

# ArmstrongFlooring™

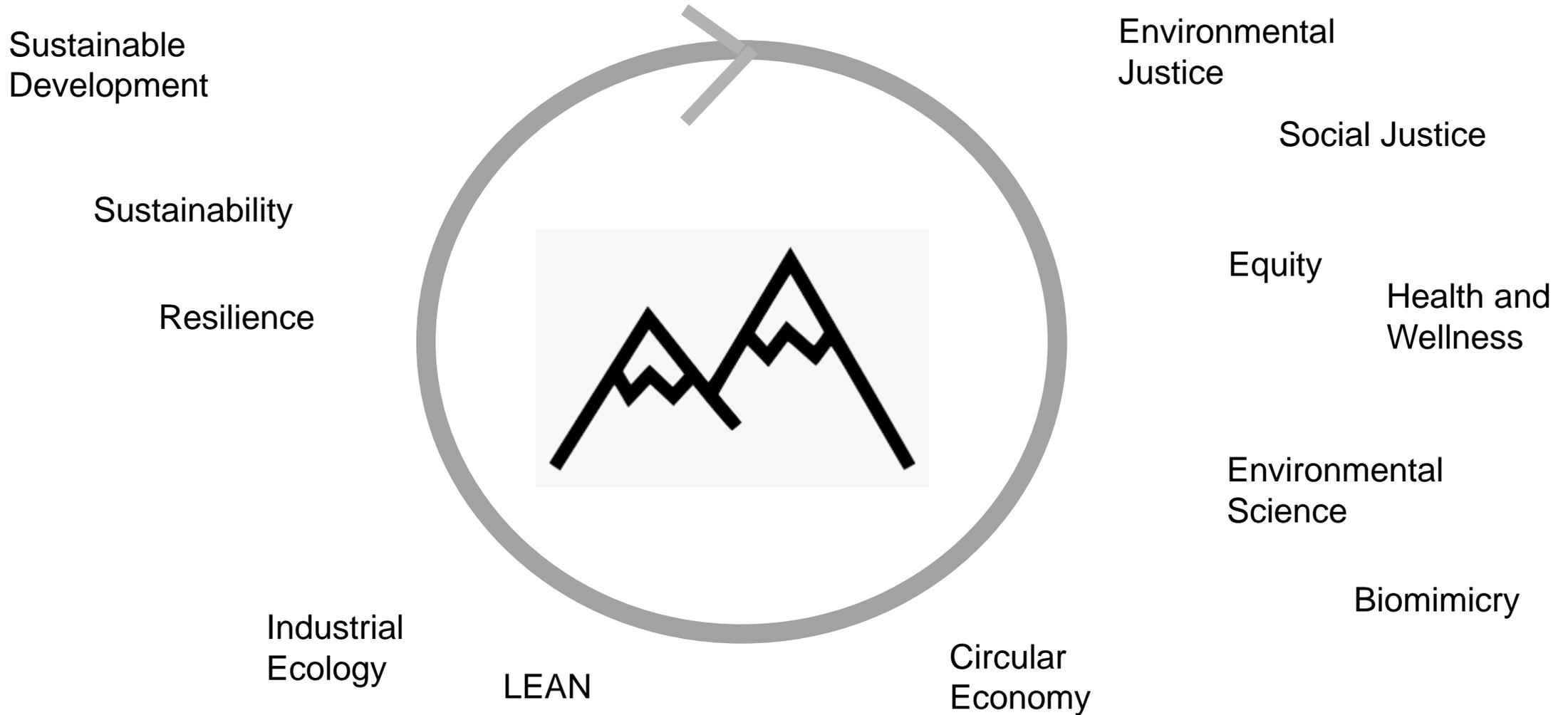
Strengthening Resilience Through Inter-disciplinary, Multi-generational Collaboration



# Strengthening Resilience Through Inter-disciplinary, Multi-generational Collaboration

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# Recycled Ideas



# Challenge

Seek out someone with whom you would not normally interact





# What is resilience?

Resilience is the act of rebounding or springing back

~Oxford Dictionary

# Resilience Responses

Reactive (adapt)  
flexibility



“It’s not the strongest of the species that survive, nor the most intelligent, but the most responsive to change.”

Charles Darwin

Proactive (plan)  
change

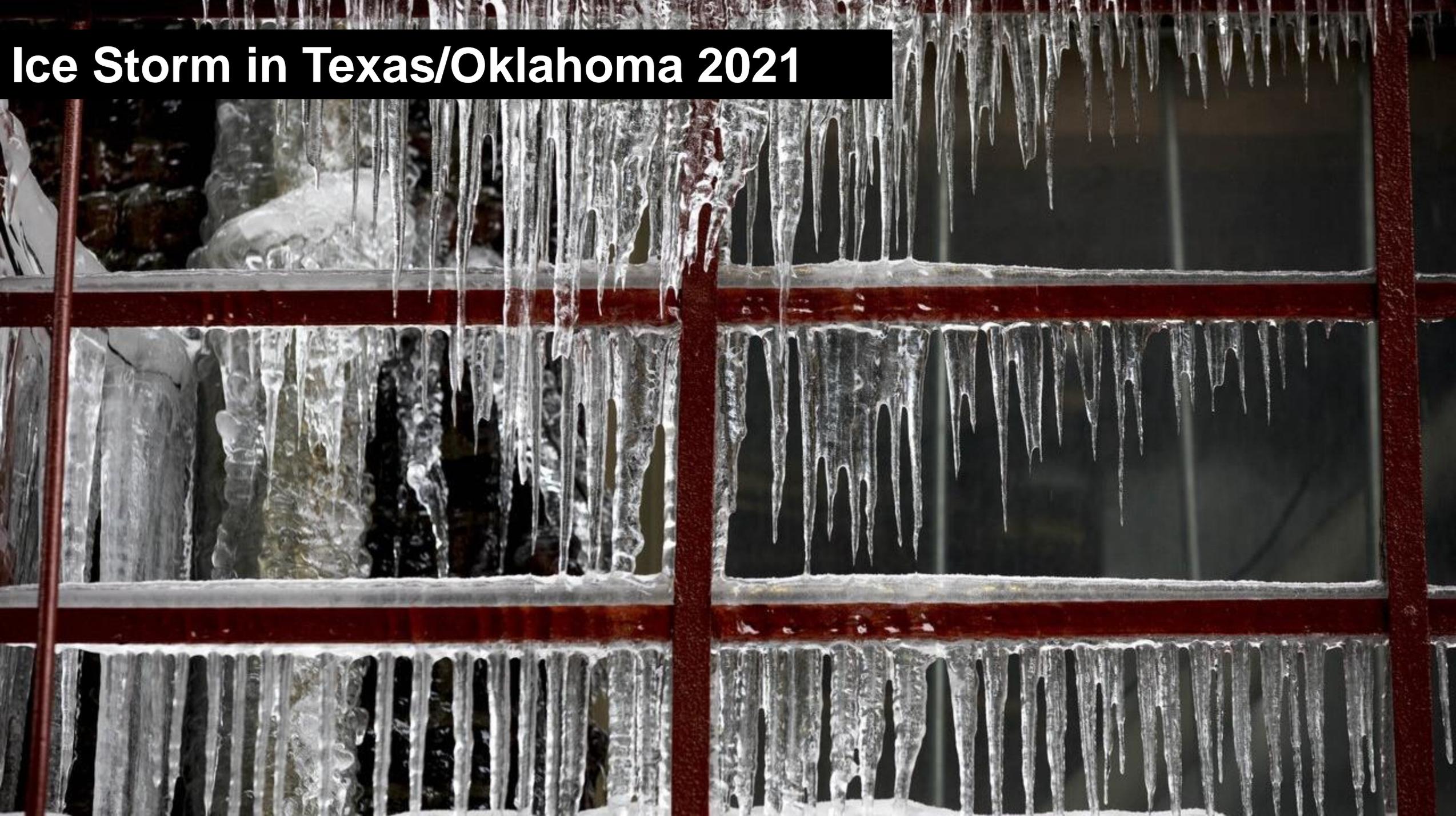


Hudson Passive House  
Dennis Wedlick Architects



Kendeda Building  
Lord Aeck Sargent

# Ice Storm in Texas/Oklahoma 2021



# Fires West Coast 2021



# Flash Flooding in TN 2021

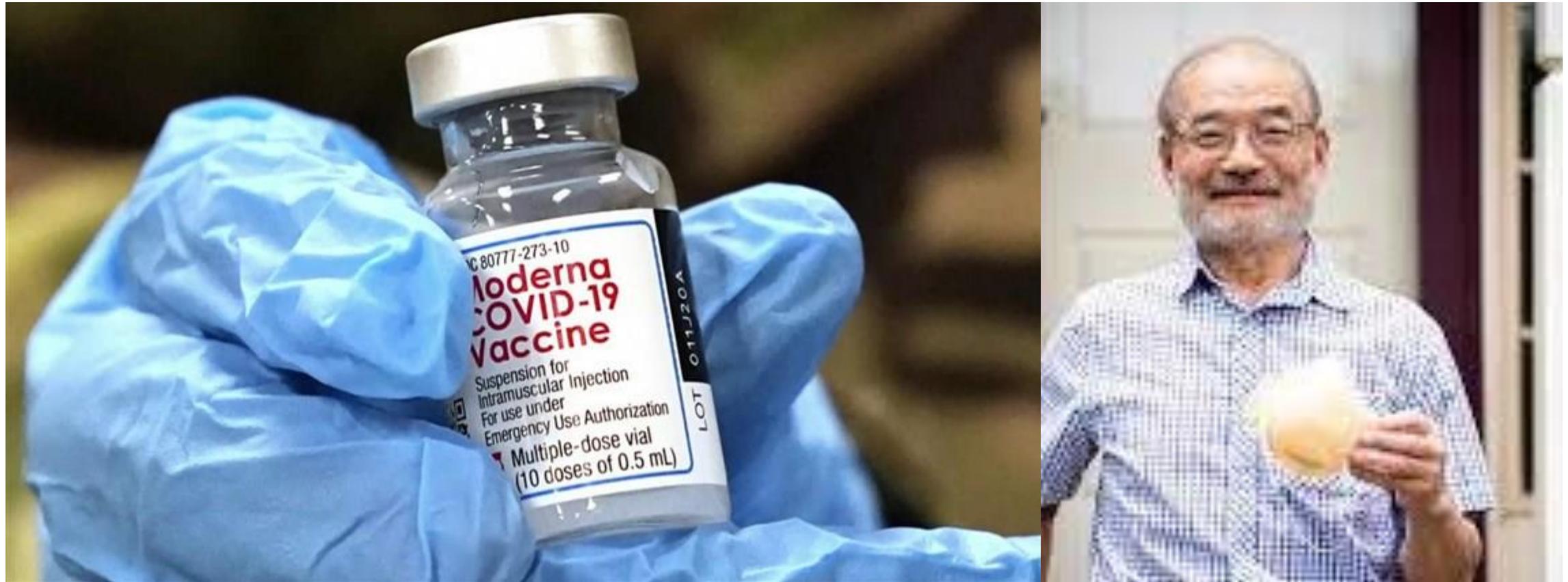


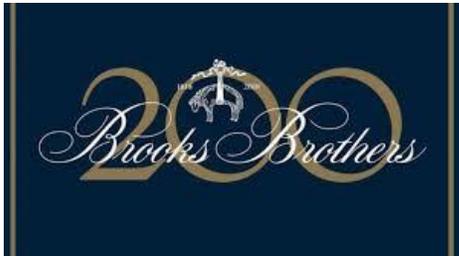
# Proactive Resilience



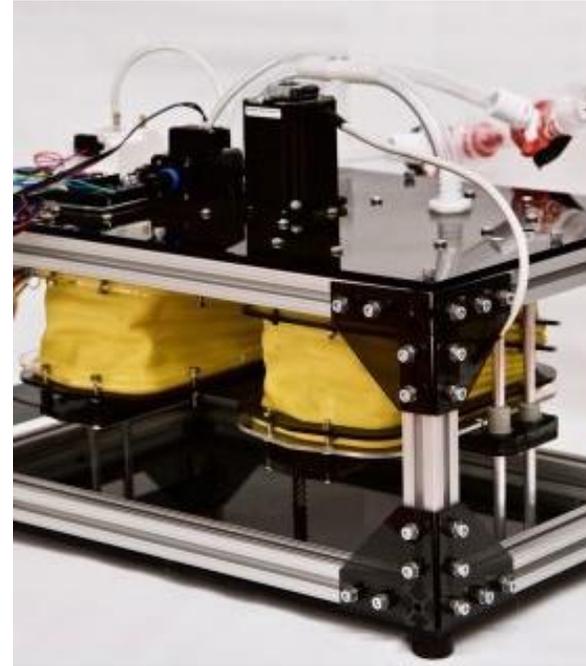
1. Discover and assess
2. Strategize, plan, and prioritize
3. Respond and execute
4. Control, adapt, and recover

# Reactive Resilience





# Interdisciplinary Solutions - Univ. Conn.



# Challenge

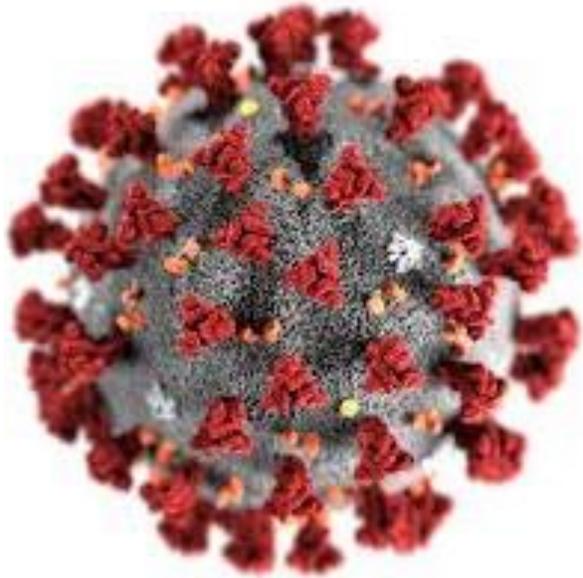
Consider attending a session outside of your area





# Transportation

# Resilience Protects/Provides



COVID/  
Healthy Spaces



Climate Change/  
Decarbonization



Natural Disasters/  
Resource Conservation



Extreme Weather/  
Safety



# Building Resilience

## Conserve Resources

## Leverage Nature

- Rainwater
- Daylight
- Ventilation
- Shade
- Diurnal temperatures

## Apply Interdisciplinary & Multi-Generational Knowledge



# Rainwater



University of Kentucky

Collect rainwater to irrigate landscape



Dockside Green, Victoria, BC

Collect stormwater and treat sewage on-site. Re-used for flushing toilets, landscape irrigation, and water features



Rainwater Cistern - Rome

**Rainwater can displace 20-60% of today's water use\***

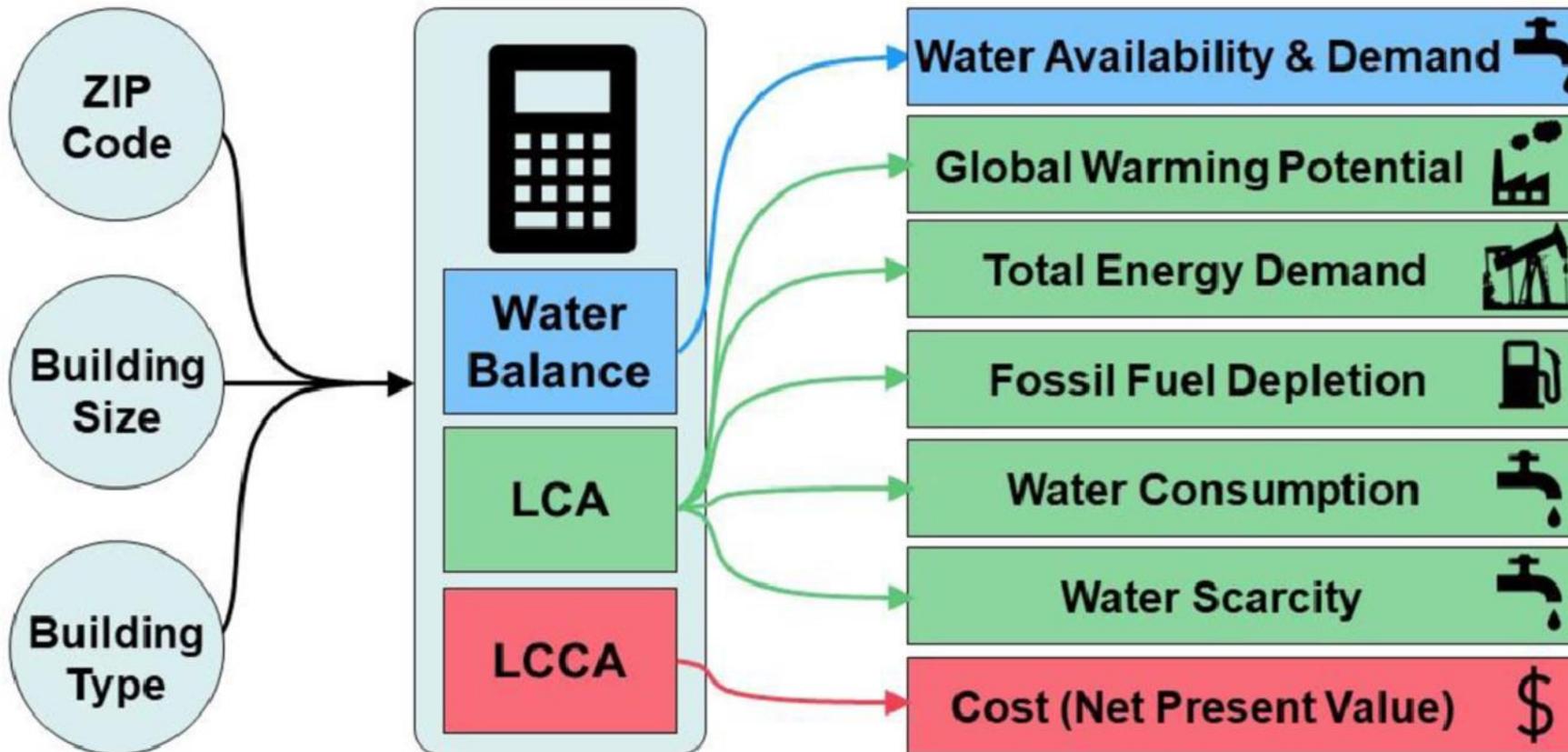
# Rainwater

“We estimate that U.S. water-related energy use is at least 521 million MWh a year— equivalent to **13%** of the nation’s electricity consumption.”

River Network, 2009

# US EPA – NEWR Calculator

## Non-potable Environmental and Economic Water Reuse Calculator





McHenry College, IL

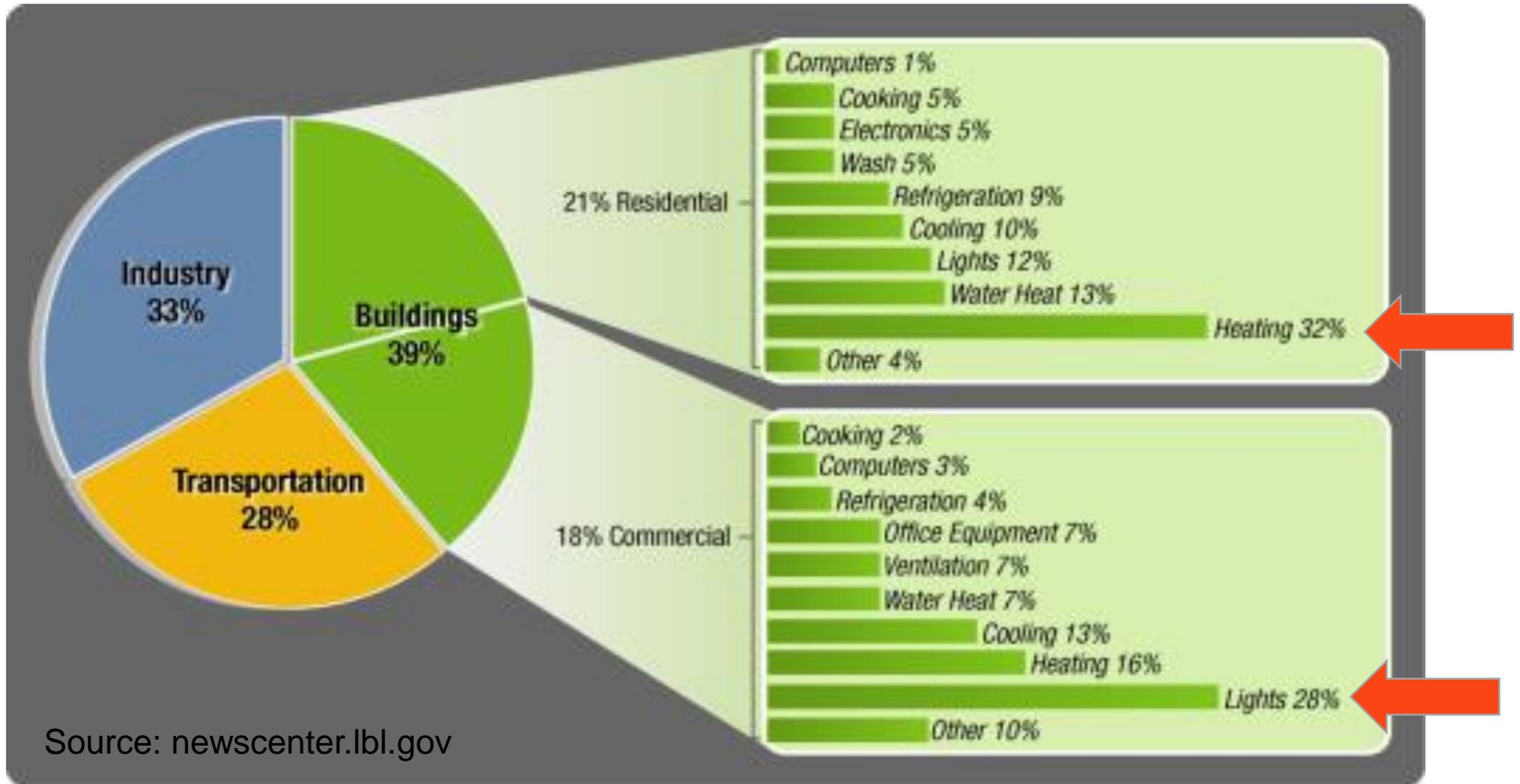
# Daylighting

Saves Energy

Disinfectant

Mood Enhancer

# Energy



TREATISE <sup>295</sup>  
<sup>100</sup>  
ON  
MILLS AND MILLWORK. //

<sup>2</sup>  
PART II. //

ON MACHINERY OF TRANSMISSION  
AND THE  
CONSTRUCTION AND ARRANGEMENT OF MILLS.

COMPRISING TREATISES ON WHEELS, SHAFTS, AND  
COUPLINGS; ENGAGING AND DISENGAGING DEVICES; AND MILL ARCHITECTURE;  
AND ON CORN, COTTON, FLAX, SILK, AND WOOLLEN SPINNING; TO WHICH IS ADDED  
A DESCRIPTION OF THE USES, PAPERS, AND POWDERS MILLS, INCLUDING A  
SHORT ACCOUNT OF THE MANUFACTURE OF IRON.

BY  
WILLIAM FAIRBAIRN, ESQ., C.E.  
L.L.D., F.R.S., F.G.S.

CORRESPONDING MEMBER OF THE REAL ACADEMY OF SCIENCES OF  
FRANCE, AND OF THE ROYAL ACADEMY OF TURIN;  
MEMBER OF THE SOCIETY OF ENGINEERS  
AND ARCHITECTS OF LONDON.

SECOND EDITION.

LONDON:  
LONGMANS, GREEN, AND CO.

1865 //

The right of translation is reserved.



1827 – Industrial  
Revolution



Declined due to  
artificial light



Increase in fossil fuel  
prices; limited supply

# Saw Tooth Roof

- Natural Daylight
- Passive heating and cooling
- High Ceilings

# Daylighting



Pantheon Oculus



Ministry of Defense, UK  
AHR Architects



Lancaster, PA  
Greenfield Architects



# Daylighting

Harrisburg, North Carolina

Architect: YCH Architects

# Daylight - Biophilia

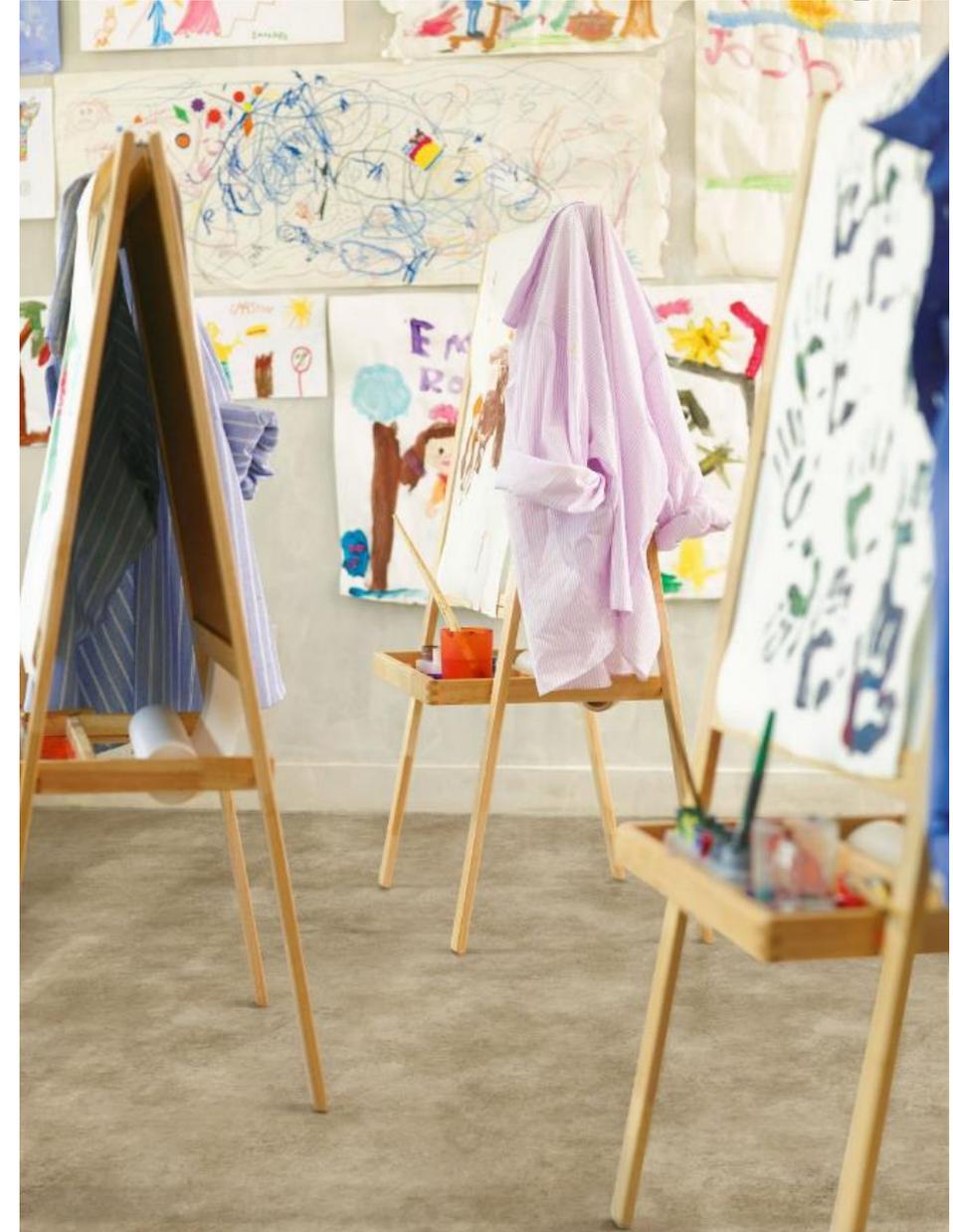
## Impacts vision, performance & health

Increased exposure to light reduces risk and slows development of near-sightedness (Kocak & Sherwin, 2015, Ramamurky, 2015)

Lower levels of light indoors combined with less time outdoors increases myopia risk. (Kocak & Sherwin, 2015)

Students with focused light show higher increase in oral proficiency (Mott et al., 2012)

Evidence that a higher daily light exposure has beneficial effects on emotions and thus improved quality of life in a severely demented patient group (Schmieder et al., 2017)



# Shade



McDonalds, Disney World  
Tozer Design



Mohawk College  
Largest net zero Building in Canada



Franklin Marshall College  
Visual Art Center  
Steven Holl Architects

Shade can displace 20-40% of cooling

# Ventilation



Dessert Rainhouse, Bend, OR



Lancaster, PA



Marvin Tilt & Turn Windows



# Traffic Circles

- Reduce congestion
- Improve air quality

# Resilience Plan



<https://www.roadbridges.com/how-develop-proactive-resiliency-framework-your-planning-programs-or-organizational-approach>

Image: HDR

# Closing



Learn from the past.  
Plan for the future.  
Enjoy the present.

**And remember...**

- Interact outside your sphere
- Seek fringe experiences



**Thank you**

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