



ENERGY SAVINGS FOR REAL ESTATE

PHASE CHANGE MATERIALS
Thermal Mass Without the Mass

EASY & FAST
NONDESTRUCTIVE
INSTALLMENT

25+ YEAR
WARRANTY WITH
2-4 YEAR
PAYBACK

PATENTED
MADE IN THE USA
SINCE 1997

PASSIVE
ENERGY
TOOL



PHASE CHANGE MATERIALS: a lightweight, inorganic, thermal massing material that keeps temperatures consistently comfortable, and meets Goldilock's standards. Occupants are not too hot, nor too cold, but just right! Easy to install and no maintenance or operation expenses. Made in the USA and shipped within 2 weeks.

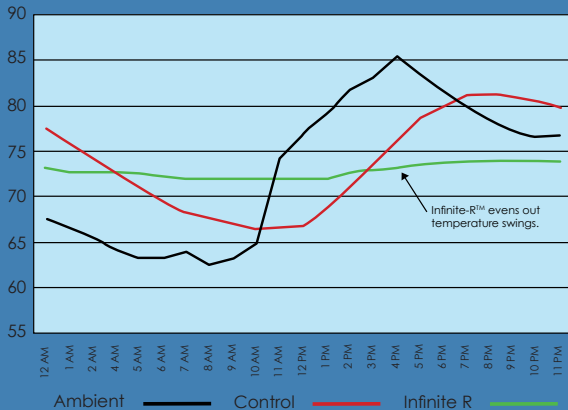
SPECIFICATIONS

- THERMAL CAPACITY** 100 BTU/sf
- PHASE CHANGE MATERIAL** mineral based/inorganic
- PHASE TEMPERATURES** 65F, 71F, 78F, 84F
- DIMENSIONS** 16in x 48in & 24in x 48in
- LATENT HEAT** 86 btu/lb.
- SPECIFIC HEAT** 1.35 btu/lb.
- THERMAL CONDUCTIVITY** ~ 0.16 W/ft/K liquid, ~ 0.33 W/ft/K solid
- THICKNESS & WEIGHT** 0.25" 1.1 lb/sf
- FLAME SPREAD** ASTM E84 | UL723 - class A - flame 5, smoke 10



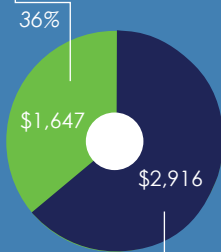
NO HVAC - Infinite-R™ vs Control Study

Side by Side Comparison



Indoor temperature affects several human responses, says the Department of Energy, including thermal comfort, perceived air quality, sick building syndrome symptoms and performance at work. Infinite-R keeps temperatures more steady so occupants work more effectively, without grievances.

Energy savings with BMS & Infinite-R



Energy used with BMS & Infinite-R

CASE STUDY U-HAUL RETAIL

REPRESENTATIVE CLIENTS & APPLICATIONS

Kiewit

U-HAUL

GROSSMONT HIGH SCHOOL
A California Distinguished School

UNIVERSITY OF WASHINGTON

- Office
- Schools/Universities
- Retail
- Laboratories
- Factories

BrightHOME ENERGY SOLUTIONS

WILLDAN ENERGY SOLUTIONS

U.S. Department of Veterans Affairs

Constellation
An Exelon Company

Escondido Union High School District

GSA

EQUAL HOUSING OPPORTUNITY

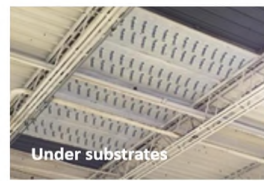
U.S. DEPARTMENT OF DEFENSE

INFINITE R PHASE CHANGE MATERIAL

PASSIVE ENERGY CREATES A COMPETITIVE ADVANTAGE

“Passive Energy Conservation from Thermal Mass Without the Mass”

Goals: Create thermally comfortable office, industrial or classrooms and assembly areas by installing Infinite R Phase Change Materials in Thermal Massing panels. Develop thermally consistent and comfortable spaces to encourage engagement, collaborations & productivity. Reduce air conditioning and winter heating costs and complaints. Sustainable; saves operating fuel and maintenance costs; reduces greenhouse gases.

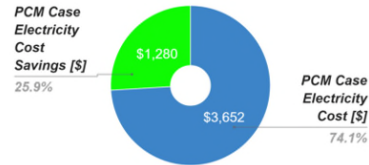


Infinite R Phase Change Materials; a light weight, inorganic thermal massing material that comes in 2' x 4' and 1/4" panels. 1.1#/sf. Soaks up 100 BTU's/ sf of energy during the day and releases it at night; Patented, ASTM 84 fire and smoke rated. Paybacks in 2-4 years/ 25 years asset Time Shift Electricity & reduce HVAC costs from time of use rates, reduce demand charges, 25 year guarantee and made in the USA Material shipped FOB site or within our patented wind vent roofing system; Self install or use our third party labor No mechanical or electric hookups, no opex

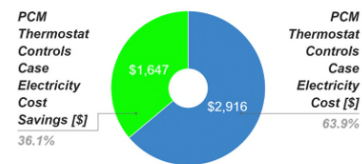
U-Haul Case Study for National Roll Out

Placed on top of ceiling tiles and used with a dynamic Building Management System that increased savings 20-40%

SAVINGS TO INVESTMENT RATIO	5.44
COST/ MATERIAL	\$3,000
20 YEAR SAVINGS PRESENT VALUE	\$16,319
20 YEAR ROI	43%
SIMPLE PAYBACK	2.3 YEARS
kWh ANNUAL SAVINGS	12,833 kWh

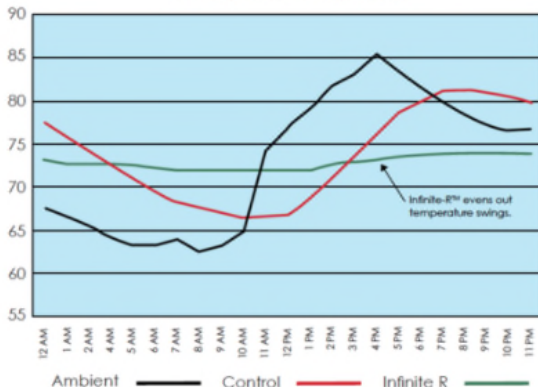


Installing Infinite-R™ with NO OTHER CHANGES to building.



Installing Infinite-R™ AND then Optimizing for controls setbacks & off-peak energy storage.

NO HVAC - Infinite-R™ vs Control Study
Side by Side Comparison



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Users; VA, DOD, University of Washington, Chase Bank, HUD, GSA, California school districts, U-Haul, Johnson Controls, CBRE Global, Kiewitt Construction, Constellation Energy, Wildan Energy

INFINITE R PHASE CHANGE MATERIAL

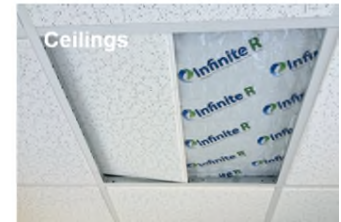
THERMAL COMFORT for A COMPETITIVE ADVANTAGE

“EFFECTIVE, RELIABLE, SAFE Passive Energy Applications”

When an unconditioned industrial space or school doesn't want to purchase air conditioning and hot days come, options exist. Send the employees, students and teachers home, endure the heat or mitigate environments to create a better place to work and learn. Thermal upgrades include LED lights, fans, window shading, air changes and our Infinite R phase change materials.



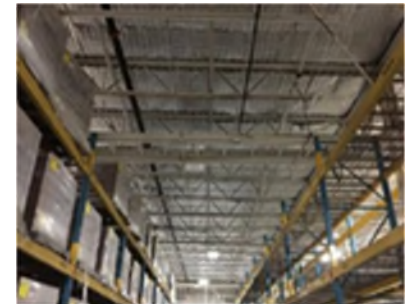
Just put Infinite R in the ceiling.
Easy to install with staff



Escondido Union High School District, California purchased 2000 + SF of Infinite R for several problematically hot classrooms. Afterwards, Mark Cavassa, Energy Manager, reported that temperatures went from 85° degrees+ to the 75°-77 °degree state. Happy users and no complaints.

CASE STUDY Midwest, Unconditioned Industrial Space

TIME	OUTSIDE TEMP	2015 No PCM	2015 With PCM
0:00	81	87.3	78
1:00	75.9	75.9	78
2:00	75.9	75.9	78
3:00	75.9	75.9	78
4:00	75	75	78
5:00	75	75	78
6:00	75.9	75.9	78
7:00	78	78	78
8:00	80.1	85	78
9:00	82.9	90.8	78
10:00	84.9	94.1	78
11:00	87	97.3	79
12:00	89	99.1	81
13:00	90	101.3	82
14:00	91.9	103.9	84
15:00	93	105.3	85
16:00	93	104.6	85
17:00	93	106.7	85
18:00	93	106.7	85
19:00	91	104.2	83
20:00	87.1	97.3	79
21:00	84.9	94.1	78
22:00	84.9	92.1	78
23:00	82	88.6	78



This client had 200,000 sf of unconditioned factory space. After placing Infinite R PCM in the ceiling, with a 78° transition point, they experienced the following temperature levels. Production increased by 38%. They got the investment back in a few weeks. Plus, union membership quit filing grievances.



Inside and outside temperatures

We recommend Infinite R in the roof substrate or above classroom ceilings for thermal comfort.

For more information and pricing contact:
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941.376.8484 / info@eco-smart.com