

Better Buildings Webinar Series

We'll be starting in just a few minutes....

Tell us...

What topics are you interested in for future webinars?




Please send your response to the webinar organizers via the question box.



Better Buildings, Better Bodies: Strategies for Health & Wellness

March 5, 2019
3:00 – 4:00 PM EST

Today's Presenters

Name		Organization
Beth Hawkins		Three3
Sara Neff		Kilroy Realty
Megan O'Neil		City of Atlanta, GA

Beth Hawkins

Three3

PRELIMINARY RESULTS: HEALTH-RELATED NON- ENERGY IMPACTS OF WEATHERIZING AFFORDABLE MULTIFAMILY HOUSING

Beth Hawkins
ThreeCubed, Inc.



ACKNOWLEDGEMENTS

Sponsors

- The JPB Foundation & Utility Program Administrators in Massachusetts

Key Team Members

- Three³ – Beth Hawkins, Bruce Tonn, Erin Rose, Michaela Marincic
- Slipstream – Claire Cowan, Scott Pigg, David Vigliotta & many others
- NMR Group – Greg Clendenning, Nicole Rosenberg, Christine Smaglia & many others
- University of Tennessee, Center for Applied Research and Evaluation – Linda Daugherty, Amy Melton

Contributors

- Weatherization Agencies (e.g., CEDA, La Casa, Project Home, Racine Kenosha CAA, AEA, NMIC, SPRC, ABCD, Action Inc., RISE, CEO, 3EThermal)
- Building Owners (e.g., LUCHA, Mercy Housing, Related Midwest)
- Utilities (e.g., National Grid, Eversource)
- State Weatherization Offices (e.g., WI, VT, NH)
- Energy Efficiency For All State Leads
- Participants of Planning Workshops in NYC, Chicago and Knoxville

OUTLINE

- Research Project Overview
- Overview of Non-Energy Impacts
- Phase 1 Survey Findings*
 - Sample Characterization
 - Health Impacts
 - Budget Impacts

*Note: Results presented herein are based on preliminary analysis of Phase I results only. Please do not cite figures from this presentation in formal reports, papers or presentations.



RESEARCH PROJECT ESSENTIALS

Goals

- Estimate health related non-energy impacts (NEIs) of weatherization in affordable multifamily housing sector
- Impact policy

Hypothesis

- Single-family (SF) NEIs should not be generalized to multifamily (MF) housing

Sample

- Buildings w/ 5+ units located in: IL, MA, NYC, PA, RI, VT, and WI

Eligible buildings

- Weatherized - Comparison with Treatment (CwT)
- Pre-weatherized - Treatment (T)
- Not weatherized - Control (C)



KEY PROJECT COMPONENTS

- Resident Survey
- Monetization of Non-Energy Impacts
- Property Manager Survey
- Property Owner Interviews
- Data With a Soul



THE HUMAN STORY

Just a glimpse...

"We have to stay with other people in the winter. It's too cold to stay home."

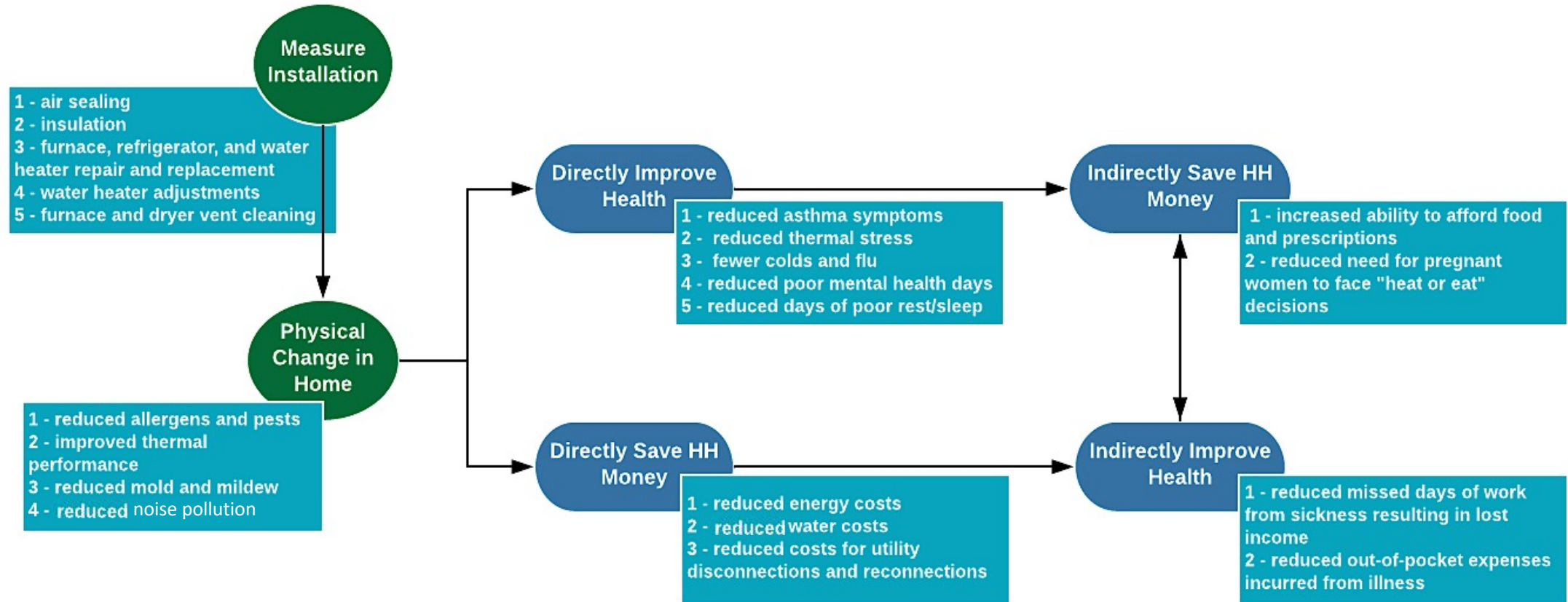
"I love good food but have to cut back on groceries in the winter to stay warm."

"My upper respiratory issues get much worse in the cold. Sometimes I cannot stop coughing and have to go to the emergency room for breathing treatments."

"Winter is murder on my arthritis. I use space heaters but I worry they are a fire hazard."

"I would [be able to afford to] do more things with my kids if I had lower energy bills."

HOW WEATHERIZATION CAN YIELD HEALTH IMPACTS



Additional Considerations:

- 1 - Households in better financial condition may be able to forego predatory loans, which further decreases financial strains.
- 2 - Improvements in health and finance may improve mental health, which may lead to further health improvements.

DEMOGRAPHICS OF RESIDENT SURVEY RESPONDENTS

	Weatherized (CwT) (N=725)	Pre-weatherized (T) (N=552)	Not weatherized (C) (N=1171)
Respondent Age (mean) ***	64	56	58
Gender (female) *	62%	59%	55%
Primary Wage Earner Employed	18%	22%	19%
Primary Wage Earner Retired ***	58%	38%	42%
Household Size (mean) ***	1.4	1.7	1.4
Single Person Household ***	77%	60%	76%
Respondent Education			
No high school diploma	10%	15%	14%
High school graduate	35%	32%	36%
Some college*	21%	18%	25%
College graduate*	23%	15%	19%
Race/Ethnicity			
Hispanic or Latino Origin ***	11%	41%	9%
White ***	60%	41%	35%
Black or African-American ***	22%	24%	53%
Asian ***	8%	1%	1%
Native Hawaiian/other Pacific Islander	0.8%	0.6%	0.6%
Other (if volunteered) ***	5%	14%	7%
Hispanic or Latino (if volunteered) ***	3%	12%	3%

* Difference is statistically significant at the p<.05 level.

** Difference is statistically significant at the p<.01 level.

*** Difference is statistically significant at the p<.001 level.

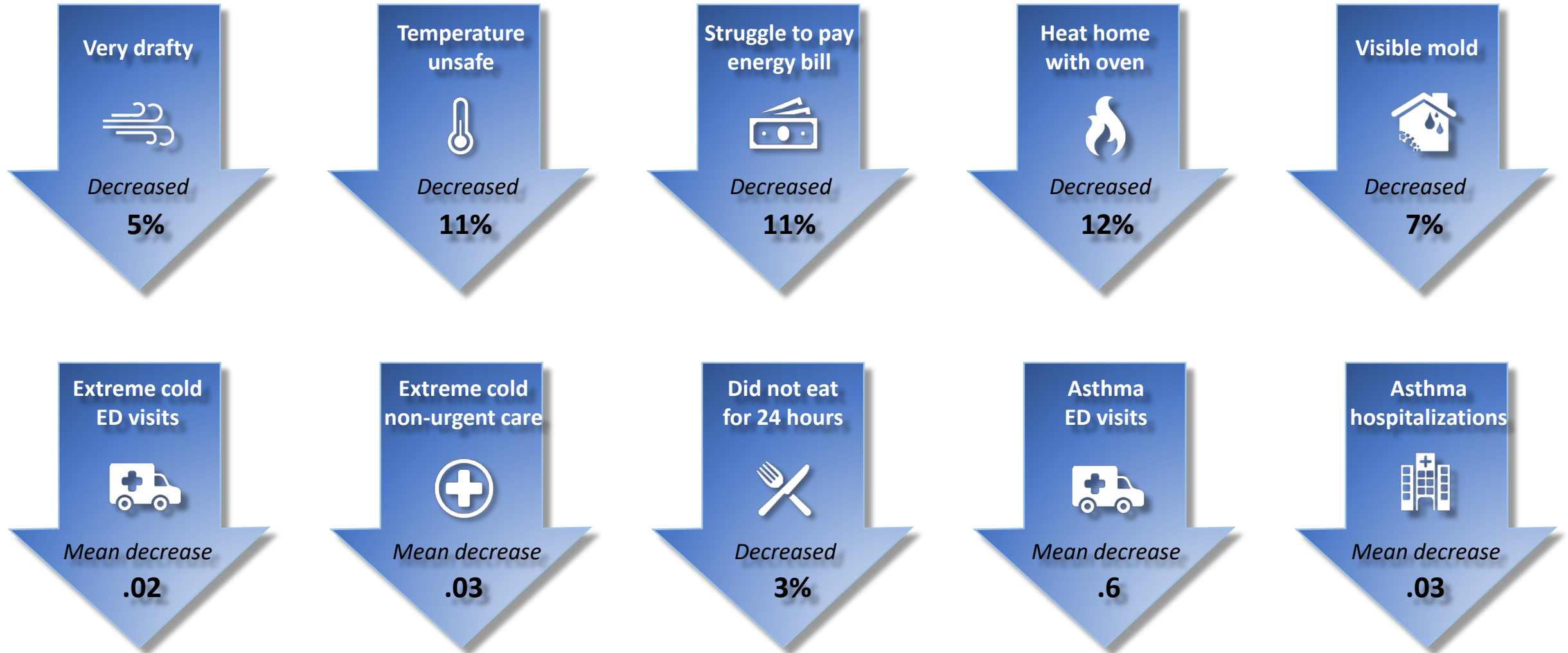
Resident Survey

HEALTH AND BUDGET RELATED NON-ENERGY IMPACTS

Phase 1 statistical results presented are comparisons between the weatherized (CwT) group and the unweatherized group (Treatment plus Control group)—utilizing a cross-sectional approach.

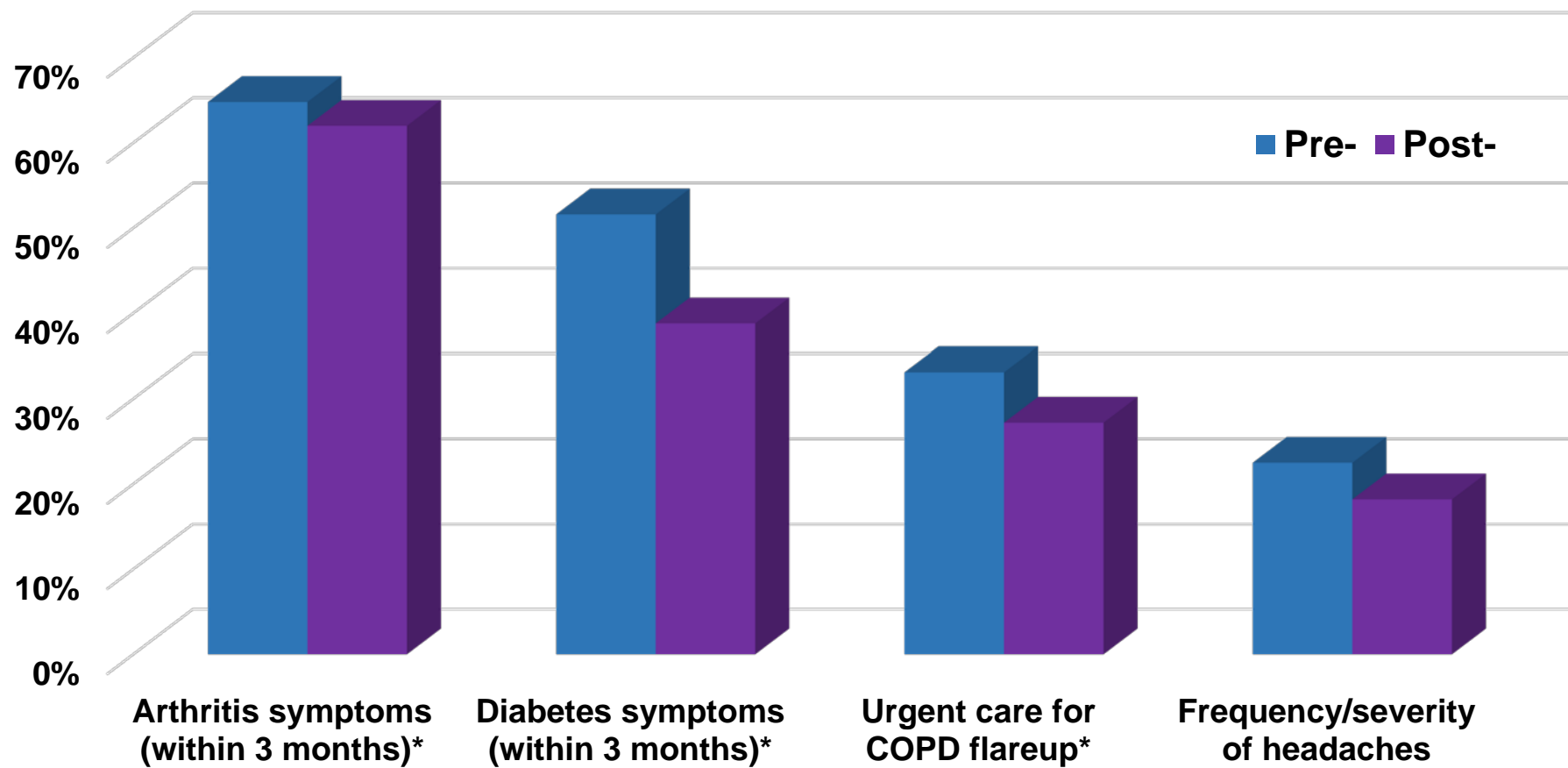


MF HEALTH AND BUDGET NEIs





EXPLORATORY MF HEALTH NEIs

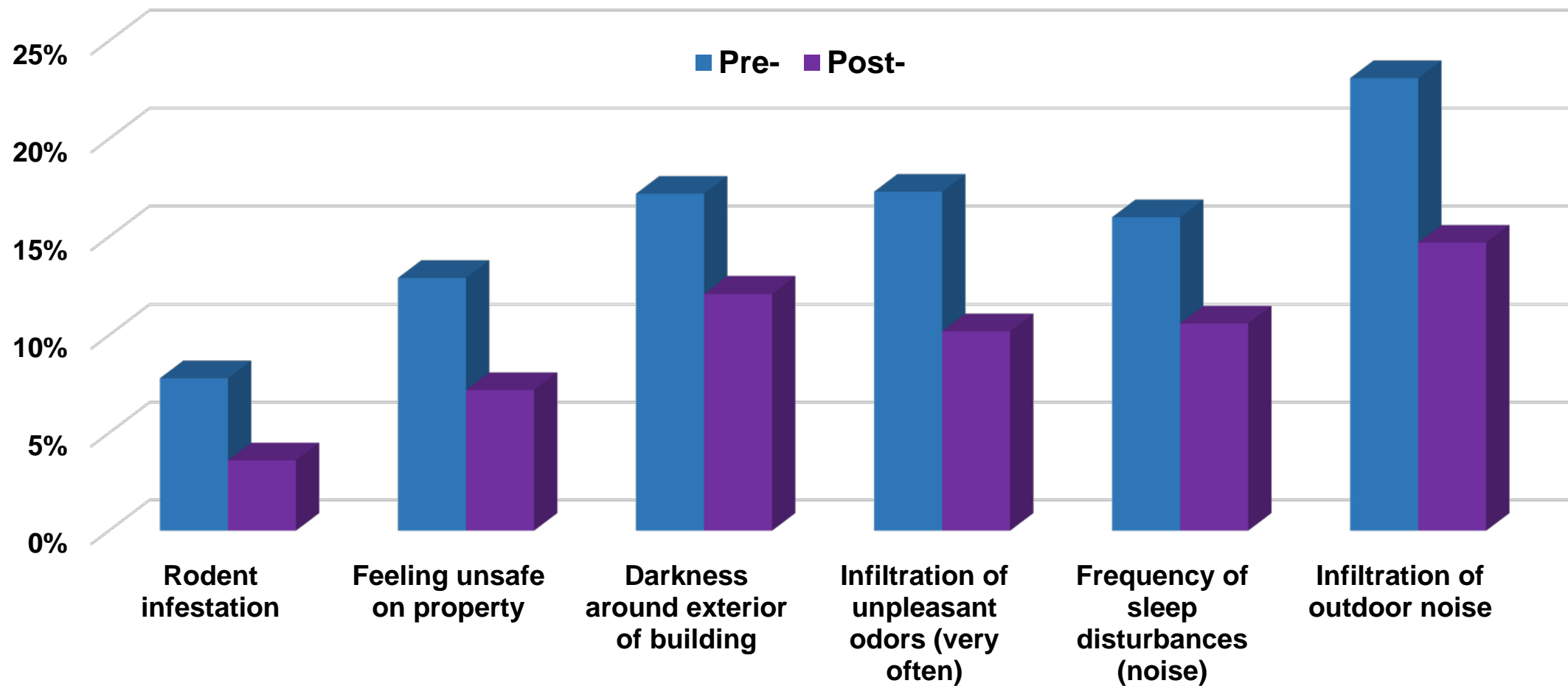


*Of those that reported yes to being diagnosed with the specific chronic condition



DWELLING QUALITY IMPROVEMENTS

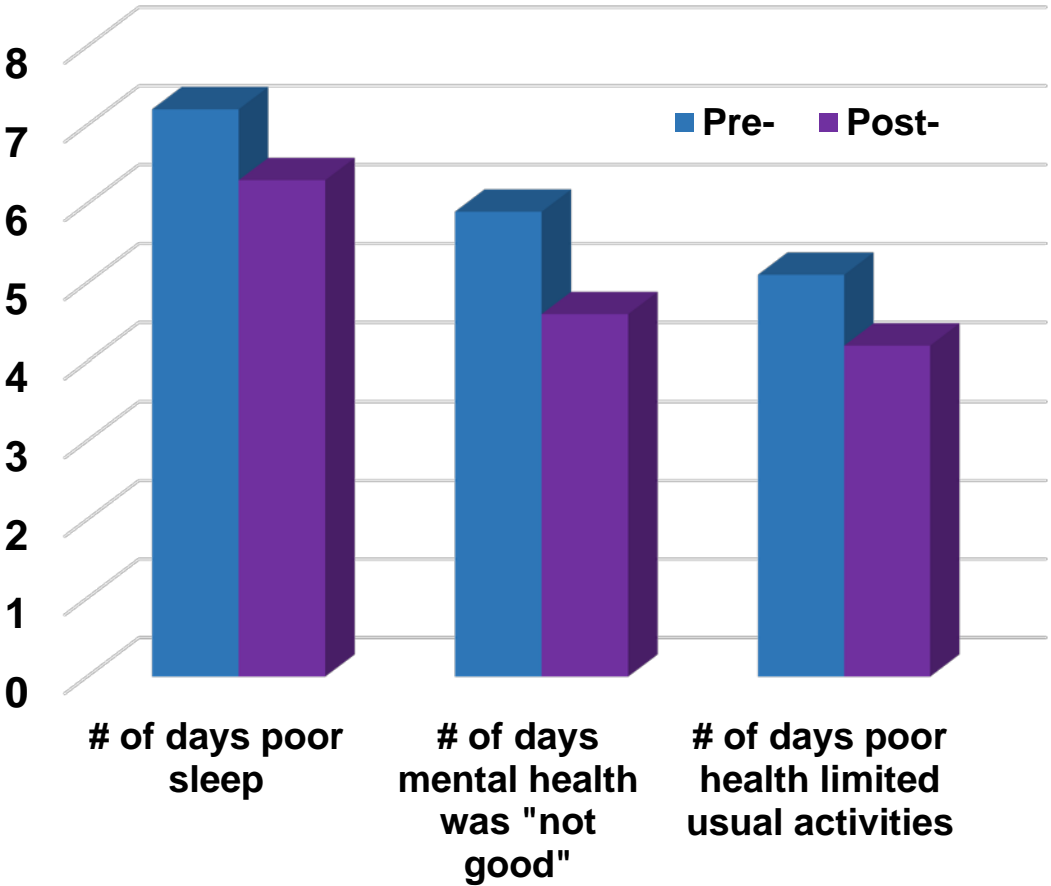
Low-income MF weatherization can also improve sense of wellbeing and quality of life.





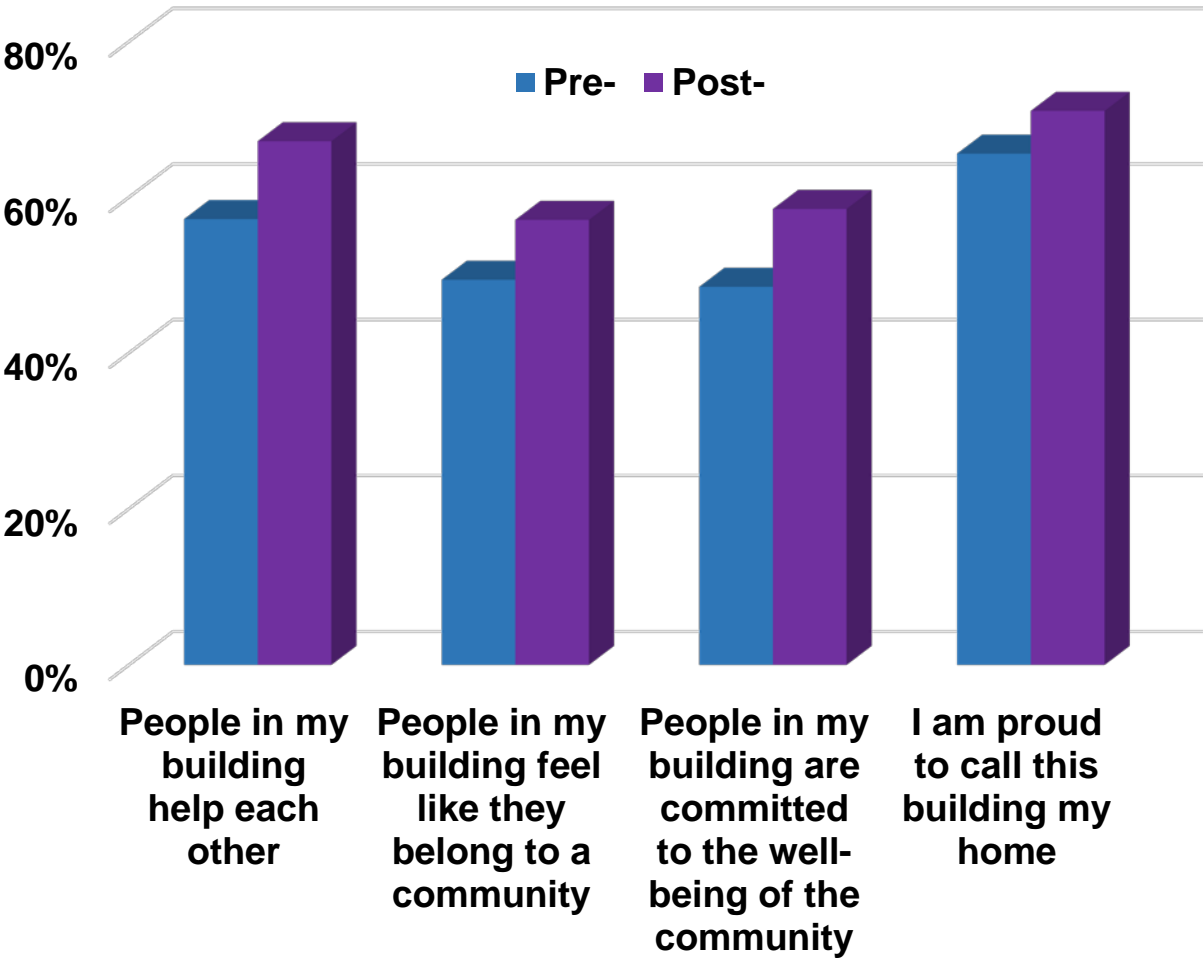
POTENTIAL WELLBEING AND QUALITY OF LIFE IMPACTS

(In the last 30 days, how many days...)*



*Mean # of days

(Agree or strongly agree that...)



CONCLUDING THOUGHTS

- Results support the general hypothesis that weatherization can improve the health and wellbeing of residents of affordable MF housing.
- SF vs MF:
 - Occupants experience same social determinants of health and wellbeing
 - BUT different building structures, systems, and weatherization packages impact health and other NEIs differently
 - Therefore, SF NEIs should not be generalized to MF housing
- MF system offers additional opportunities in such areas as social cohesion and community resilience.

THANK YOU!

Contact:

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Sara Neff

Kilroy Realty



Better Buildings and Better Bodies in Commercial Real Estate

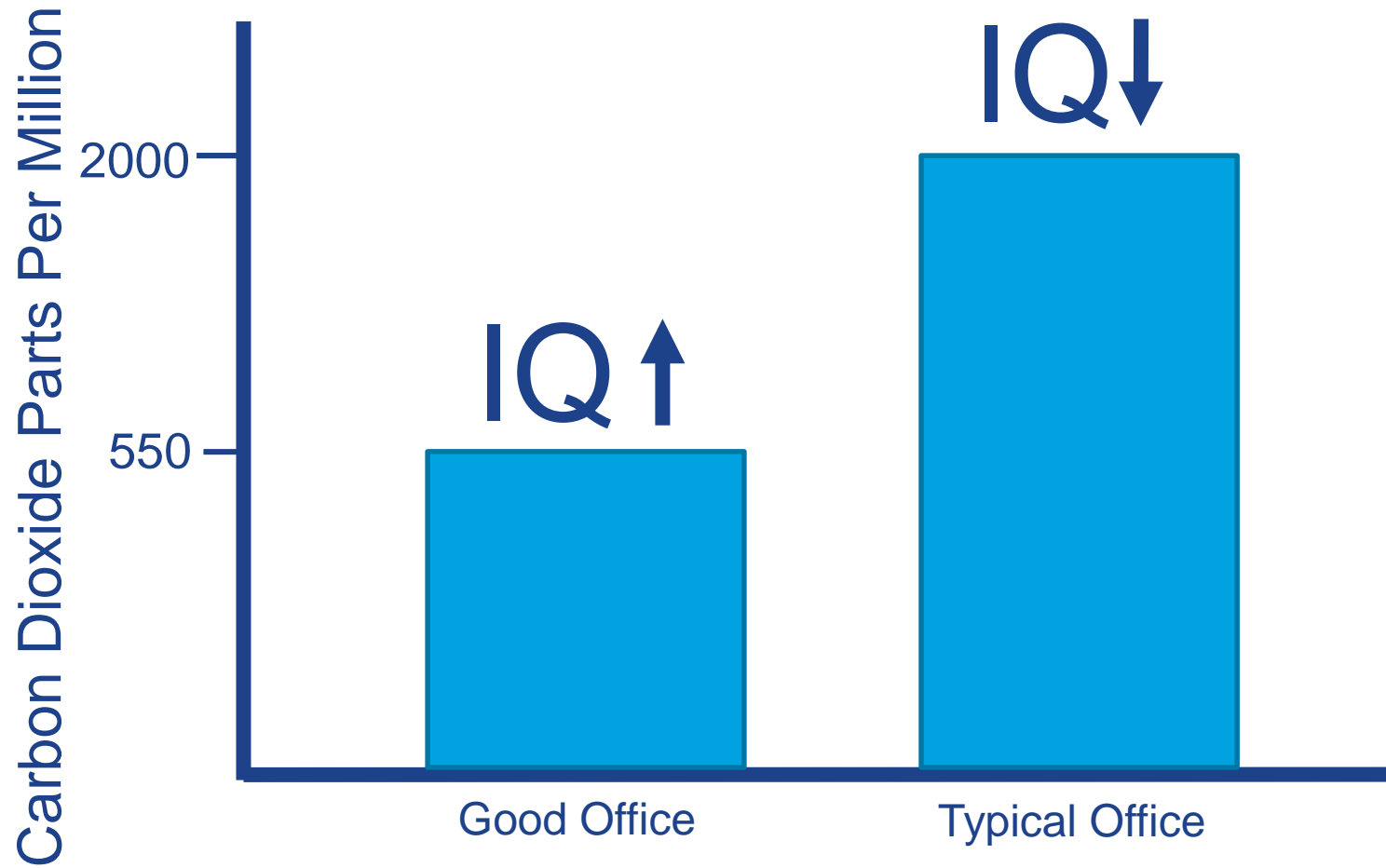
Sara Neff, Senior Vice President, Sustainability
Kilroy Realty Corporation





THE IMPACT OF GREEN BUILDINGS ON **COGNITIVE FUNCTION**





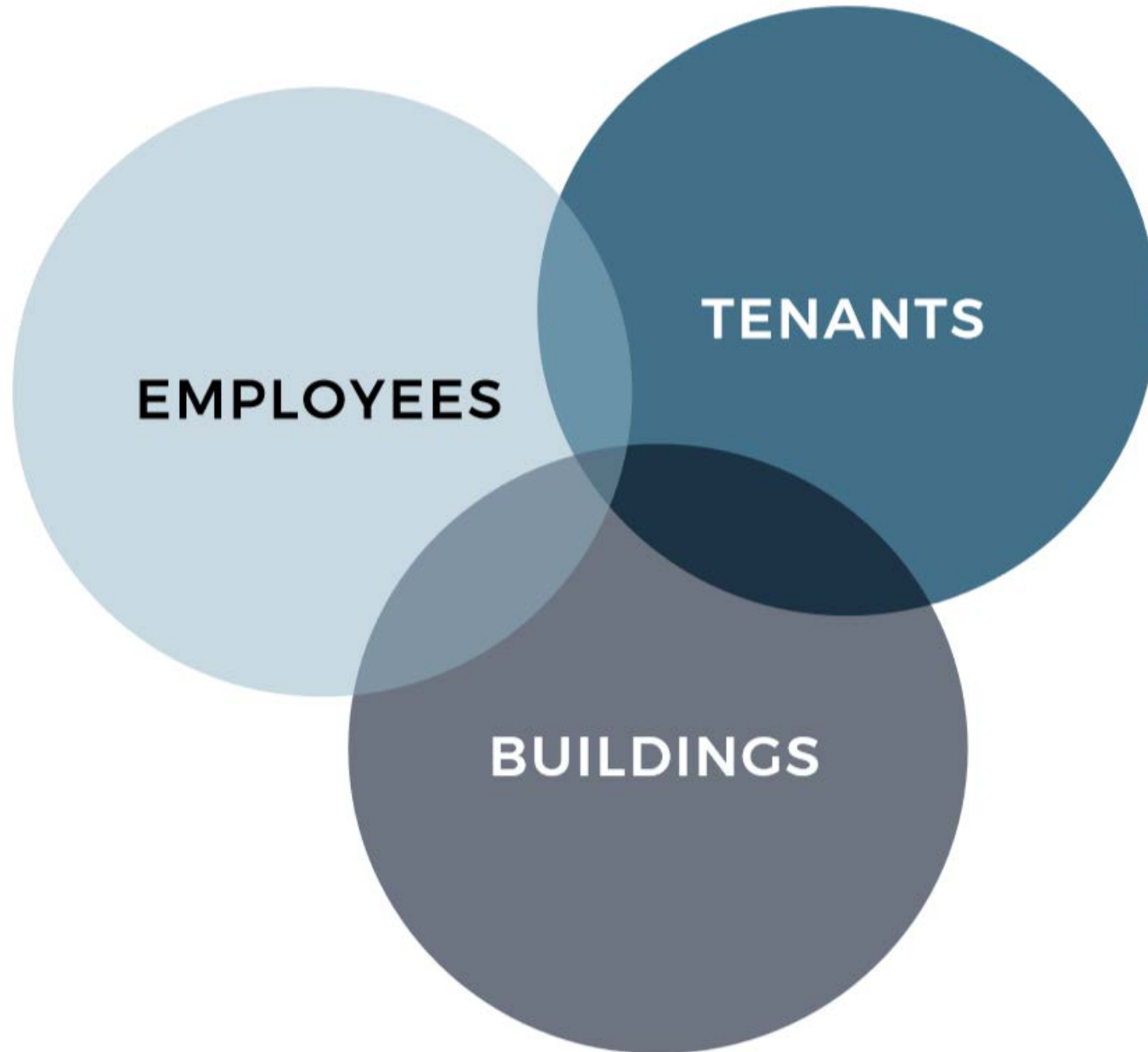


11 ACTIVE DESIGN irresistable stair

To promote human health, occupants of the building are greeted with an inviting stairwell with generous views of the city.

- The number of obese adult Americans has increased by 15% over the past 25 years.
- The average adult will burn approximately 3,900 calories over the course of a year by taking the stairs





Active Design





BURN SOME
CALORIES

TAKE THE
STAIRS



WORKED OUT TODAY.
CHECK.



PARK

PARK

BIKES

Air Quality Monitoring

CO2 Raw Data					
	Location	Data Point	Date	Time	CO2 Reading (ppm)
3	22F Suite 2210 Open Desks		05/08/2017	7:21	463.00
4	21F Suite 2100 Reception (N)		05/08/2017	7:24	478.00
5	20F Suite 2000 E Open Desks		05/08/2017	7:27	448.00
6	19F Suite 1900 W Open Desks		05/08/2017	7:29	457.00
7	18F Suite 1800 NE Open Desks		05/08/2017	7:32	486.00
8	17F Suite 1700 SE Open Desks		05/08/2017	7:37	442.00
9	16F Suite 1600 SW Open Desks		05/08/2017	7:41	455.00
10	15F Suite 1515 NW Conference Room		05/08/2017	7:44	460.00
11	14F Suite 1480 Reception		05/08/2017	7:48	529.00
12	12F Suite 1200 N Reception		05/08/2017	7:53	464.00
13	11F Suite 1100 Open Desks		05/08/2017	7:56	449.00
14	11F Suite 1111 Open Desks		05/08/2017	7:58	443.00
15	10F Suite 1060 NE Open Desks		05/08/2017	8:03	451.00
16	9F Suite 900 SE Break Area		05/08/2017	8:06	446.00
17	8F Suite 860 NW Open Desks		05/08/2017	8:09	447.00
18	7F Suite 716 SC Office		05/08/2017	8:11	445.00
19	2F Suite 200 E Break Area		05/08/2017	8:16	472.00
20	1F N Sitting Area		05/08/2017	7:09	502.00
21	1F Suite 120 E Open Desks		05/08/2017	8:19	498.00
22	1F Suite 100 N Open Area		05/08/2017	8:21	506.00
23	17F Suite 1702 N Interior Desks		05/08/2017	7:35	450.00
24	14F Suite 1450 NW Desks		05/08/2017	7:50	441.00
25	10F Suite 1000 SW Open Desks		05/08/2017	8:01	443.00
26	7F Suite 711 Open Desks		05/08/2017	8:13	479.00
27	22F Suite 2210 Open Desks		05/08/2017	9:08	535.00
28	21F Suite 2100 Reception (N)		05/08/2017	9:11	504.00
29	20F Suite 2000 E Open Desks		05/08/2017	9:14	503.00
30	19F Suite 1900 W Open Desks		05/08/2017	9:17	542.00
31	18F Suite 1800 NE Open Desks		05/08/2017	9:20	519.00
32	17F Suite 1700 SE Open Desks		05/08/2017	9:25	476.00
33	16F Suite 1600 SW Open Desks		05/08/2017	9:28	496.00
34	15F Suite 1515 NW Conference Room		05/08/2017	9:31	518.00
35	14F Suite 1480 Reception		05/08/2017	9:34	499.00
36	12F Suite 1200 N Reception		05/08/2017	9:39	541.00
37	11F Suite 1100 Open Desks		05/08/2017	9:42	527.00
38	11F Suite 1111 Open Desks		05/08/2017	9:44	510.00
39	10F Suite 1060 NE Open Desks		05/08/2017	9:48	506.00
40	9F Suite 900 SE Break Area		05/08/2017	9:51	512.00
41	8F Suite 860 NW Open Desks		05/08/2017	9:54	503.00
42	7F Suite 716 SC Office		05/08/2017	10:00	495.00
43	2F Suite 200 E Break Area		05/08/2017	10:03	563.00
44	1F N Sitting Area		05/08/2017	9:05	572.00
45	1F Suite 120 E Open Desks		05/08/2017	10:05	594.00
46	1F Suite 100 N Open Area		05/08/2017	10:07	510.00
47	17F Suite 1702 N Interior Desks		05/08/2017	9:23	488.00
48	14F Suite 1450 NW Desks		05/08/2017	9:37	514.00
49	10F Suite 1000 SW Open Desks		05/08/2017	9:46	515.00
50					
Ready					
Type here to search					

Healthy Materials



Health Product
DECLARATION

Tenants



Certifications



rich in amenities such as a 70-foot swimming pool, a yoga room, golf range, massage room, spa, party room and four roof decks.



Kelly Wearstler-designed interiors of the long- and short-term rentals available at Hollywood Proper. (Proper Residences)

At the Hollywood Proper Residences, a tower of long- and short-term luxury apartment rentals within the Columbia Square development, the health-focused design was built to meet the Well Building Standard, a performance-based system that measures, certifies and monitors such features as building materials, cleaning products, water and air quality and access to daylight and fitness facilities.

In the 11 months that Charlie Schloredt, 25, has lived in Hollywood Proper, he's come to appreciate the social and physical amenities of the tower. The energy-efficient lighting, appliances, non-toxic cleaning supplies and air and water filters have had a noticeable effect.

"My allergies are nowhere near what they used to be," he said. Schloredt runs his financing company, Merchant Financial Services, from the shared office space at the next-door New Hope. He has found a lot of good things about the building. "I've noticed this



Results



Megan O'Neil

City of Atlanta Mayor's Office of Resilience

MEGAN O'NEIL, ENERGY PROGRAMS MANAGER



100RC MEMBER CITIES



URBAN RESILIENCE

Is the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience.



RESILIENT ATLANTA

Actions to Build an Equitable Future

RESILIENT ATLANTA'S VISIONS

VISION 01:

PRESERVE AND CELEBRATE WHO WE ARE

Preserve and enhance Metro Atlanta's culture, shared identity, and history to build social cohesion and cultivate the creative economy

VISION 02:

ENABLE ALL METRO ATLANTANS TO PROSPER

Reduce the barriers preventing Atlantans from achieving economic stability and security to increase access to opportunity and move Atlanta out of the nation's top 10 cities ranked for income inequality

VISION 03:

BUILD OUR FUTURE CITY TODAY

Facilitate the development of an equitable and inclusive city while preserving and expanding Atlanta's natural environment

VISION 04:

DESIGN OUR SYSTEMS TO REFLECT OUR VALUES

Adapt Atlanta's civic systems to enable the City to become a leader in equity, sustainability, and resilience



Atlanta Better Buildings Challenge

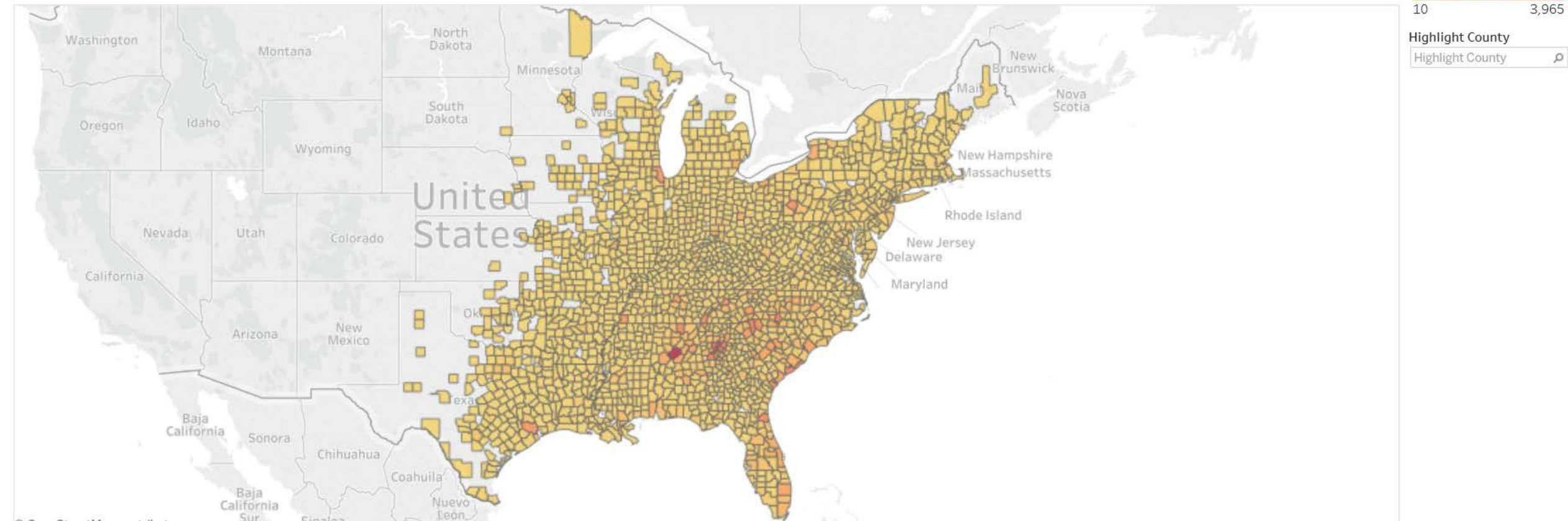
Voluntary initiative to reduce **energy** and **water** in
Atlanta's commercial buildings by 20% by 2020

U.S. DEPARTMENT OF
ENERGY

Health Impact



ABBC Public Health Impact



Visit ABBCdata.com
for more information

Looking at wellbeing in our own assets



Additional Resources

THREE3

[Home Page](#)

[Research publications](#) on health benefits for single-family

Marking Affordable Multifamily Housing More Energy Efficient: [A Guide to Healthier Upgrade Materials](#)

Policy Matters: [Making Energy Upgrades Healthier For Residents, Workers, and Neighbors](#)

KILROY REALTY

[Sara Neff Home Page](#)

[Erected Dysfunction: Our Buildings Hurt Us, But They Don't Have To: Sara Neff TEDxCulverCity](#)

CITY OF ATLANTA

[Atlanta Better Buildings Challenge Home Page](#)

[Resilient Atlanta](#) Actions to Build an Equitable Future

Q&A

Better Buildings Webinar Series

PRIORITIZING LABORATORIES TO MEET YOUR ENERGY GOALS

Tuesday, January 8, 2019 | 3:00 - 4:00 PM ET

[REGISTER TODAY >](#)



RETHINKING TRADITIONAL FINANCE:

HOW EFFICIENCY-AS-A-SERVICE UNLOCKS NEW
POTENTIAL FOR BUSINESS

Tuesday, April 2, 2019 | 3:00 - 4:00 PM ET

[REGISTER TODAY >](#)



LESSONS FROM THE FIELD:

REAL WORLD APPLICATIONS THAT INFORM R&D

Tuesday, February 5, 2019 | 3:00 - 4:00 PM ET

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STRAIGHT TALK:

TALKING TO MULTIFAMILY TENANTS
ABOUT UTILITY BENCHMARKING

Tuesday, May 7, 2019 | 3:00 - 4:00 PM ET

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BETTER BUILDINGS, BETTER BODIES:

STRATEGIES FOR HEALTH & WELLNESS

Tuesday, March 5, 2019 | 3:00 - 4:00 PM ET

[REGISTER TODAY >](#)



SOLUTIONS FOR SMALL DATA CENTERS – AIR MANAGEMENT PACKAGES

Tuesday, June 4, 2019 | 3:00 - 4:00 PM ET

[REGISTER TODAY >](#)



Better Buildings Webinar Series



RETHINKING TRADITIONAL FINANCE:

HOW EFFICIENCY-AS-A-SERVICE UNLOCKS
NEW POTENTIAL FOR BUSINESS

Tuesday, April 2, 2019 | 3:00 - 4:00 PM ET

[REGISTER TODAY >](#)

On this webinar, we will highlight a new efficiency-as-a-service toolkit and Better Buildings Financial Allies will share insights from the field.



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IMPROVING AMERICA'S BUILDINGS
THROUGH LEADERSHIP AND INNOVATION

BETTERBUILDINGSINITIATIVE.ENERGY.GOV/SUMMIT

U.S. DEPARTMENT OF
ENERGY



U.S. DEPARTMENT OF
ENERGY

Additional Questions? Please Contact Us

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