

MAY  
17-20  
2021



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U.S. DEPARTMENT OF  
**ENERGY**



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# Health, Efficiency, and Building Operations: Insights from the Pandemic and a Look Ahead

Wednesday, May 19<sup>th</sup>, 2021

3:45 PM – 5:00 PM EST



# Hannah Debelius

ORISE Fellow, Department of Energy

# Agenda

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**1**

Introductions

**2**

Jonathan Bauer, The Tower Companies

**3**

Rishi Shah, Wyndham Hotels & Resorts

**4**

Sara Neff, Kilroy Realty Corporation

**5**

Discussion and Q & A

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**#DOE**

# Today's Presenters

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**Jonathan Bauer**  
The Tower Companies



**Rishi Shah**  
Wyndham Hotels & Resorts



**Sara Neff**  
Kilroy Realty Corporation



Jonathan Bauer  
The Tower Companies

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# Health, Efficiency, and Building Operations

Better Buildings Summit  
May 19, 2021

Jonathan Bauer  
Sustainability Manager



# Company Overview

## THE TOWER COMPANIES AT A GLANCE

**6 MILLION**

square foot portfolio  
(Tower and partner-operated)

**13 MILLION**

square feet in development

**100**

employees

**90%**

of portfolio operating under a  
green lease

**100%**

renewable energy  
commitment

**Fitwel**

Champion

**2,000**

employee volunteering hours  
used since 2012

**15%**

staff have been with the  
company for 20 years or more

**42%**

of our Senior Leadership  
team are women

**95%**

LEED Certified

**80%**

of Office Building Portfolio is  
ENERGY STAR® Certified

**Two**

dedicated sustainability team  
members; including senior  
leadership position

All data in this report represents tower owned and managed properties unless otherwise noted.

AQUATERRA - ROOFTOP AT THE PEARL OVERLOOKING ROCK CREEK PARK  
PHOTO CREDIT: 2018 JOHN HARRINGTON

THE TOWER COMPANIES 2019 CORPORATE RESPONSIBILITY REPORT

## PEOPLE. PROPERTIES. PURPOSE.

At The Tower Companies, we are committed to making a difference through our business and community. We develop, own, and manage commercial, retail, and multifamily residential properties in the Washington D.C.-metro area while being mindful of our global impact. Our dedication to the nation's capital has allowed us to build long-term relationships and foster lasting community impact.

Since our founding in 1947, we have continued to thrive while staying true to the belief that our actions and business can positively benefit the health of our people and planet.

### OUR VISION

We envision a world where buildings inspire and enrich the lives of their occupants. In this world, people seek out buildings that create positive social change by helping to sustain the environment, better their health and well-being, and connect them to thriving communities.

# Washington, DC Based Portfolio




# Our Commitment

At every decision point, we consider our ability to advance the real estate industry, impact on the environment, and commitment to the well-being of people and local communities.



# Health & Wellness History

 HARVARD BUSINESS SCHOOL

9-210-070  
REV. MAY 4, 2010

JOHN D. MACOMBER  
GRIFFIN H. JAMES

## Design Creates Fortune: 2000 Tower Oaks Boulevard<sup>a</sup>

*Vedic buildings connect individual life with cosmic life.<sup>1</sup>* — Maharishi Mahesh Yogi

Jeffrey Abramson and David Borchardt, key members of the 2000 Tower Oaks development and ownership team, proudly showed a visitor around their LEED<sup>®</sup> Platinum, largely vacant office building in the summer of 2009. Located on the prestigious Interstate 270 Corridor in Rockville, Maryland, not far from the U.S. Capital District, 2000 Tower Oaks Boulevard was named the greenest office building in the state of Maryland.<sup>2</sup> The building was also created in accordance with The Tower Companies' commitment to Fortune-Creating<sup>®</sup> Vedic Architecture (Vedic), promoted in its totality worldwide by Maharishi Mahesh Yogi, founder of the Transcendental Meditation Program.

Abramson and Borchardt believed that the many LEED, Vedic, EPA ENERGY STAR<sup>®</sup>, and other features of their building would enhance its value and help their tenants to succeed in the long run. But the results were not obvious as they stood in the gleaming lobby with their guest. Could they afford to build a building like 2000 Tower Oaks Boulevard again?

Considering the long-term goals of Abramson and The Tower Companies, could they afford not to?

### The Tower Companies

The Tower Companies (Tower), a third-generation, family-owned development and management company, encompassed a diverse portfolio of more than four million square feet of office buildings, office parks, regional malls, lifestyle centers, residential communities, and hotels across the Capital Region. Of this total, one million square feet were so-called "green" or "sustainable" projects. Another 2.5 million square feet were in the planning stages. "For 60 years and three generations, the family-owned Tower Companies has maintained a commitment to socially responsible development by creating environmentally conscious buildings and communities that are enduring and aesthetically pleasing and positively impact their inhabitants," declared Tower's website.<sup>3</sup> Tower claimed to be the largest "green developer" in the Washington, DC area, and one of the largest

<sup>a</sup> Title derived from "Fortune-Creating<sup>®</sup> Vedic Architecture." "Fortune-Creating" is a registered trademark of the Maharishi Vedic Education Development Corporation.

Lecturer John D. Macomber and Research Associate Griffin H. James prepared this case. Certain details have been disguised. HBS cases are developed solely as the basis for class discussion. Cases are not intended to serve as endorsements, sources of primary data, or illustrations of effective or ineffective management.

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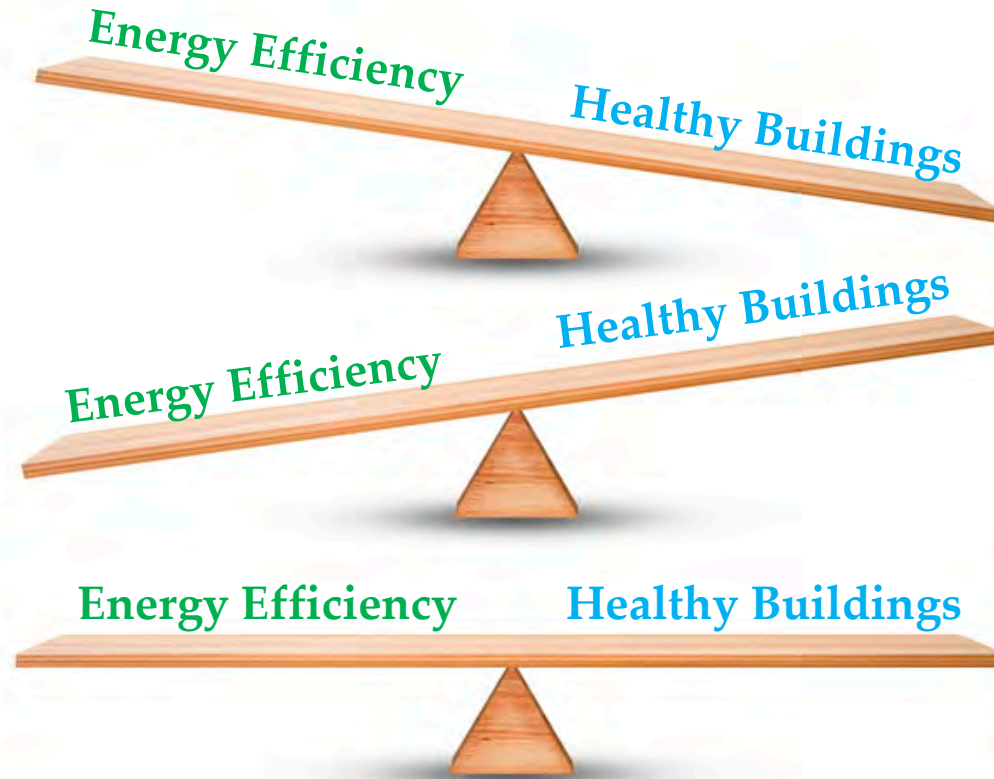
*"The surroundings satisfy a basic human hunger for beauty and lends to a peacefully buoyant working environment. It's different - there is a strong sense of stillness."*

*~ Tower Team Member*



*Harvard Business School, 2010*

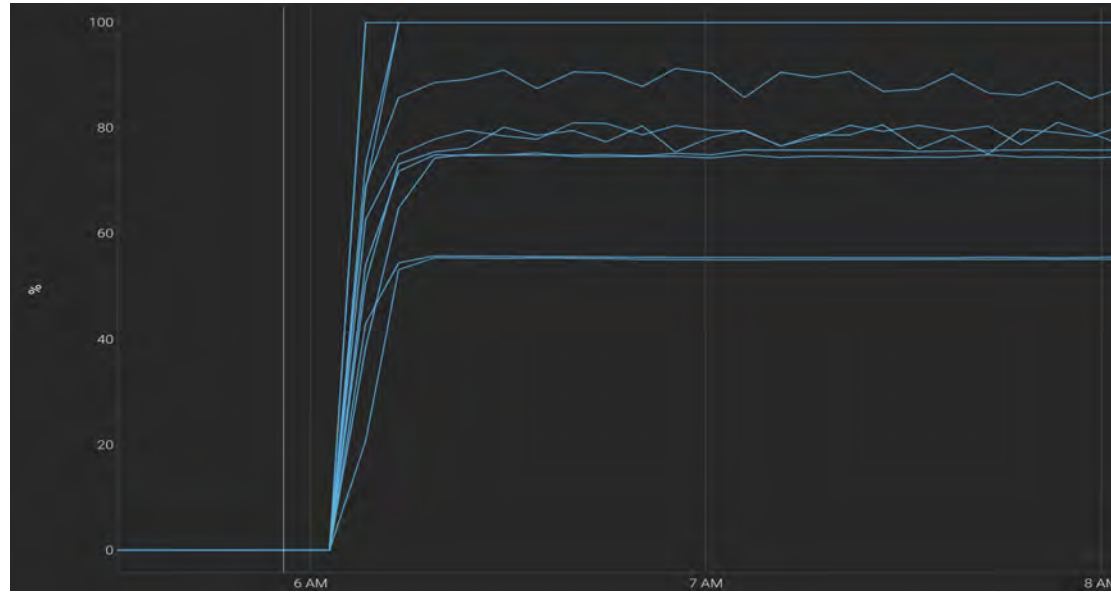
# The Perfect Balancing Act



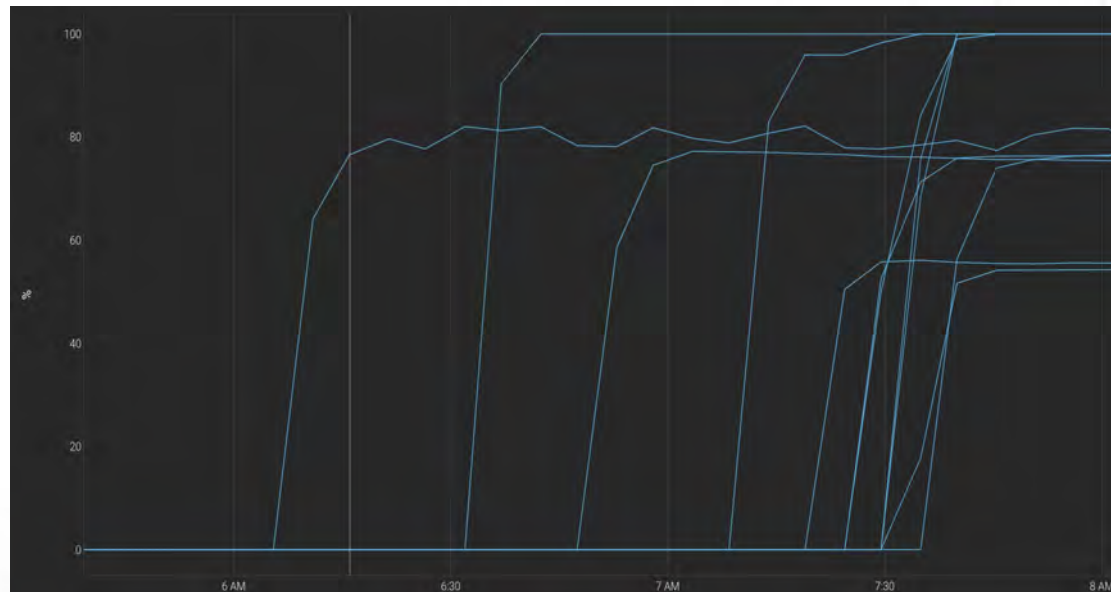
# Where Health and Energy Efficiency Meet



Before



After



# COVID-19 Response and Outlook



# Fitwel Viral Response Certification



building health for all

HEREBY CERTIFIES THAT

The Tower Companies

IS HAS ACHIEVED FITWEL VIRAL RESPONSE CERTIFICATION WITH DISTINCTION AND

**1909 K Street in Washington DC, District of Columbia  
is Viral Response Approved with Distinction**



Fitwel®  
Viral Response  
Certified

Approved as of: 11/17/2020  
Module v2020-2021

Handwritten signature of Joanna Frank in black ink.

Joanna Frank, President & CEO, Center for Active Design

Handwritten signature of Reena Agarwal in black ink.

Reena Agarwal, Chief Operating Officer, Center for Active Design



Fitwel & Design is a registered trademark of the U.S. Department of Health & Human Services (HHS). Participation by The Center for Active Design and/or any other organization does not imply endorsement by HHS.



Rishi Shah

Wyndham Hotels & Resorts

Submit Questions

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# Health, Efficiency, and Building Operations:

Insights from the Pandemic and a Look Ahead

Rishi Shah, Director, Sustainability

**WYNDHAM**

HOTELS & RESORTS



# Company Overview



20 iconic brands



Approximately  
**8,900**  
affiliated hotels



Approximately  
**95** countries



Approximately  
**797,000** rooms



**87** million enrolled  
Wyndham Rewards®  
members

as of 3/31/2021

# Our Social Responsibility Approach



## A Culture of Diversity, Equity & Inclusion

We embrace different perspectives in our inclusive and fun workplaces and hotels where everyone has access to genuine opportunities to succeed

Travel empowers people to experience the incredibly diverse world we live in. Diversity is key to our business, and we strive to maintain a culture of inclusion for our team members, stakeholders and guests.



## Protecting Human Rights

We are committed to the safety and well-being of our team members and guests

Helping to try to stop to human trafficking is a major priority for our entire industry. We continue to support the development of resources and the education of our hotel owners, team members and stakeholders in an effort to help combat human trafficking.



## Supporting Our Communities

We care for the communities in which we work and live

Through our Count on Me culture, we empower our team members, hotel owners and Wyndham Rewards members to make a difference, and we're incredibly proud of how they have stepped up to donate thousands of volunteer hours, loyalty points, rooms and more to their communities over the last year.



## Leadership in Sustainability

We are accountable for our part in protecting the environment

Through numerous initiatives, we take steps every day to minimize the impact of our operations, working to reduce our environmental footprint and preserve natural resources.

# WYNDHAM GREEN

Focus areas:

Climate  
Change



Minimize our impact on climate change by reducing our emissions

Energy Efficiency and  
Renewable Energy



Become energy efficient and increase usage of renewable energy

Water  
Conservation



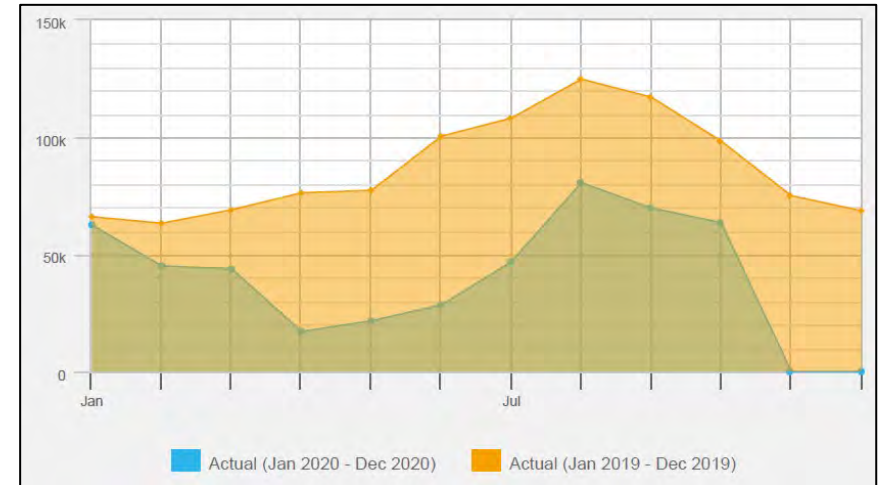
Increase water conservation and identify risks and opportunities

Waste  
Diversion



Understand waste profiles and increase diversion

# WYNDHAM GREEN



## Hotel Exterior

- Energy efficient lighting
- Air sealing
- Irrigation controls for landscaping
- Basic recycling
- Single use plastic minimization

## Common Areas

- Energy efficient lighting
- Low flow toilets
- Basic recycling
- Single use plastic minimization
- Water refill station

## Guest Rooms

- Energy efficient lighting
- Heat and cooling set points or occupancy controls
- Basic & advanced preventative maintenance programs
- Efficient appliances and equipment
- Low flow showerheads
- Low flow aerators for bathroom faucets
- Low flow toilets
- Linen and towel reuse
- Basic recycling
- Single use plastic minimization

## Back of House

- Energy efficient lighting
- Lighting occupancy controls
- Basic & advanced preventative maintenance programs
- Efficient appliances and equipment
- Basic recycling
- Single use plastic minimization
- Recycling of hazardous materials
- Food waste composting

# Our COVID-19 Response

## Health & Safety

1. Adaptation for team members
2. Launched Count on Us<sup>®</sup>
3. Safety messaging and cues are built into the customer experience
4. New mobile app goes high impact, low contact
  - a) Mobile Check-In/Checkout
  - b) Digital Room Key
  - c) In-Stay Mode



Masks required in indoor public areas at all U.S. and Canada hotels



More frequent cleaning and disinfecting of high-touch areas



Disinfecting wipes with your key card at check-in



Complimentary travel-size hand sanitizer for each room



Enhanced social distancing measures in public spaces



Meeting spaces accommodate social distancing and virtual attendees



# Our COVID-19 Response

## Connection to Energy Efficiency

1. Housekeeping services will be kept to a minimum
2. Wyndham Green
  - a) Recommended practices to help better control utility expenses during lower occupancy periods
  - b) Expedited renovations or projects
    - i. Enhance guest experience
    - ii. Cost savings measures
      1. LED Retrofits
      2. EMS
      3. Water Efficiency

**WYNDHAMGREEN**  
Top 10 Ways to Save on Utility Expenses during Lower Occupancy Periods

1. **Preventative Maintenance** - continue your PM schedule on major systems and components, which can help ensure higher run times, less repair costs, and run more efficiently consuming less energy.
2. **Thermostats** - Adjust temperature set points for cooling and heating by 2-4 degrees, which according to the Department of Energy estimates that for each degree you adjust the temperature there will be a corresponding 1% savings.
3. **Leverage Your Team** - encourage team members to be observant, by looking and listening for problems.
4. **Housekeeping Procedures** - encourage team members to utilize daylight if feasible and close the drapery when finished cleaning rooms to help reduce heat and cooling losses.
5. **Room Closures** - in times of lower occupancy setback the temperatures to reduce energy waste and consider temporarily take rooms out of order, in accordance with your franchise agreement and System Standards
6. **Guest Placement** - consider placing guests in adjoining rooms to share the heat
7. **Reduce Waste Removal Pickups** - consider reducing the frequency of pickups due to less volume of waste.
8. **Use the Wyndham Green Toolbox** - monitor and track utility consumption and costs, which can help to alert you to irregular costs or usage
9. **Keep Selling** - complete the Environmental Section in Lanyon in its entirety using the information input into the **Wyndham Green Toolbox** to help increase your chances of competing for more business.
10. **Energy Procurement** - If your hotel is in a deregulated energy market (e.g. electricity, natural gas or both), then ensure you have the most competitive rates to help reduce energy costs, better budget expenses and better mitigate risk of market volatility.



Sara Neff

Kilroy Realty Corporation

Submit Questions

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# KILROY REALTY

—

@KILROYGREEN



**KILROY**



**BUILDING  
HEALTH: WHERE  
WE WERE**

salesforce

THE FIRST MISSION





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

The image shows the cover of a report. The background is a photograph of a modern, multi-story office building with a large glass facade and a central atrium. The atrium has a wooden floor, blue seating, and people walking. A white text box is overlaid on the top half of the image.

**stök**

## THE FINANCIAL CASE FOR **HIGH PERFORMANCE BUILDINGS**

QUANTIFYING THE BOTTOM LINE OF IMPROVED  
PRODUCTIVITY, RETENTION, AND WELLNESS

stök  
San Francisco, CA  
Denver, CO

stök.com  
hello@stök.com  
@teamstök

# Active Design



# Air Quality Monitoring

CO2 Raw Data					
	Location	Data Point	Date	Time	CO2 Reading (ppm)
1					
2					
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

Windows Taskbar: Type here to search, File Explorer, Edge, Mail, PowerPoint, Excel, Chrome









**BUILDING  
HEALTH: WHERE  
WE ARE**

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INTEGRITY | MISSION

### **SANITATION TECHNOLOGIES**

- Touchless Systems
- Clean Air
- Health and Hygiene

### **ADAPTABLE SHARED SPACES**

- Amenities & Benefits
- Alternative Vertical Circulation
- Access to Fresh Air

**Maximizing Tenant Control, Health, and Safety**

### **FLEXIBLE BUILDING DESIGNS**

- Lobby Enhancements
- Core Modifications
- Space Flexibility



Let's get  
this party  
started!

# Safe and Healthy Work Environments

## Increased Cleaning and Integration of New Sanitation Technologies



### Integration of Touchless Systems

- Entryways\*
- Restroom doors/fixtures\*
- Elevator controls\*



### Clean Air

- Air filtration
- UV cleaning
- Outdoor air exchanges
- Air quality verification by 3rd party industrial hygienist



### Health and Hygiene

- Visual cues and signage
- Wellness checks
- Sanitation stations
- Increased cleaning
- Robotic UV cleaning\*



Representative building, inspired by 2100 Kettner, San Diego

\*Currently exploring the possibility of integrating within both stabilized properties and future development.

# Flexible and Versatile Work Environments

## Adaptable Shared Spaces

### Amenities & Benefits

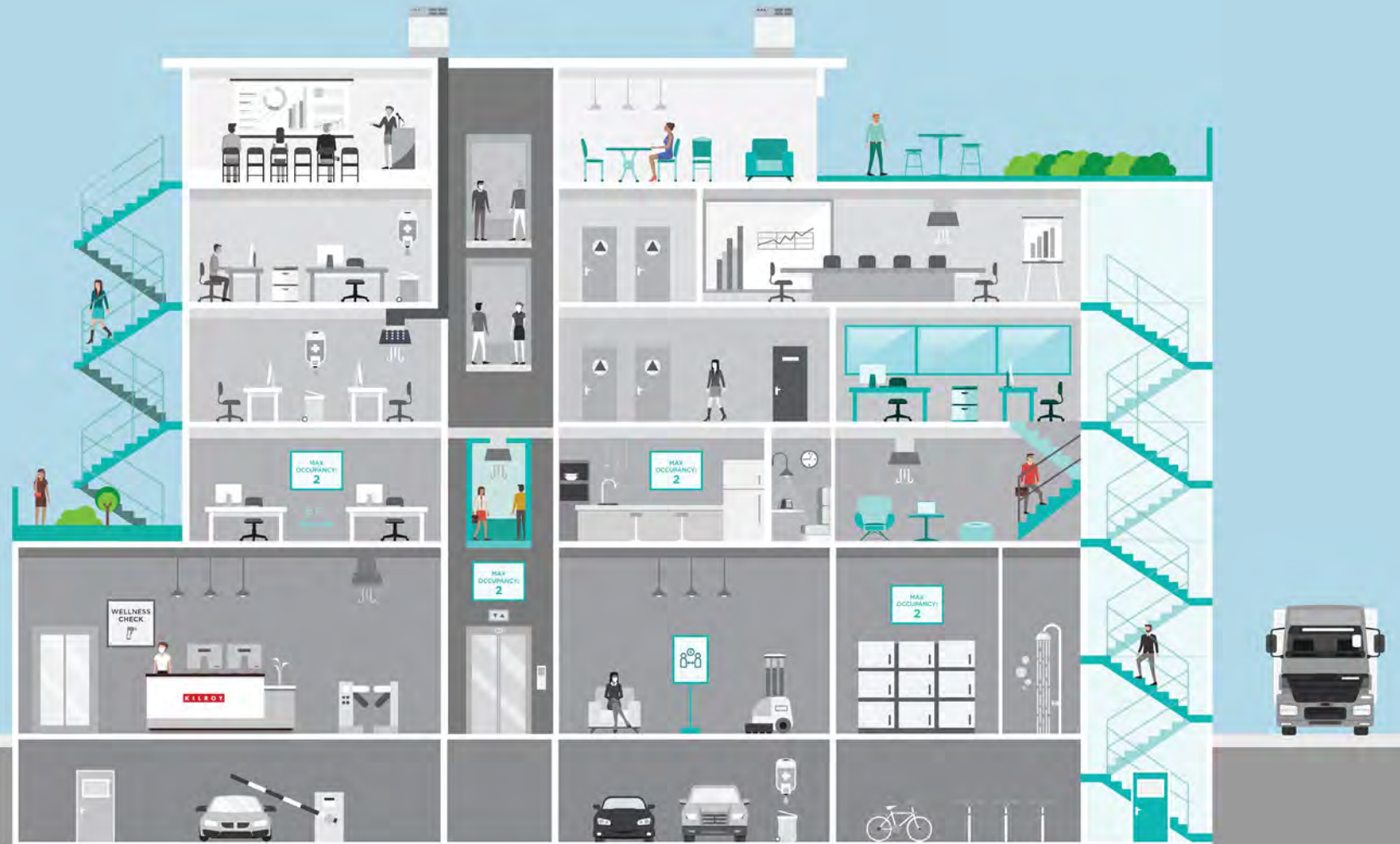
- Density management
- On-site air, water, and germ testing and verification
- Programming - childcare, health, wellness, and safety\*

### Alternative Vertical Circulation

- Multiple modes of access
- Elevator cab: density control technology
- Exit stairs: generously sized, upgrading quality of space\*
- Open air stairs\*

### Access to Fresh Air

- Plazas
- Terraces & roof decks
- Naturally ventilated atriums\*
- Operable windows\*



Representative building, inspired by 2100 Kettner, San Diego

\*Currently exploring the possibility of integrating within both stabilized properties and future development.

# Agile Places and Spaces

## Flexible Building Design

### Lobby Enhancements

- Health screening
- Density management
- Tenant-controlled lobbies\*

### Core Modifications

- Entry points
- Elevators: stacked cabs
- Stairs: well distributed
- Corridors: wider for sharing
- Restrooms: touchless and private

### Space Flexibility

- Increase *per employee* space requirements (20% more space)\*
- Work zones\*



Representative building, inspired by 2100 Kettner, San Diego

\*Currently exploring the possibility of integrating within both stabilized properties and future development.



# BUILDING HEALTH: WHAT IS NEXT

salesforce

THE FUTURE OF HEALTHCARE







# KILROY REALTY



**WHERE INNOVATION WORKS**

The Kilroy Realty logo, consisting of the word "KILROY" in white, uppercase, sans-serif font, centered within a red rectangular background. The logo is positioned in the bottom right corner of the image, overlaid on a brick building facade.

**KILROY**

## Additional Resources

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Nantum system at 1828 L Street (Tower) – [Link](#)

Health Care Without Harm's Energy and Health Impact Calculator – [Link](#)

9 Foundations of a Healthy Building – [Link](#)

COBE: Health Co-Benefits of the Built Environment – [Link](#)

2020 Summit Opening Plenary ft. healthy buildings expert Dr. Joseph Allen – [Link](#)

# Better Buildings: Summer Webinar Series



## ELECTRIFYING OUR BUILDINGS: CHALLENGES AND SOLUTIONS

June 8



## BECOMING ESPC-READY

June 15



## BOOSTING INDUSTRIAL AND MANUFACTURING EFFICIENCY AND RESILIENCY WITH CHP

June 17



## FINANCING IN HIGHER EDUCATION

June 22



## WHAT'S HOT WITH HEAT PUMPS

June 29



## HOW TO IDENTIFY CHP PROJECTS THAT FIT YOUR GOALS

July 1



## KICK THE TIRES: UNDERSTANDING THE ROLE OF R&D IN THE DEPLOYMENT OF BUILDING ENERGY TECHNOLOGIES

July 6



## ESPC IN THE EXPRESS LANE: NEW PROJECT TRACKING TOOLS

July 13



## WORKPLACE EVOLUTION: SUPPORTING OCCUPANT HEALTH WHILE ACHIEVING ENERGY EFFICIENCY

July 20



## ENERGY-SAVING ENVELOPE SUCCESS STORIES

July 27



## WASTE REDUCTION: LESSONS LEARNED AND WHAT COMES NEXT

August 3



## VISUALIZE YOUR ENERGY FUTURE WITH 'SLOPE': THE STATE AND LOCAL PLANNING FOR ENERGY PLATFORM

August 10

# Additional Questions?

## Please Contact Us



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Better Buildings Solution Center  
<https://betterbuildingsolutioncenter.energy.gov/>



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