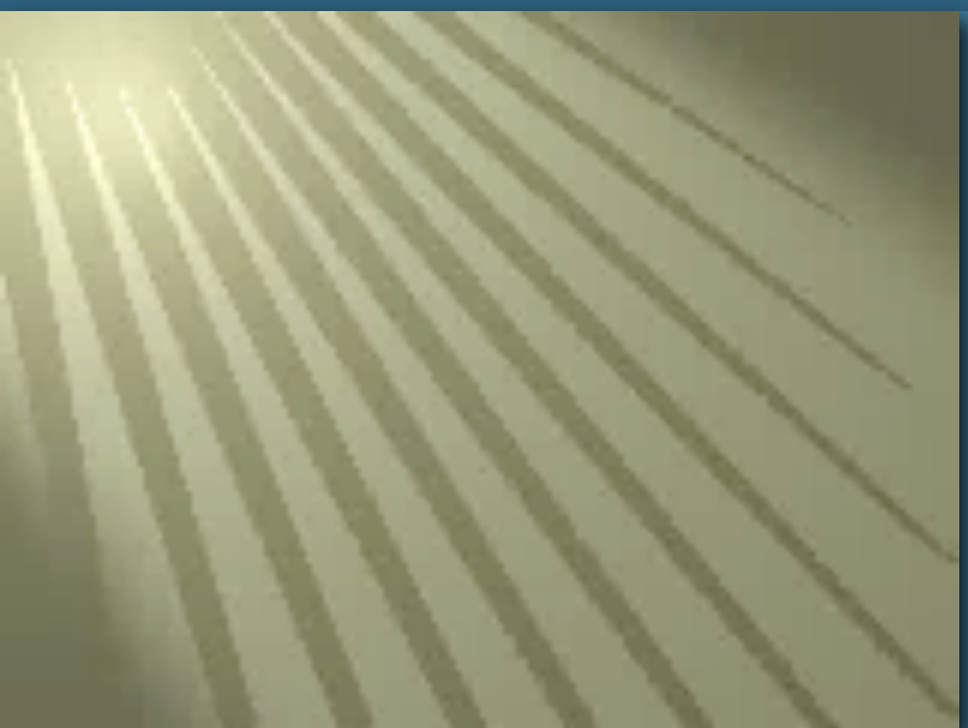
4 make a list of things you will not compromise.



5

become champion of one issue.

innovate.



“you must be the
CHANGE
you wish to see in the
WORLD...”

-Mahatma Gandhi

organic**architect**

QUESTIONS

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DROP OFF YOUR BUSINESS CARD

33% of schools use portables (1999)
average school building is 42 years old
link between oldest schools and students living in poverty
28% schools built before 1950
45% built between 1950-1969

SOURCE: National Center for Educational Statistics

A recent review of five separate studies found an average asthma reduction of 38.5% in buildings with improved air-quality.