

# Sustainable Energy Designs

IEEE  
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From Rainwater Capture to Microgrids |  
How to drive sustainability within your home

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**CANNONDESIGN**

LEED AP ID+C, BD+C

EcoDistricts AP

WELL AP

Fitwel Ambassador

RESET AP

CPHC

LFA

ActiveScore AP







## solar architecture

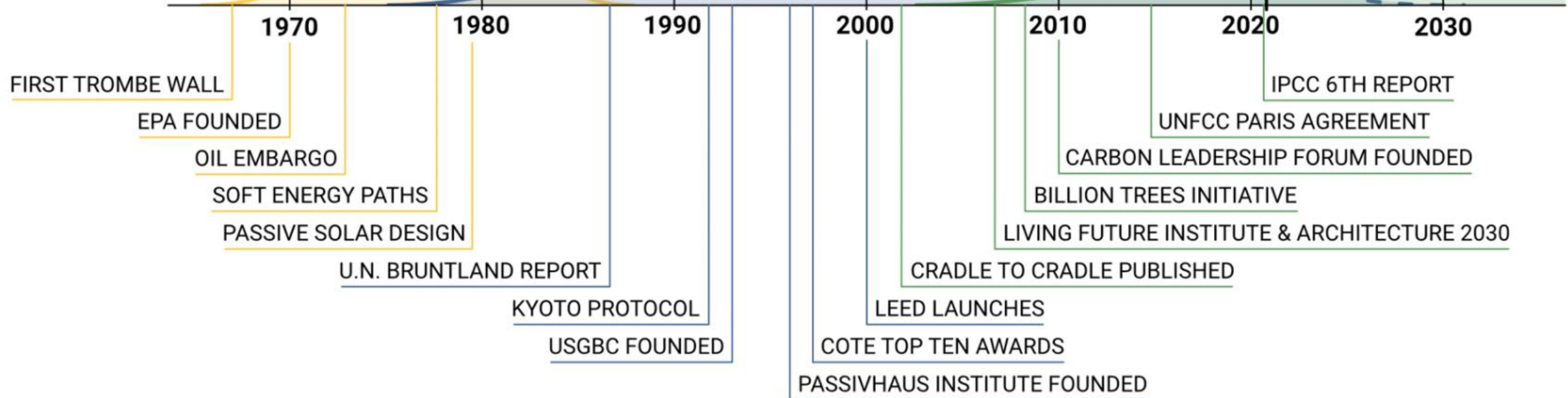
1967-1988

## sustainable design

1977-2030

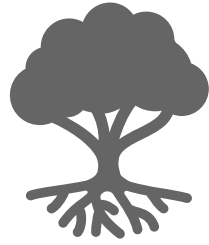
## regenerative design

2002-????





LOCATION



CLIMATE  
RESPONSIVE



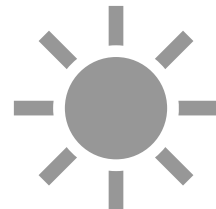
ENERGY  
EFFICIENCY  
(MAXIMIZE)



EMBODIED  
CARBON  
(MINIMIZE)



ELECTRIFY  
(EVERYTHING)



RENEWABLE  
ENERGY  
(100%)



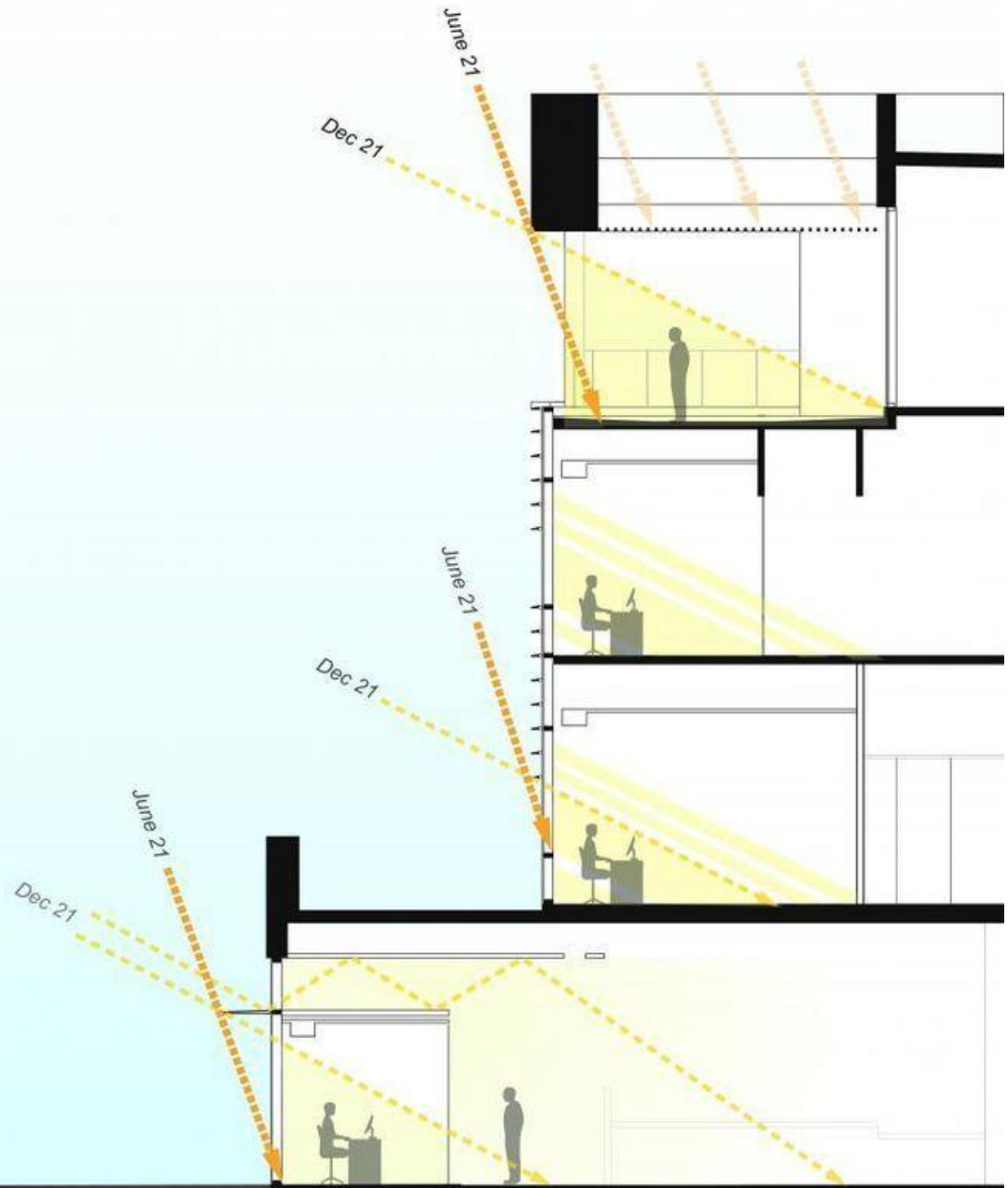
ZERO CARBON  
BUILDING











HIGH INSULATION

AIR TIGHT  
CONSTRUCTION

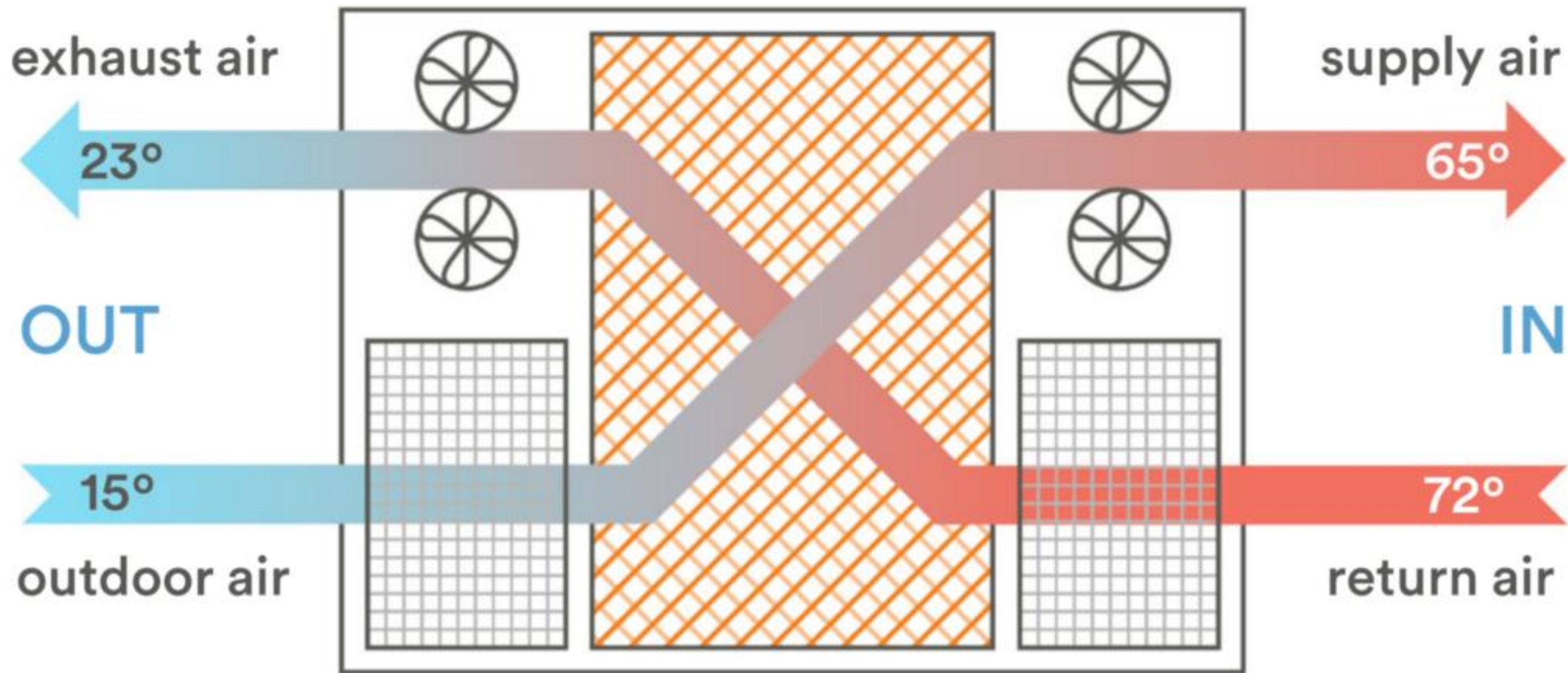
OPTIMIZED  
SOLAR  
ORIENTATION

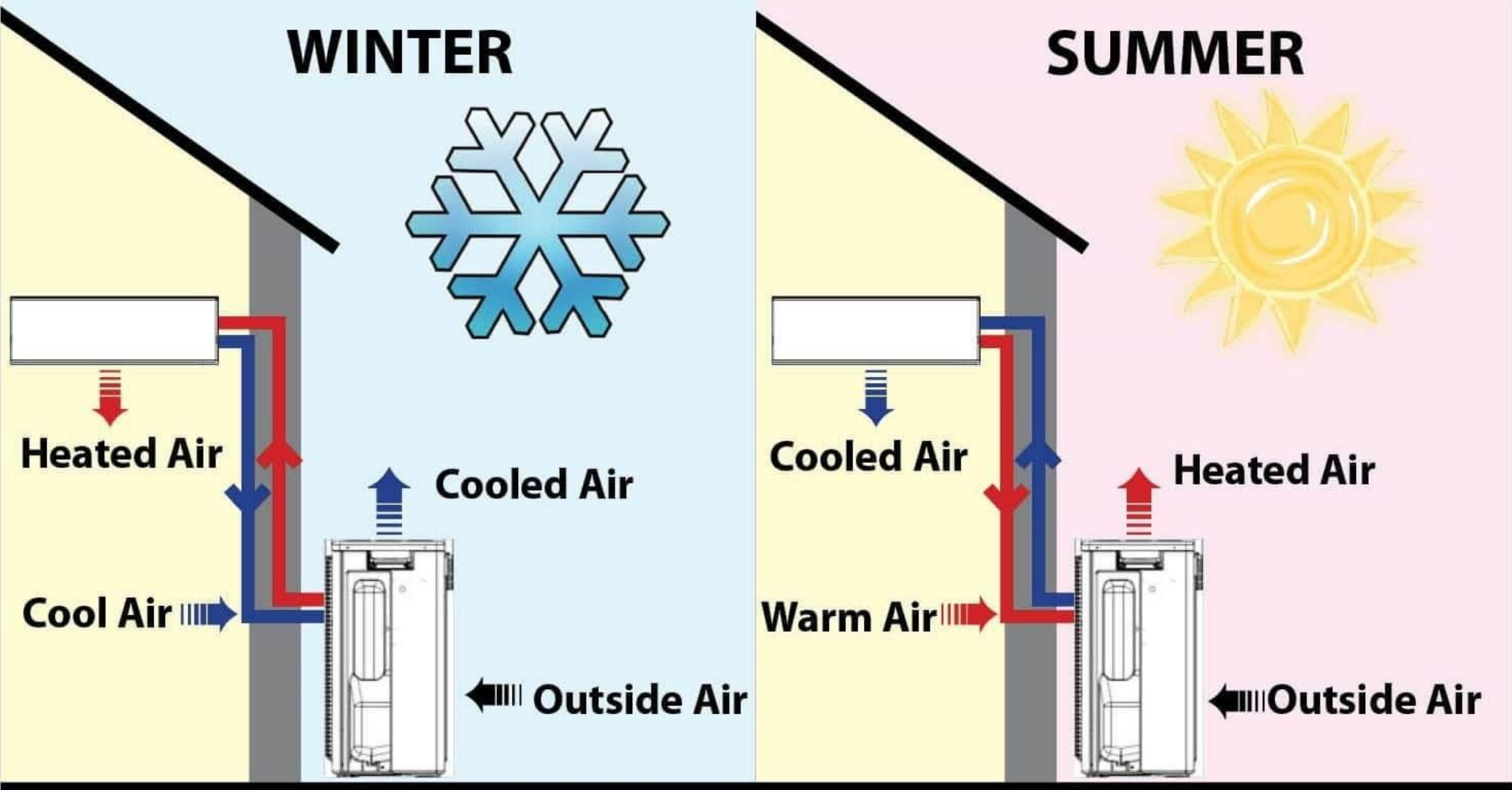
BALANCED  
VENTILATION

HIGH PERFORMANCE  
WINDOWS

© COPYRIGHT 2016 RICHARD PEDRANTI ARCHITECT



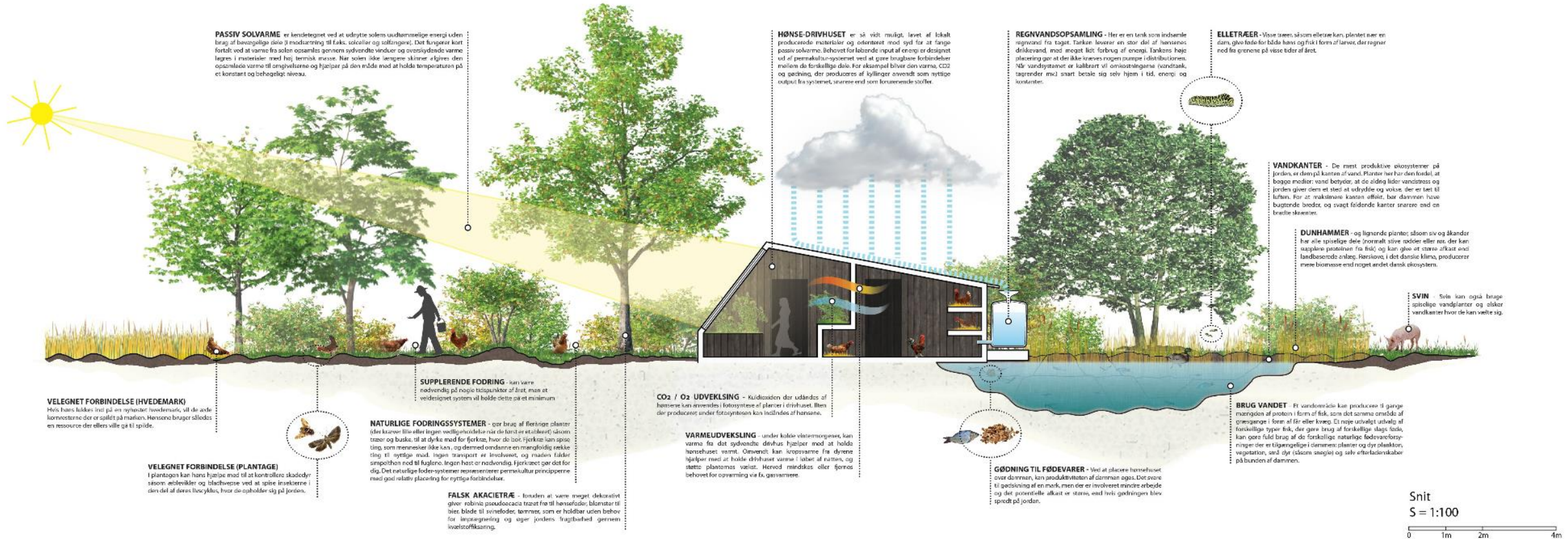






# PERMAKULTUR I PRAKSIS

URBAN ACTION™

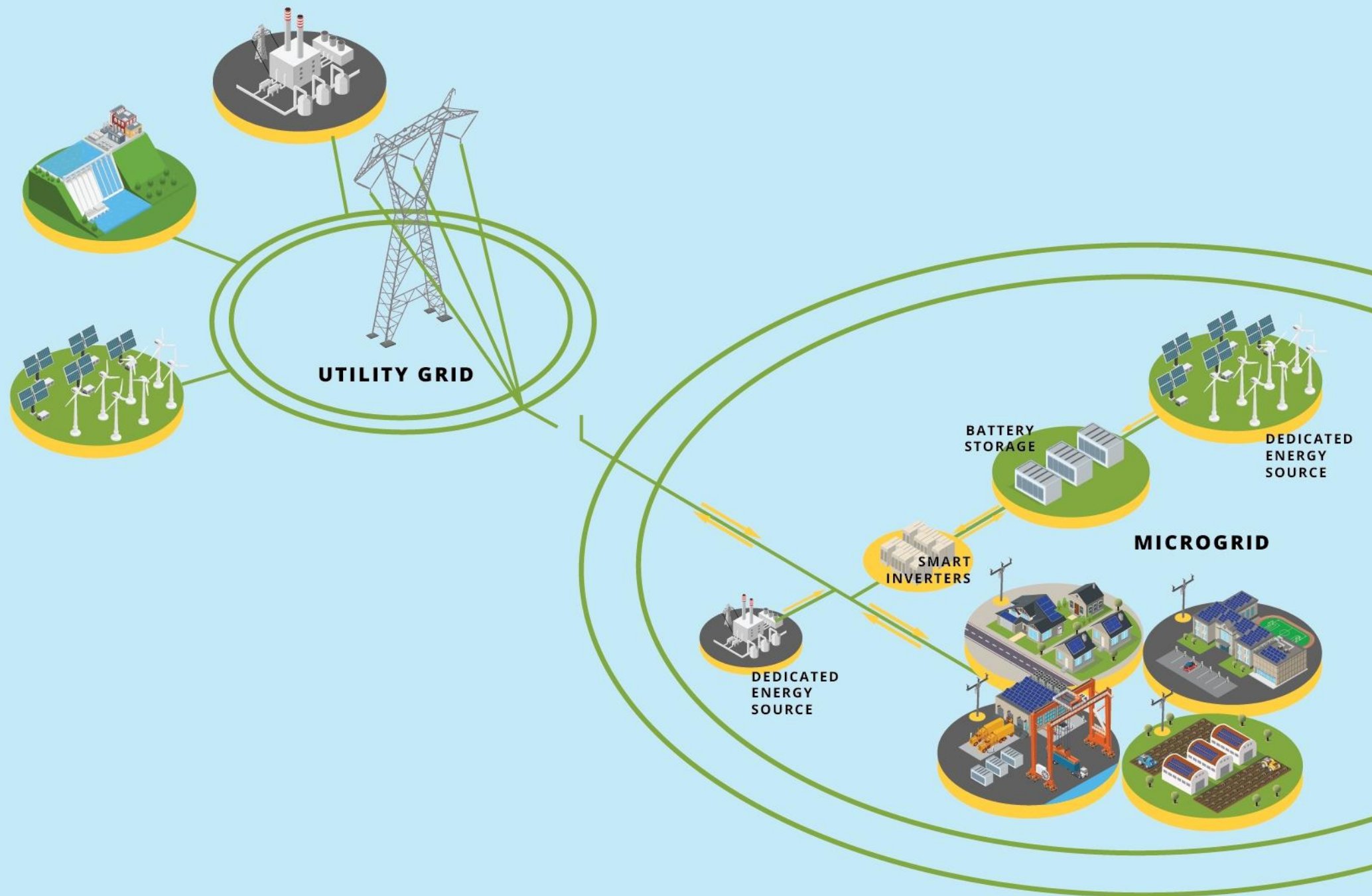


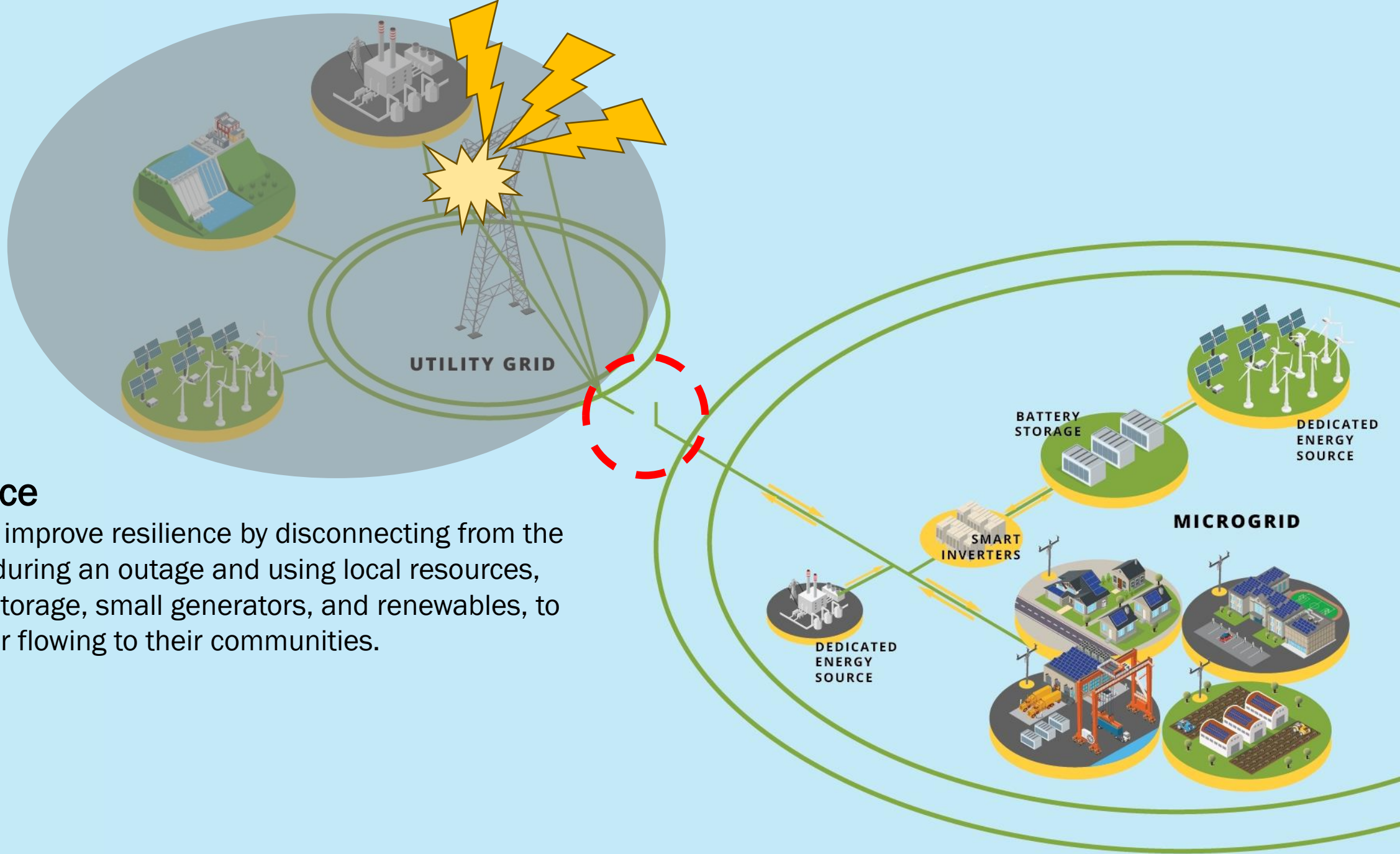
Snit  
S = 1:100  
0 1m 2m 4m





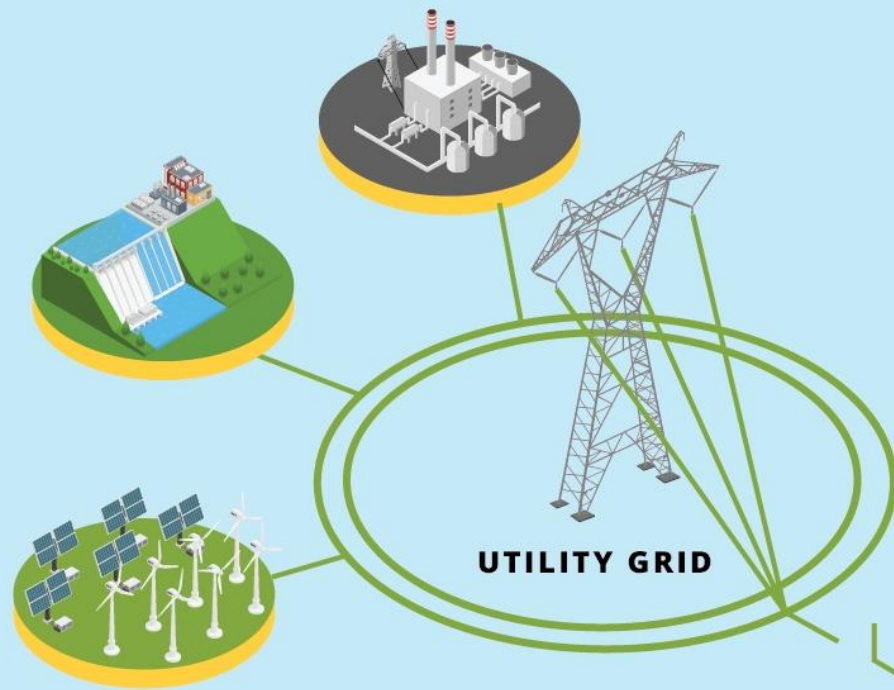






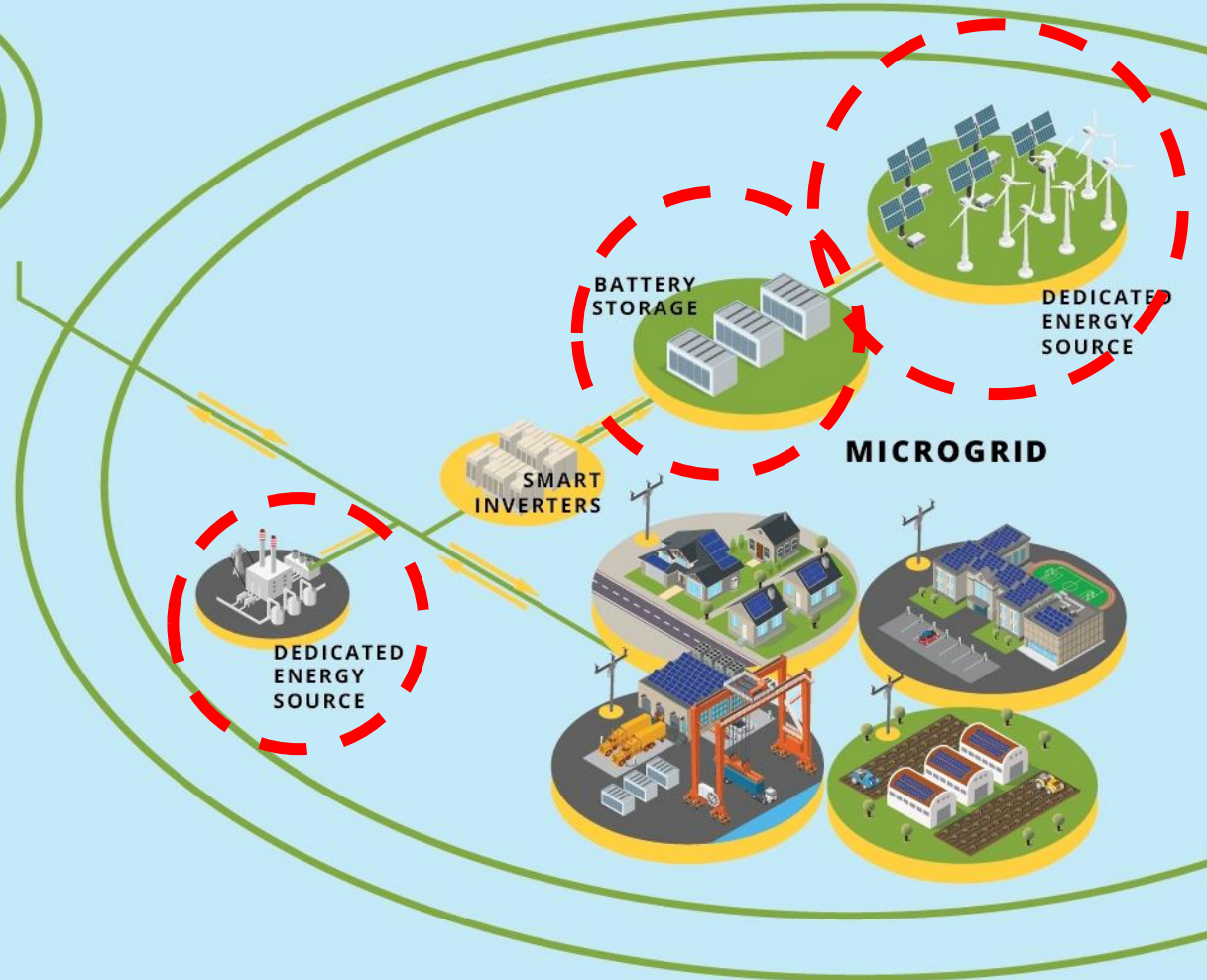
## Resilience

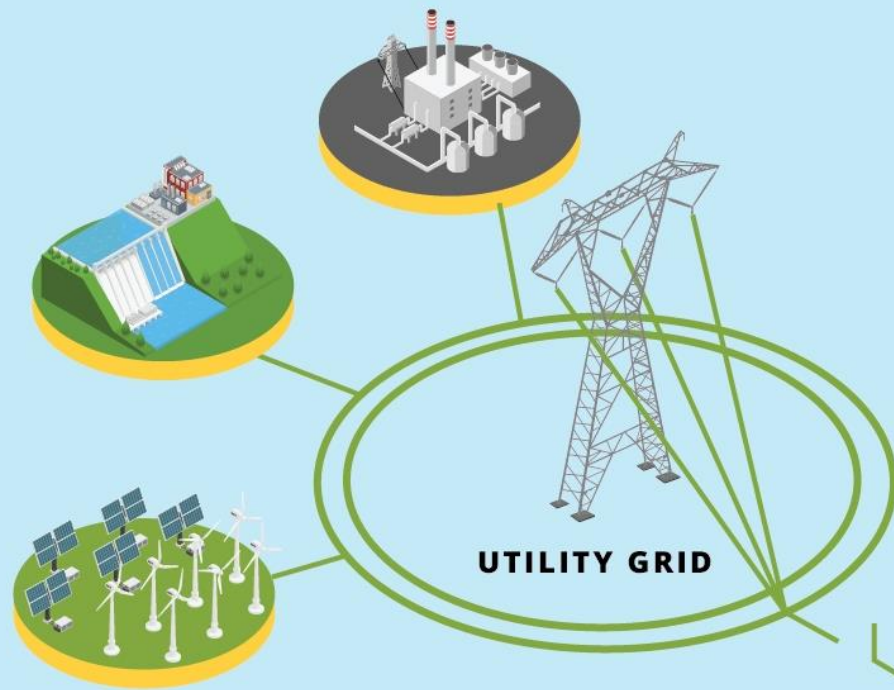
Microgrids improve resilience by disconnecting from the main grid during an outage and using local resources, including storage, small generators, and renewables, to keep power flowing to their communities.



## Integration of Renewables

Distributed energy resources, primarily renewables like solar, wind, and battery storage, are key components of a microgrid.

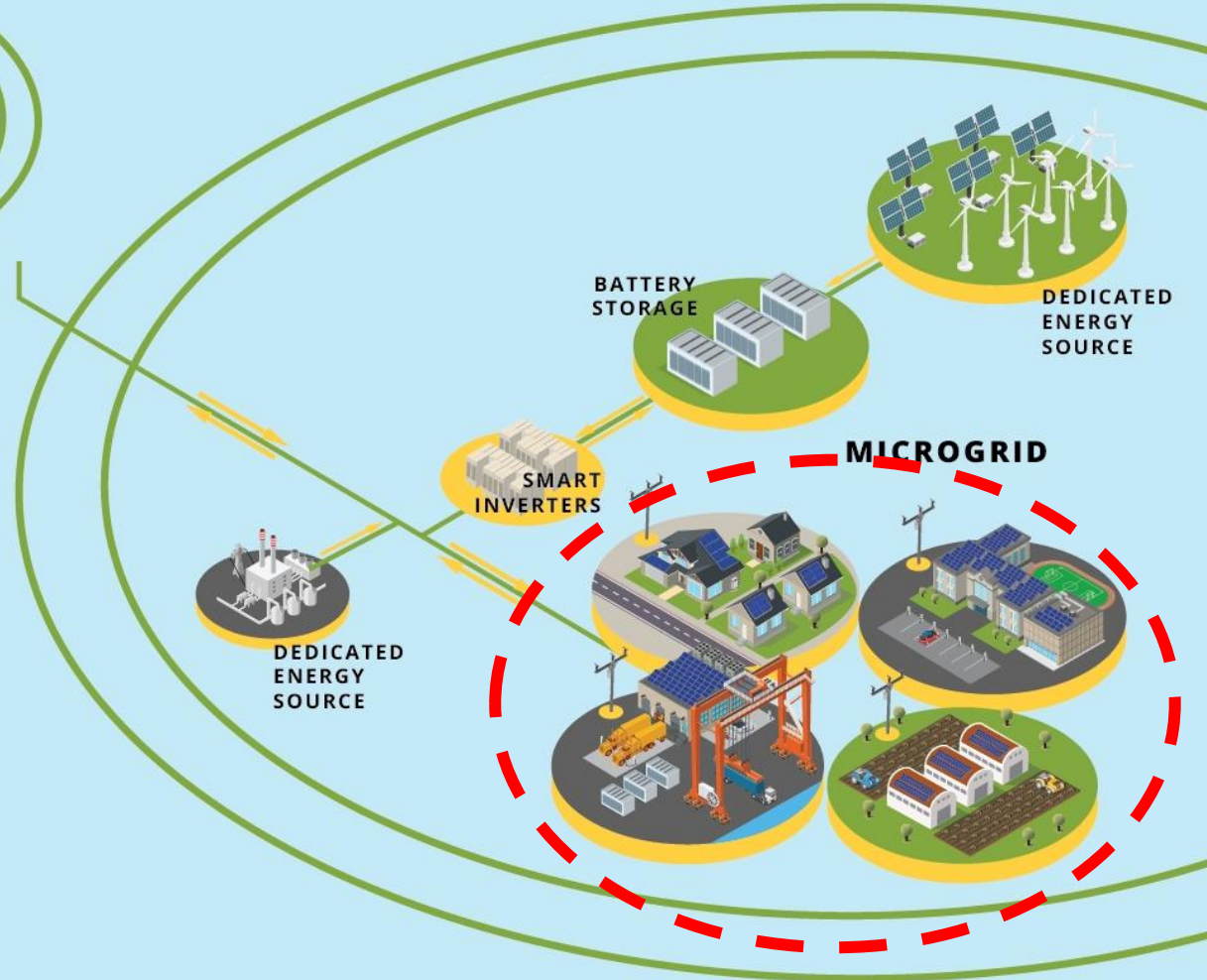




**UTILITY GRID**

## Demand Response

Microgrid technology offer co-ops additional flexibility in managing the use and cost of power on their systems.



**BATTERY STORAGE**

**DEDICATED ENERGY SOURCE**

**MICROGRID**

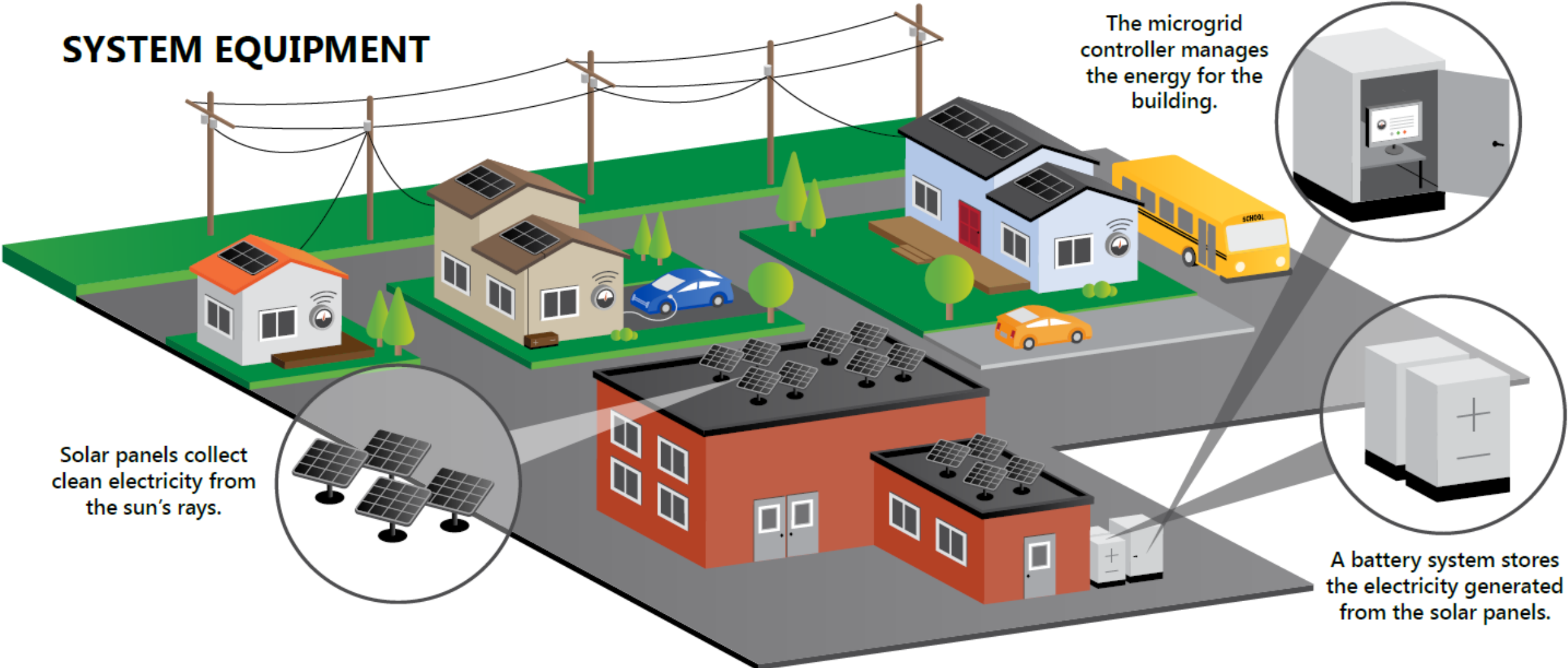
**SMART INVERTERS**

**DEDICATED ENERGY SOURCE**



# Miller Community Center - Solar Microgrid

## SYSTEM EQUIPMENT



Solar panels collect clean electricity from the sun's rays.

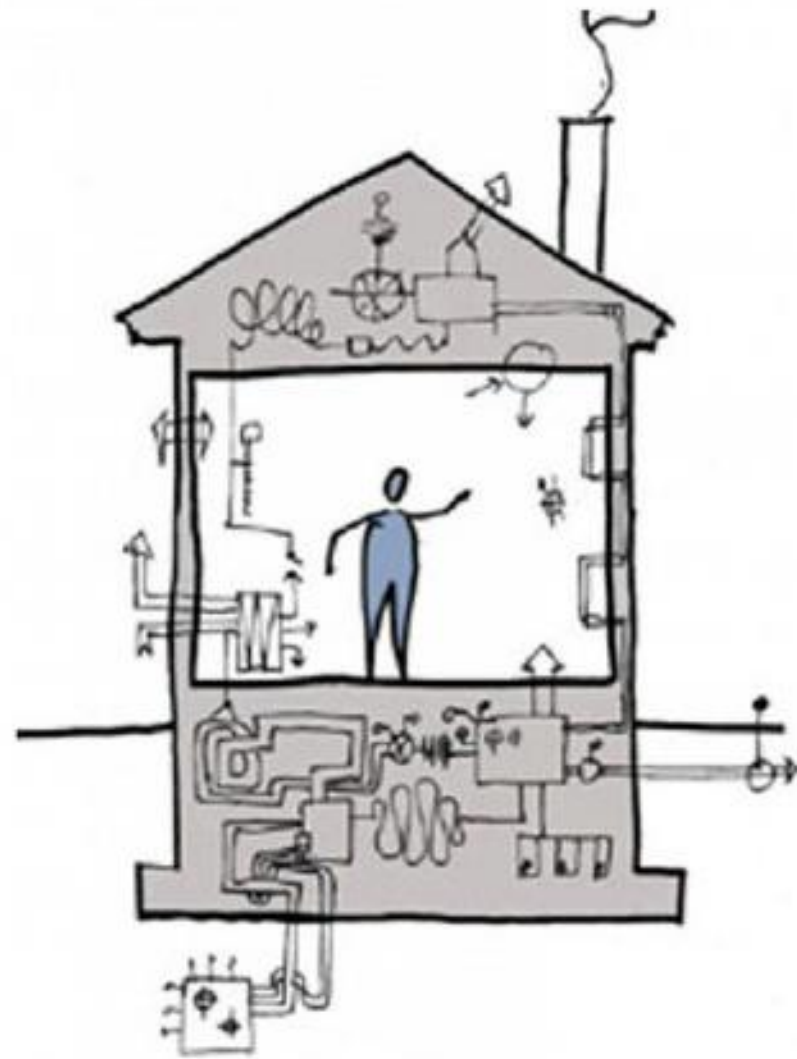
The microgrid controller manages the energy for the building.

A battery system stores the electricity generated from the solar panels.





19th Century



20th Century



21st Century



**Actions**

**You can do now...**

**START EARNING POINTS NOW**

Points are based on information reviewed and actions taken throughout the year. Top finalists will be invited to join us at the Annual Awards Ceremony.

**COMPLETE A TASK**



**FAST FASHION**

**ASK #WHOMADEMYCLOTH**

When you are buying clothes ask the brands you are interacting with: was this made in a safe environment? And was everyone in the factory paid a living wage?

**SUBMIT**

Action Points: 20pts.



**FAST FASHION**

**BUY LESS AND BETTER**

The UN consider fashion to be the second most polluting industry in the world. Buy less and buy better quality.

**UNCLAIM POINTS**

Action Points: 20pts.



**FAST FASHION**

**TAKE THE 30-WEAR PLEDGE**

Before you buy something, ask yourself: Will I wear it a minimum of 30 times? You may be surprised at how often the answer is no. But, if the answer is yes, buy it and enjoy it!

**UNCLAIM POINTS**

Action Points: 20pts.

**WATCH THE VIDEO**



**TAKE THE QUIZ**



**SMALL ACTS**

10 Knowledge Points

**TAKE QUIZ**

**GREEN YOUR LIFESTYLE**

Paper or plastic? Cage-free or pasture raised? Turf grass or prairies? Think about your everyday choices as you take Bring Your Green Challenges.



**FAIR TRADE**

Empower consumers to knowingly buy products with fair prices and ethical and environmental standards.

**EARN POINTS**



**PROMISE GARDEN**

Rewild your yard (or pockets of your yard), help restore our ecosystems and enjoy nature inspired outdoor spaces.

**EARN POINTS**



**TIME TO CHOOSE**

Where do greenhouse gases come from? What causes climate change?

**EARN POINTS**



**GIVING GARDEN**

Dedicate an entire garden, a row, patch, or raised bed to produce nutritious fruits and vegetables.

**EARN POINTS**



**SMALL ACTS**

Almost every action we take from the moment we wake up until we go to sleep requires energy. Reduce your impact, one act at a time.

**EARN POINTS**



**DETRASH**

Waste free living can save you money, improve your diet and help you avoid a myriad of toxic chemicals.

**EARN POINTS**



**FAST FASHION**

Cheaply made, overly consumed trendy pieces have harmful impacts on the environment, garment workers, animals, and wallets.

**EARN POINTS**



**RANDOM THOUGHTS**

We bring people together to turn awareness into action and action into impact. Read this and pass it along!

**EARN POINTS**

## CHALLENGES

Welcome to Bring Your Green Public Challenges! By engaging people's sense of play and competition, we seek to inform, engage and inspire students, employees and enthusiasts to consider their own individual actions for a healthy, sustainable and just world.

### COMMIT TO IT

Welcome to Small Acts Actions for Green!

Discover ways you can help by taking personal action. You can select actions you're already doing, or will start doing, now that you learned something new. Small actions taken by a large number of people makes a difference.



Level  
**KANGAROO**  
*Hopping ahead!*

Next Level in 1250 pts

**YASHA OGG** ✓  
Community: Cincinnati  
Organization: Join  
Team: Cincinnati Finer Things Club

Carbon Credits: 35,548  
*(Points from Carbon: 710)*  
Knowledge Points: 475  
Action points: 1,615  
Total points: 2,800

Share

What is this?



Woohoo!  
You have grown

**71.1**

Trees

## LEADERBOARD

Follow the progress of the Change Makers, individuals that are participating in Bring Your Green Public Challenges.

No matter where you are in your green journey, every act matters!

INDIVIDUAL TEAM COMMUNITY ORGANIZATION

Rank	Name	Level	Community	Organization	Team	Action Points	Knowledge Points	Carbon Credits	Total Points
1	Brittany Martin		Dayton	Montgomery County	Stillwater Center Rehab	2,745	460	179,077	6,785
2	Laine Windham		Dayton	Montgomery County	Stillwater Center Rehab	2,725	445	179,077	6,750
3	Adolf Meyer		Dayton	Montgomery County	Stillwater Center Rehab	2,695	485	177,258	6,720
4	Gary Kielhofner		Dayton	Montgomery County	Stillwater Center Rehab	2,635	480	179,078	6,695
5	Eric R.		Dayton	Montgomery County	Stillwater Center Rehab	2,635	475	179,078	6,690
6	Erica Ramey OTR/L		Dayton	Montgomery County	Stillwater Center Rehab	2,675	510	175,234	6,685
7	Mary Reilly		Dayton	Montgomery County	Stillwater Center Rehab	2,635	390	179,078	6,605
8	John F		Dayton	Montgomery County	Stillwater Center Rehab	2,635	475	173,997	6,580
9	Robert Bing		Dayton	Montgomery County	Stillwater Center Rehab	2,705	550	162,385	6,495
10	Elaine Ramsey		Dayton	Montgomery County	Stillwater Center Rehab	2,435	400	179,078	6,415

Show All



### RIDE MY BIKE

Transform a short trip into an exercise session; reduce your CO2 and build up your muscles. In box below, enter your mileage reduced/week

Mileage reduced / week

SUBMIT

Action Points: 30pts.  
Carbon Credits: ?cc.



### TAKE THE STAIRS

Break out of that sedentary lifestyle, burn calories and take the steps whenever you can. In box below, enter your flight of stairs taken/week

6

UNCLAIM POINTS

Action Points: 30pts.  
Carbon Credits: 1cc.



### PUBLIC TRANSPORTATION

Take a bus or subway to your destination. In box below, enter your miles reduced/week by taking public transportation

Miles reduced/week

SUBMIT

Action Points: 30pts.  
Carbon Credits: ?cc.



### TELECOMMUTE TO WORK

Save time, gas and effort and enjoy your work/life balance. In box below, enter your miles avoided/week by working from home.

205

UNCLAIM POINTS

Action Points: 30pts.  
Carbon Credits: 9497cc.



### DRY CLOTHES NATURALLY

In the summer, use a clothes line to dry clothing and reduce your laundry footprint. I will do this for:

Pick One

SUBMIT

Action Points: 30pts.  
Carbon Credits: ?cc.



# Thank you

Sustainable Energy Design

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**CANNONDESIGN**