



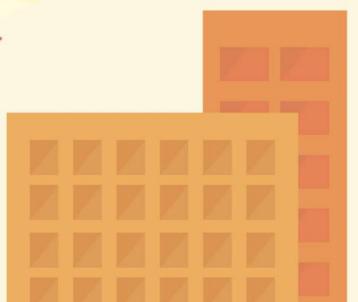
Daylight Hour

One hour when we ask you to turn it off.

June 21, 2019

Lower the lights for one hour.
Raise Awareness.
Transform the conversation.

www.daylighthour.org





77 M sf (68 M sf this time last year)

7 city partners

(7 city partners this time last year)



424 offices

(418 offices this time last year)

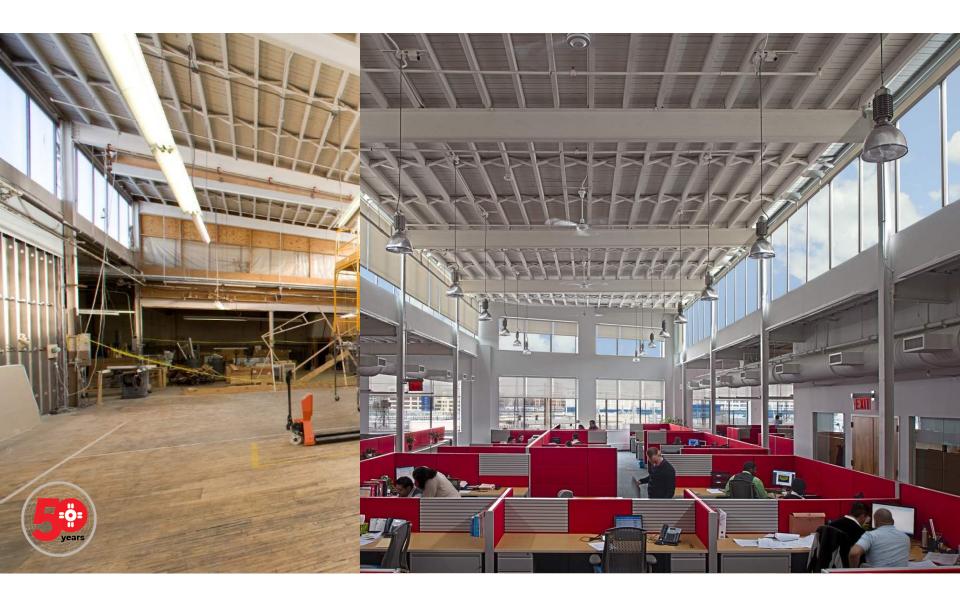
Participants include Arup, FirstService Residential, Thornton Tomasetti, Jonathan Rose Companies, The Metropolitan Museum of Art, MSKCC











WHY THE OCCUPANT EXPERIENCE MATTERS: The Quantified Financial Benefits of Healthy, High Performance Buildings

Jacob Arlein, stok Audi Banny, IMT





Welcome!

The Evolution of High Performing Buildings
Why Health and Wellness Matters
The Financial Case



What is the Institute for Market Transformation?

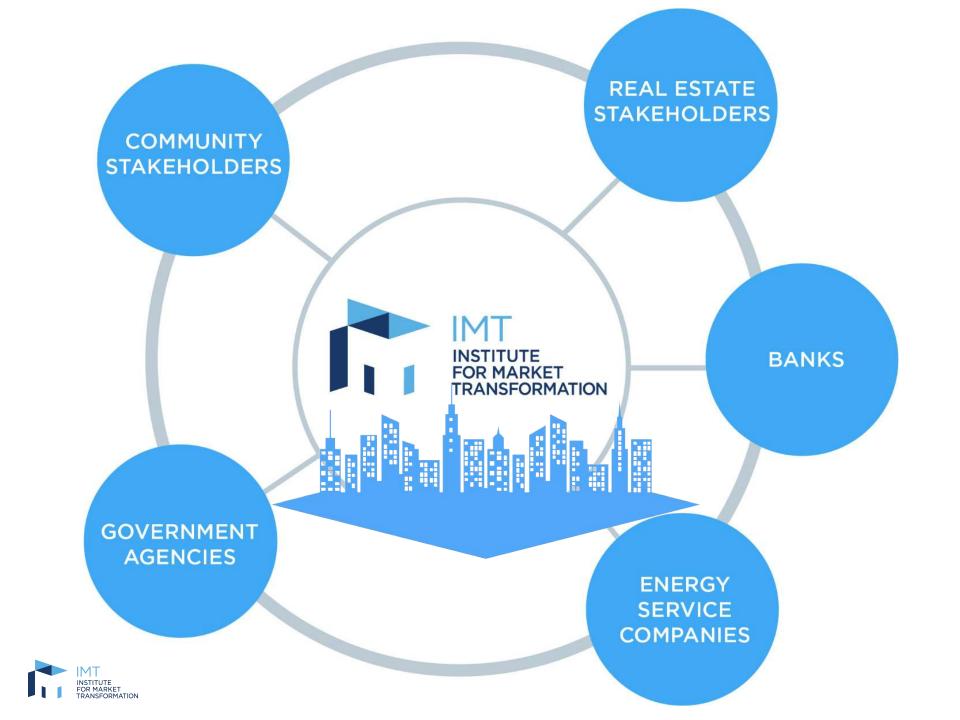


 IMT's Mission: Catalyze demand for high-performing buildings.



 IMT's Vision: A world where efficient buildings dramatically lower greenhouse gas emissions and positively transform our physical, social, and economic wellbeing.





STOK IS PURPOSE-DRIVEN





World's First
Impact Rated,
Fossil Free,
Gun Free
Francisco's First
NZE Building

Designed the way nature intended





STOK CORE PRACTICE AREAS

SUSTAINABLE DESIGN

Technical design and certification consulting to elevate project success and ensure goals are met.

PROJECT MANAGEMENT

Expert guidance from concept to construction, with an integrated approach.

ENGINEERING & COMMISSIONING

Seamless management of all phases of the building lifecycle to assure optimal building performance.

WHAT MAKES A HIGH PERFORMANCE BUILDING?



Enhanced occupant experience



Optimized resource efficiency



Minimized environmental impacts



Embedded resiliency



Improved financial performance



WHY DOES IT MATTER?



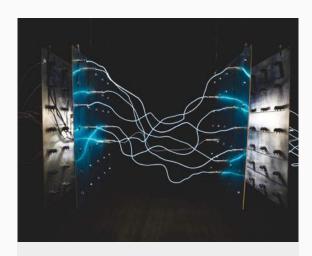
40%

energy consumed by U.S. buildings



28.8%

higher NOI in green buildings



17.6%

reduction in operating expenses per sq./ft compared to non-green properties

https://energy.gov/sites/prod/files/2017/05/f34/bto_PilotResearchStudy-DOEFinancialDataInitiative 5-8-17.pdf





WHERE'S THE VALUE?

Developer

Why would I want to build this high-performing building?

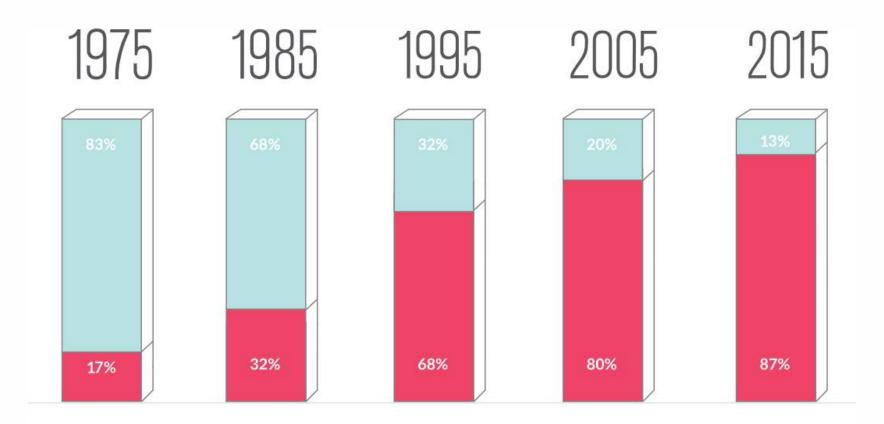
Landlord
Property Manager

Why would I want to own this high-performing building?

Tenant

Why would I want to lease this high-performing building?

U.S. MACRO-ECONOMIC SHIFT - S&P 500 VALUE







Source: Ocean Tomo. (2015, March 4). Annual Study of Intangible Asset Market Value from Ocean Tomo, LLC.



PRIORITIES MERGE **OWNER** Higher sale value Rent premiums Competitive Advantage Faster leasing & sale velocity Report to investors Energy Energy **Efficiency Efficiency Improves Improves PROPERTY TENANT MANAGER** Increase employee retention Reporting Low vacancy rates Enhanced employee Competitive advantage productivity Satisfaction (Health & Wellness, LEED) **Improves** Low O&M costs Report to Owner Voluntarily report to third Low O&M costs party rating systems







Global Wellness Summit Trends Report 2019



Top Wellness Trends of 2019 – Well+Good



11 Wellness Trends to Watch in 2019 – MindBodyGreen



5 Trends for 2019 – TrendWatching

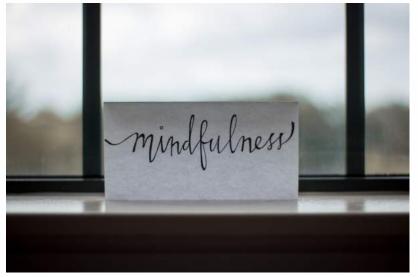


The Future 100: 2019 – JW Intelligence



Future Forecast 2019 – The Future Laboratory









49% building owners are willing to pay more for buildings demonstrated a positive impact on health

87% of employers focused on health in the office

73% of these employers offer a wellness program

WELLNESS AS A BUSINESS STRATEGY

75%

57%

OF JOB SEEKERS

OF JOB SEEKERS

Care that their potential employer supports and values their health and wellness

Are more likely to stay with the company longer if their employer supports and values their health and wellness

91%

73%

OF EMPLOYERS

OF EMPLOYERS

Report offering employee health and wellness programs for reasons beyond medical health savings Believe their responsibility to ensure the health and wellness of their employees will increase in the next 3-5 years (2017)



BREEAM® delivered by bre

HOW DO RATING SYSTEMS INFLUENCE THE MARKET?















INDUSTRY RESPONSE





















in 1994

U.S. Green Building Council

Releases LEED pilot credit intended to reduce quantity of harmful indoor air contaminants

Released by International WELL **Building Institute**

World Green Building Council

Publishes global report: "Health, Wellbeing and Productivity in Offices"

CA Energy Commission (CEC) Prop 39 Guidelines Account for benefits from improved lighting, acoustics, air quality, occupant comfort, and health and safety

Environmental **Health Perspectives** Releases report that associates cognitive function of office workers with CO₂, ventilation, and volatile organic compound exposure

People, about buildings that support healthier lives for occupants

A unique, high-impact building certification fully launches in 2017

GRESB Real Estate Assessment

Adds new Health & Well-being Module





DOCTORS WEIGH IN

"Poses a danger to the health of every American now and in the future"

American Association for the Advancement of Science (the largest scientist organization in the US)





THE IMBALANCE OF SPENDING VS **ACTUAL IMPACT**

Access to Health Treatment

U.S. Health Expenditure \$ 85%

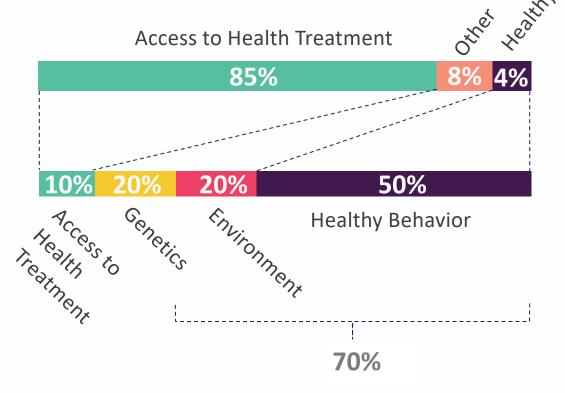
8% 4%



THE IMBALANCE OF SPENDING VS ACTUAL IMPACT

U.S. Health Expenditure \$

Actual Influence on Health



Human Environment & Behavior make up 70% of what actually influences human health yet only ~10% of U.S. health spending is associated with improved human environment & behavior. For buildings operated and utilized by the same organization, positively impacting building occupants' health can lead to decreased business expenses and improved profitability.





OPPORTUNITY AREAS FOR IMPACT

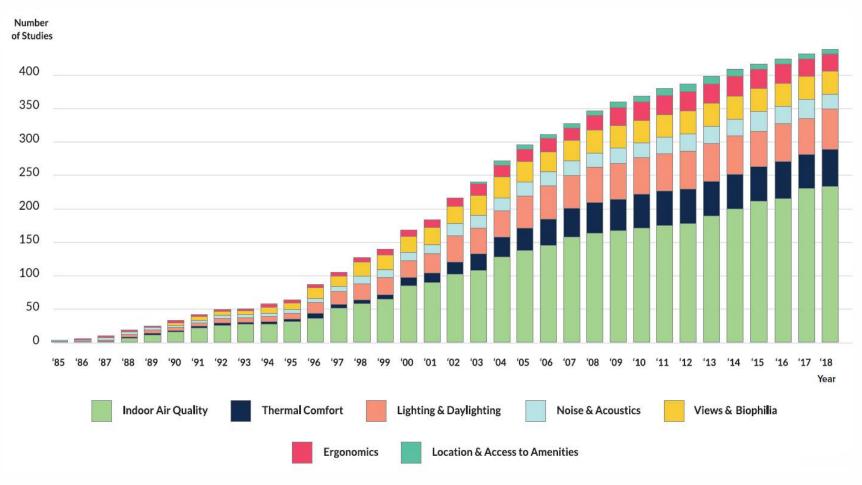
| THERMAL COMFORT | VENTILATION | AIR QUALITY | BIOPHILIA | MOVEMENT |
|----------------------|---|---|-------------------------------------|---|
| | <u></u> | | | Ż. |
| | | | | |
| Temperature | Source of ventilation Ventilation rates | Particulates | Natural light | % access to activity space % time spent sitting Highlight stairways Active design |
| set-points | | Filtration levels | Daylight sensors | |
| Relative humidity | | Carbon dioxide % desks views or monoxide % site | % desks with | |
| Occupant control | | | % site | |
| | | Volatile organic compounds | landscaped Plant mass / floor ratio | |
| | | Nitrasanavidas | | |

Nitrogen oxides





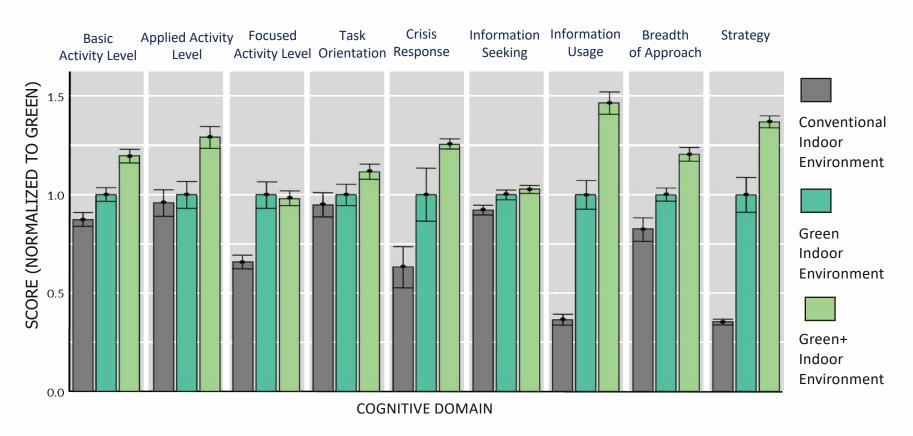
RESEARCH CORRELATING KEY DESIGN ELEMENTS AFFECTING OCCUPANTS



Source: Loftness, V., Hartkopf, V., Azizan, S., Choi, J., & Yang, X. (2011). Building Investment Decision Support (BIDS) for green building technologies. System Innovation for Sustainability 4: Case Studies in Sustainable Consumption and Production -- Energy use and the Built Environment, 108-132. [Actual data through 2012, followed by estimate data through 2018.]



IMPACTS OF INDOOR ENVIRONMENT ON COGNITIVE FUNCTION

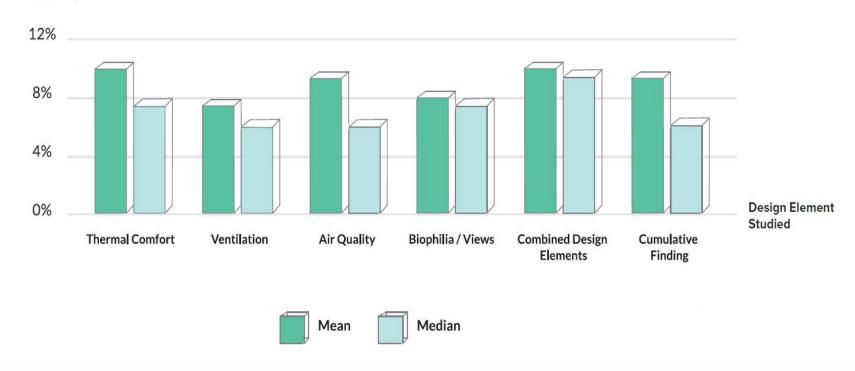


In all forms of cognitive function Green+ Environments scored higher than Conventional. Green+ included: low levels of CO2, VOCs and other toxins, thermally comfortable space, fresh ventilation and good lighting.



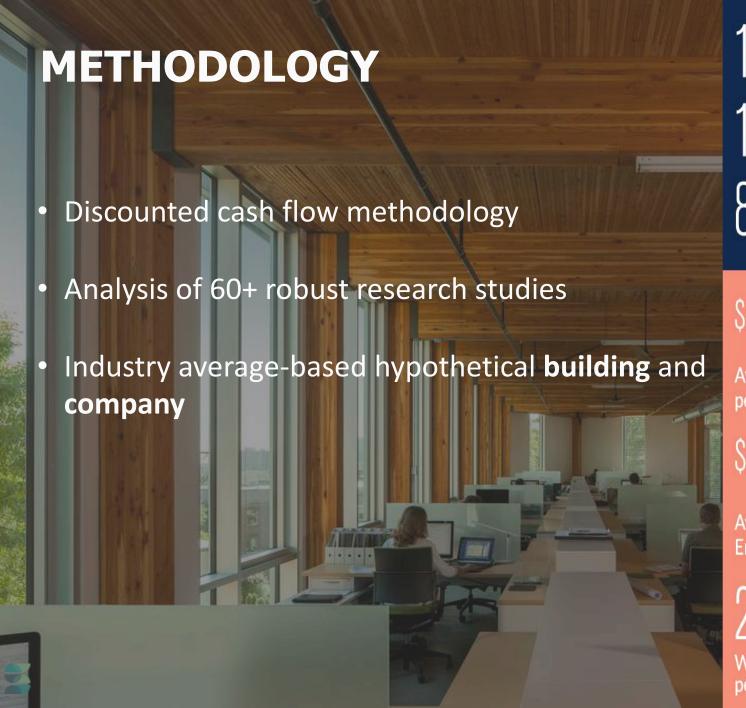
IMPACTS OF INDOOR ENVIRONMENT ON PRODUCTIVITY

Increase in Productivity



Current academic and industry research on the effects buildings have on employees are best narrowed down to **productivity**, **absenteeism**, and **retention**. Emerging studies are beginning to quantify how Healthy Buildings can impact occupants and improve the financial bottom line.





150,000 SF 183 SF_{per Person} 820 _{Employees}

\$540,000

Average Revenue per Employee

\$100,000

Average Fully-Burdened Employee Salary

265 Workdays per Year

Profit Margin

RESEARCH OUTLINE: PRODUCTIVITY + RETENTION + HEALTH



PRODUCTIVITY









HEALTH



ENHANCED PRODUCTIVITY BENEFIT — PER EMPLOYEE





\$540,000 \rightarrow \$16,200 \rightarrow \$1,620

Average Annual Revenue per Employee



3% Productivity Enhancement (due to High Performance Building design)

Average Revenue Gain per Employee



10% Profit Margin

Profit per **Employee**



820 Employees per Company



ENHANCED PRODUCTIVITY BENEFIT — PER COMPANY



Annual Profit

Due to Productivity Enhancement of 3% in High Performance Buildings



COST OF SEPARATION

RETENTION: Effort by a business to maintain a working environment that supports current staff in remaining with the company

SEPARATION: Workforce employees who voluntarily leave their position







INCREASED RETENTION BENEFIT — PER EMPLOYEE



10000 -

Average Employee Salary

X

90% Estimated Cost of Separation & 34% Average Separation Rate



\$30,600

Average Retention Cost per Employee

X

5% Reduction in Separation Rate (due to High Performance Building design)



\$1,530

Cost Savings per Employee



820 Employees per Company



INCREASED RETENTION BENEFIT — PER COMPANY



\$1.25Mor 2.83%

Annual Profit

Due to Increased Retention of 5% in High Performance Buildings



IMPROVED HEALTH BENEFIT — PER EMPLOYEE



\$2,038

 \rightarrow



^{\$2,446}



\$245

Average Revenue per Employee per Day



30% Annual Reduction in Average 4 Sick Days (due to High Performance Building Design)

Average Revenue Gain per Employee



10% Profit Margin

Profit per Employee



820 Employees per Company



IMPROVED HEALTH BENEFIT — PER COMPANY



\$201k or 0.45%

Annual Profit

Due to Absenteeism Reduction of 30% in High Performance Buildings





TOTAL BENEFIT OF HIGH PERFORMANCE BUILDINGS — PER EMPLOYEE



^{\$}1.33M

Annual Profit
Due to Enhanced
Productivity



\$1.25M

Annual Profit
Due to Increased
Retention



\$201K

Annual Profit
Due to Reduced
Absenteeism



TOTAL BENEFIT OF HIGH PERFORMANCE BUILDINGS — PER COMPANY



\$2.78M or 6.29%

Annual Profit

Due to Investment in High Performance Buildings



OCCUPIER SUMMARY

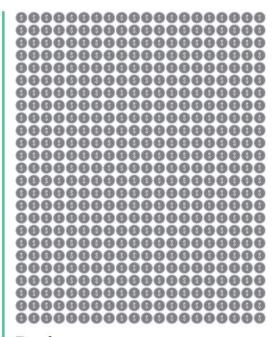








THE PROBLEM WITH OUR DESIGN PROCESS



Employees

\$1,000

Operations

\$100

000000000

Construction

\$10

Design

\$1

- 80% Remaining OpEx
- 20% Energy, water & waste





FINDINGS: WHAT ARE THE BARRIERS

Landlords state demand is low

Tenants not in the business of operating buildings

Knowledge gap

Lack departmental integration of goals

Lease negotiations do not incorporate highperforming priorities

Smaller companies do not have resources to focus on building operations



NECESSARY STEPS TO EFFECTIVELY DESIGN HIGH-PERFORMING BUILDINGS

Market demand for healthier and more efficient buildings grows

Local city policies implemented

Landlords deploy efficient design operating standards

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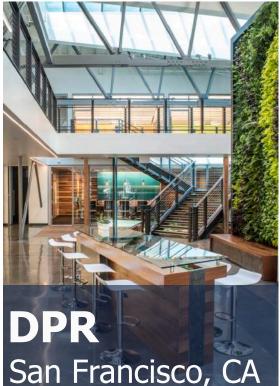
Deal makers recognize value of highperforming buildings and market to clients



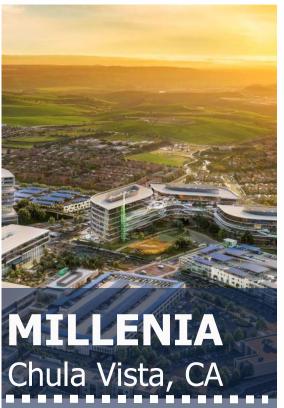




Alignment with mission: "From our largest cities to our last wild sanctuaries, we develop and promote solutions that protect the health and well-being of people, communities, and nature."



Alignment with corporate culture and brand, plus living lab: "The core value of being 'ever forward' is fulfilled through environmentally responsible spaces that benefit DPR employees and their communities."



Understanding the financial case through occupant benefits and talent attraction: "A challenge to create the world's most productive space for talent – an innovative space for innovators."



LANDLORDS LEADING THE WAY







Kilroy Real Estate Portfolio

- Fitwel, WELL, LEED and Energy Star Green Lease **Leaders Certifications**
- **Educate Brokers**

- **Delos Tenant Headquarters**
- WELL Platinum Certified
- Petal Certified through LBC
- LEED v4 Platinum Certified (pending)

Tower Real Estate Portfolio

- LEED, Energy Star, Fitwel, Climate Registry & Green Lease Leader certifications
- **Educate Brokers**



LOOKING BACK & MOVING FORWARD

What are your key takeaways?

- Acknowledge the state of the market
- Communicate value to the market
- Erect and maintain more high-performing buildings
- Correct misalignment within corporate structures

How will you use them to take action?

