GSA

CENTER FOR ACTIVE DESIGN®

INTERNATIONAL WELL BUILDING INSTITUTE™

Health in Buildings Partnerships and GSA's Vision for the Future

Welcome Poll

Slido.com: #HealthInBuildings; to access polls and Q&A

GSA's Vision for the Future

Our past informs our future(s)

2010 — Office Layout & Stress Denver Federal Center

2013 — Measuring connections between Light & Health

2018 — Office Layout, Physical Activity, & Stress

2019 — Measuring a Personal CO2 Bubble & Design Guideline for Circadian-effective Light (UL24480)

2020 — Dry Air & Stress

2021 — Total Workplace Scorecard, Enhancing Health with Indoor Air

2022 — Ventilation as Public Health Strategy; UL Design Guideline added to P-100

2023 — Testing Design Guidelines (UL24480) and piloting in GSA capital projects

GSA Tools Poll

Slido.com: #HealthInBuildings; Polls and Q&A

Promoting Health in Buildings

	ASHRAE 189.1-2017	DOD UFC 1-200-02 (DEC 2016)	FITWEL V2.1	GREEN GLOBES	GSA PBS-P100 (JUL 2018)	LEED V4.1	WELL V2
Air Quality and Control of Temperature **GP IV.** Enhance Indoor Environmental Quality: Ventilation and Thermal Comfort Provision of ventilation systems, control of pollutants, IAQ management, and controls for occupant thermal comfort	✓	✓	✓	✓	✓	✓	✓
Air Quality and Exposure to Mold and Mildew **GP IV.** Enhance Indoor Environmental Quality: Mold and Mildew Provide policies and strategies for moisture control	✓	✓	✓	✓	✓	✓	✓
Air Quality and Exposure to Radon **GP IV.** Enhance Indoor Environmental Quality: Radon Test for radon in buildings to mitigate high levels from occupied spaces	✓			✓	✓	✓	✓
Air Quality and Off-Gassing and Exposure to VOCs **GP IV.** Enhance Indoor Environmental Quality: Low-Emitting Materials Selection of low-emitting materials	✓	✓	✓	✓	✓	✓	✓
Air Quality and Plants **GP IV.** Enhance indoor Environmental Quality: Plants Provide access to indoor and outdoor plants		✓	✓			✓	✓
Air Quality in Occupied Buildings Under Construction **GP IV.** Enhance Indoor Environmental Quality: Indoor Air Quality during Building Alterations Control of indoor air quality and impact on occupants during building alterations of existing spaces	✓	✓	✓	✓		✓	✓

Promoting Health in Buildings

Sustainable Facilities Tool
U.S. General Services Administration

LEARN Sustainability Topics | PLAN Strategies & Tools | EXPLORE Virtual Facility | PROCURE Products & Services | APPLY Case Studies | TRAIN Career Planning

Log On

Facility Topics

The first step to a creating a high-performance facility is to learn about the components. Use the sections below to learn how you can reduce utility costs and improve occupant health in your facility. And be sure to check out our other Helpful Tools for everyday tasks.

CLIMATE

ENERGY

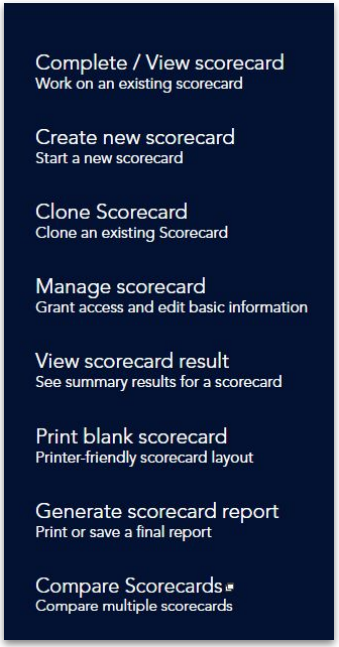
WATER

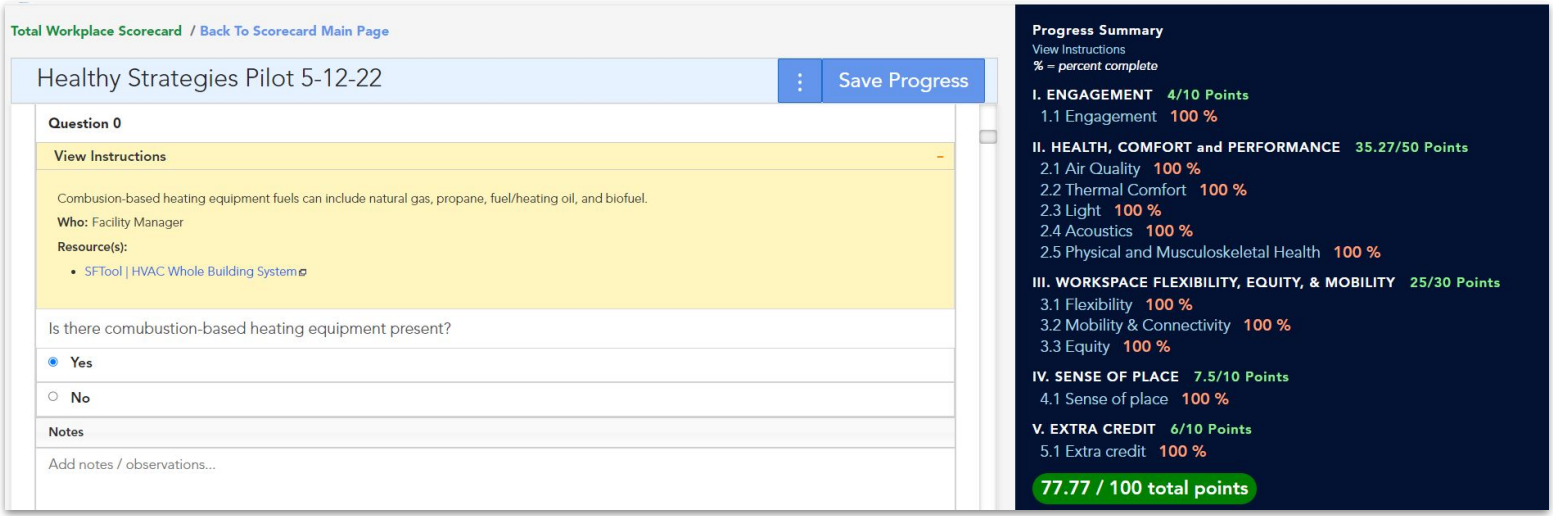
HEALTH

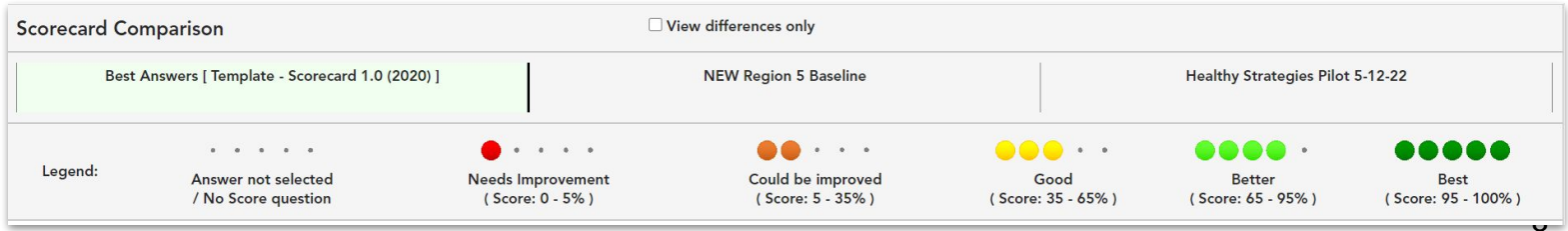
OTHER TOPICS

FEDERAL REQUIREMENTS

Total Workplace Scorecard: https://sftool.gov/TWS

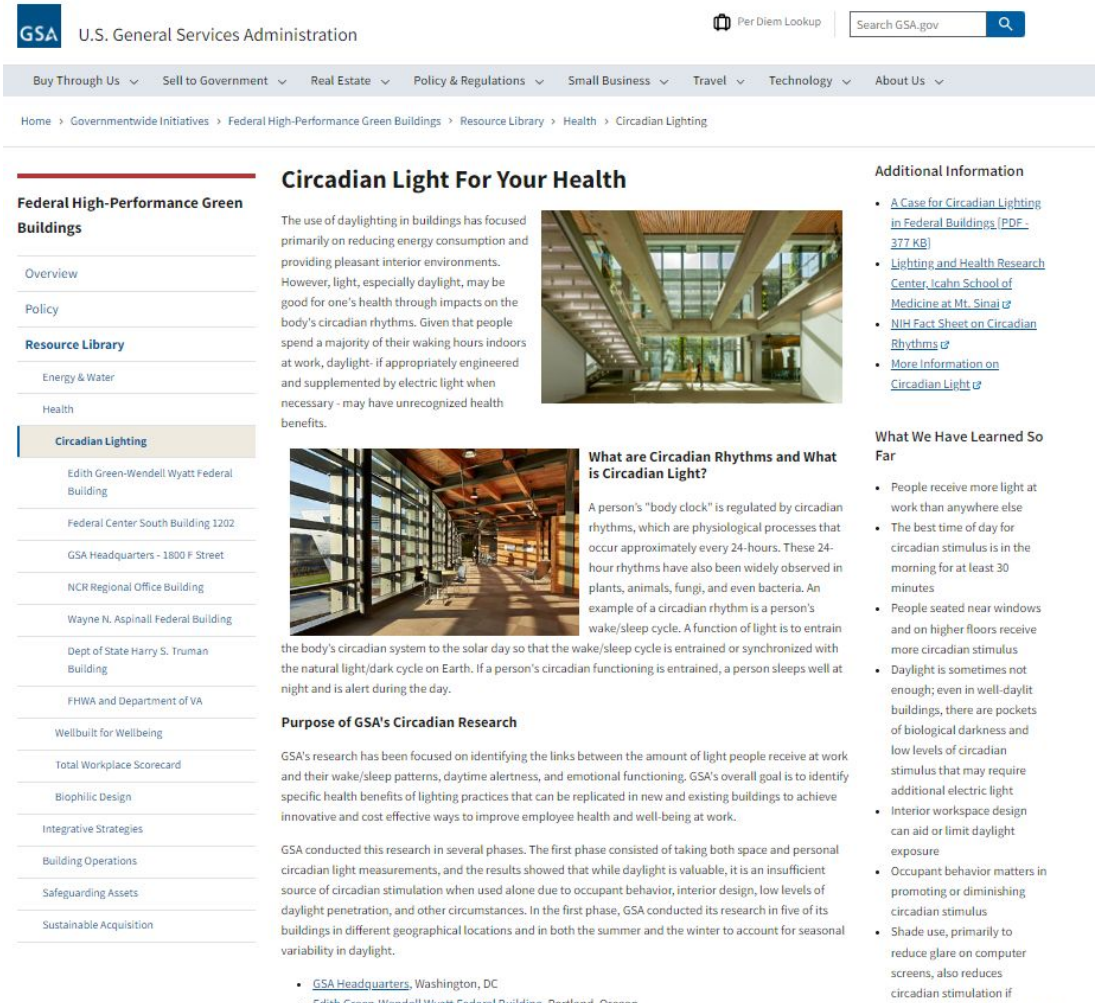






Circadian Lighting

- Links to GSA circadian-lighting research
- Learning videos
- Frequently asked questions



Background on Lighting and Circadian Rhythms

Enhancing Health with Indoor Air

- The quality of our indoor air is critical to our health, comfort, and performance
- Increasing ventilation rates beyond conventional design could reduce *absenteeism, inflammation, infection, and other symptoms of sick building syndrome!*

Lever 1
Provide More Fresh Air

Lever 2
Remove Outdoor Pollutants

Lever 3
Manage Thermal Conditions

Lever 4
Eliminate Indoor Contaminants

Perceptions Poll

Slido.com: #HealthInBuildings; Polls and Q&A

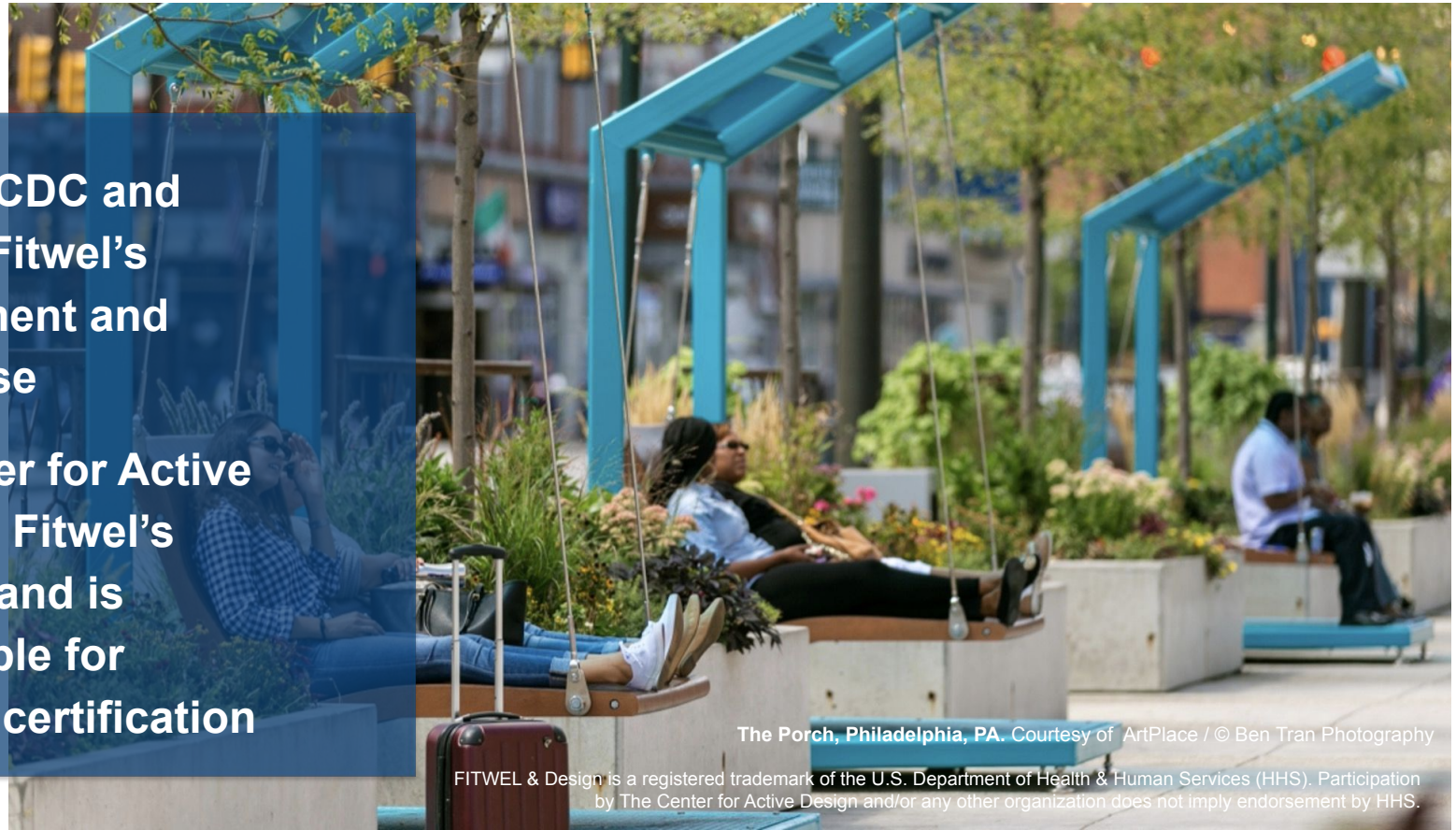
Certifications Poll

Slido.com - #HealthInBuildings

Development of Fitwel Standard

The U.S. CDC and GSA led Fitwel's development and pilot phase

The Center for Active Design is Fitwel's operator and is responsible for 3rd party certification

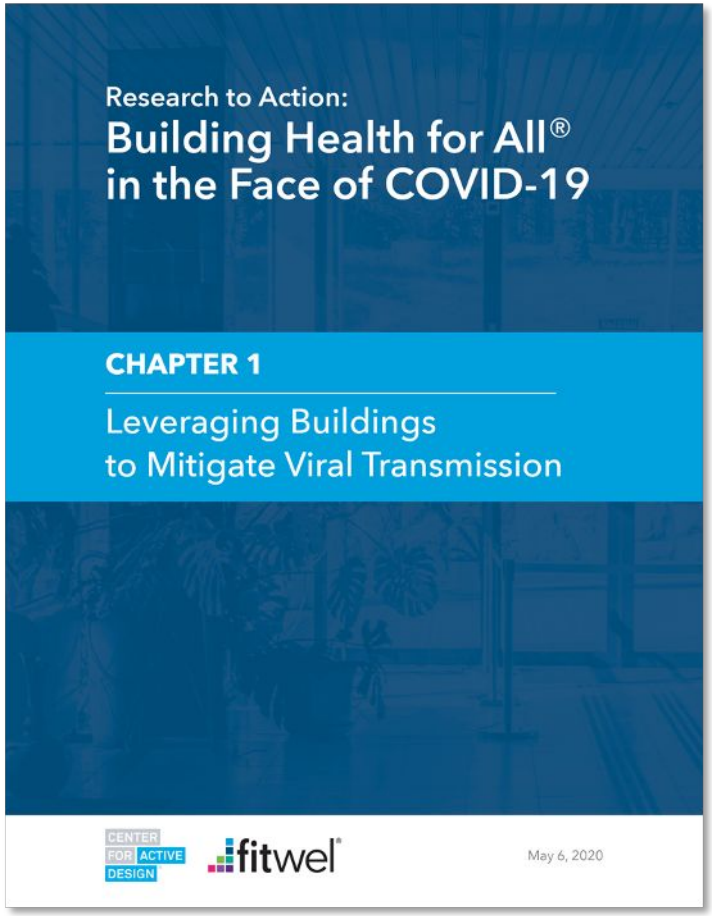


The Porch, Philadelphia, PA. Courtesy of ArtPlace / © Ben Tran Photography

Development of Fitwel Standard

- Impacts Surrounding Community Health
- Reduces Morbidity + Absenteeism
- Social Equity For Vulnerable Populations
- Increases Physical Activity
- Promotes Occupant Safety
- Instills Feelings Of Wellbeing
- Enhances Access to Healthy Foods

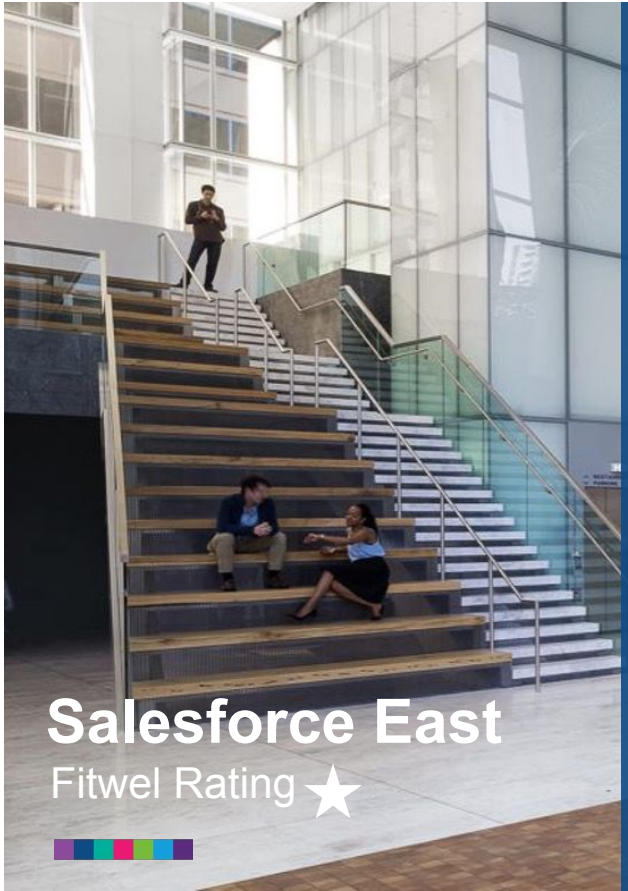
Ava NoMA Washington, DC
Photo Courtesy of AvalonBay Communities



Fitwel COVID-19 Response

- Developed a series of publications designed to offer evidence-based guidance to real estate sector.
- Transformed this research into the Fitwel Viral Response Module.
- Integrated findings and learnings into v3 Fitwel Standard.

Stay Connected



Website

www.fitwel.org

Mailing List

www.fitwel.org/contact

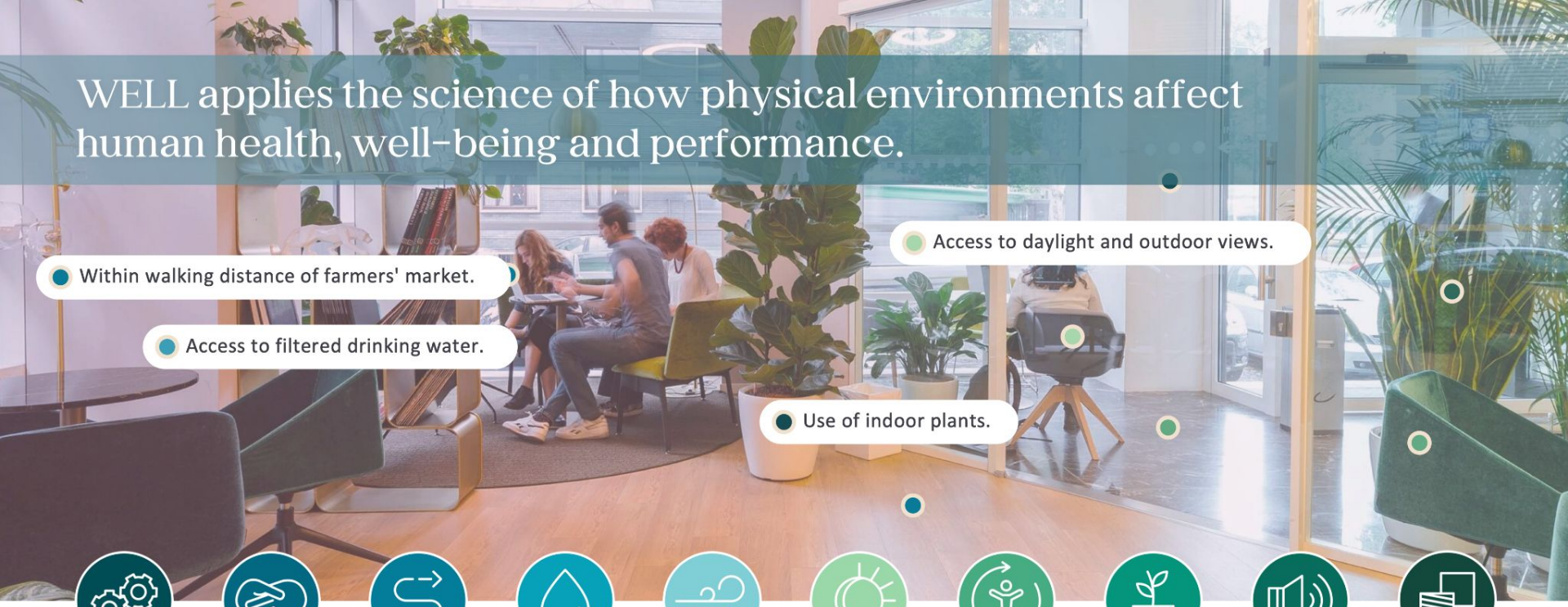
Twitter

@fitwel

LinkedIn

Fitwel Certification System

350 Mission Street.
San Francisco, CA, United States
Photo Courtesy of Kilroy Realty Corporation



7,000+
peer-reviewed studies and citations

20,000+
industry leaders and practitioners

30,000+
locations enrolled

500+
evidence-based interventions

IWBI Task Force on COVID-10 and other Infectious Respiratory Diseases

Building Health Movement: 400M to 4.7B from 2019-2023

12 IMPACT TOPICS

WWW.RESOURCES.WELLCERTIFIED.COM/TOOLS

Investing in health pays back.

Research shows that companies that invest in health and well-being strategies can benefit from enhanced performance and increased financial returns.

7.7%
higher rents per sq ft
in certified healthy buildings [MIT]

$115
per sq ft in 10-year NPV
for healthy, high performing buildings [Stok]

8%
increase in employee performance
associated with improved air quality [Harvard]

Download IWBI's Research Review, featuring nearly 60 independent studies: **WEAREWELL.COM/HEALTH-PAYS-BACK**

The impact of WELL

A new study published in *Building and Environment* found that occupants in WELL Certified spaces report **improved workplace satisfaction**, **increased levels of productivity** and **gains in perceived health and well-being**.

Research Spotlight

The WELL Factor: Understanding the Impact of WELL Certification

A new study in the *Journal of Building and Environment* finds WELL Certification boosts occupant perceived satisfaction, health, well-being and productivity

Brief Synopsis

In the largest and most comprehensive research of its kind, a newly published peer-reviewed study in the *Journal of Building and Environment* found that occupants in WELL Certified spaces report improved workplace satisfaction, increased levels of productivity and gains in their health and well-being. The study analyzed the impact of WELL Certification using more than 1,300 pre- and post-occupancy survey responses from six companies in North America with analyses conducted at both the aggregate and company level. Specifically, the study showed WELL Certification improved overall occupant satisfaction by nearly 30%, as well as occupant perceived well-being scores by 26%, reported mental health scores by 10% and productivity gains by 10 median points.

In the *Journal of Building and Environment*, September 2022

Title:

Impact of WELL Certification on Occupant Satisfaction and Perceived Health, Well-being, and Productivity: A Multi-Office Pre-Versus Post-Occupancy Evaluation

Authors:

Nasim Ildiri, University of Colorado Boulder
Heather Bazille, Cornell University
Yingli Lou, University of Colorado Boulder
Kathryn Hinkelman, Pennsylvania State University
Whitney A. Gray, International WELL Building Institute
Wangda Zuo, Pennsylvania State University and National Renewable Energy Laboratory

Key Findings

Using extensive pre- and post-occupancy survey data, the analysis was able to assess the impact of WELL Certification on the people inside a space when compared to their experiences before certification. The study comprehensively analyzed the impacts of WELL Certification on

30% ↗
in overall workplace satisfaction

10-point ↗
in reported productivity scores

26% ↗
in reported well-being scores

10% ↗
in overall mental health

Table A.3
WELL performance verification results for required WELL features (preconditions) by company.

Parameter	WELL Feature	Measurement (unit)	Threshold	Company					
				A	B	C	D	E	F
Indoor Air Quality	01 Air Quality Standards	Formaldehyde (ppb)	<27	5.2–5.7	25	6–7	15.97–21.4	12–23	10.4–11
		TVOC (μg/m^3)	<500	190–260	340–460	240–330	450–460	130–370	23–38
		Carbon monoxide (ppm)	<9	0	0	0	0	0.1–0.8	0.4–0.6
		PM2.5 (ug/m3)	<15	1.5–2	0.2–0.23	1	0.2–0.6	3.68–5.49	4.7–5.4
		PM10 (ug/m3)	<50	2	5.64–7.87	1	7.4–14.6	12.49–37.04	18–30.7
		Ozone (ppb)	<51	0	0	2–3	0	0–7	<10
		Radon (pCi/L)	<4	N/A	N/A	N/A	N/A	<0.6 ± 0.2	N/A
Thermal Comfort	76 Thermal Comfort	Dry Bulb Temperature	ASHRAE 55-2013	70.2–72.9	73.7–75.2	72.5–76.3	–	72.1–73.5	–
		Mean Radiant Temperature	ASHRAE 55-2013	71.2–73.4	N/A	N/A	N/A	N/A	N/A
		Relative Humidity	ASHRAE 55-2013	61–62.4	37.4–39.5	17.3–22	–	49.8–59.1	–
Lighting	53 Visual Lighting Design	Average ambient light intensity (lux)	≥215	567	419	514	628	292	376
Acoustics	75 Internally Generated Noise[†>†]	Open office spaces and lobbies noise criteria (NC)	≤40	35–48	38	40	37	36	35
		Enclosed offices noise criteria (NC)	≤35	N/A	29	30	17–36	23–36	35
		Conference and breakout rooms noise criteria (NC)	≤30	33–36	30–39	28	19–32	23–28	35–40

Featuring major findings from nearly 60 studies

MIT | HARVARD T.H. CHAN SCHOOL OF PUBLIC HEALTH | Wharton University of Pennsylvania | Pacific Northwest National Laboratory

Business is blooming.

01

Healthy Buildings Support a Healthy Economy

Every day, the economy faces steep financial losses due to adverse workplace conditions that affect health and well-being, mental health, productivity and absenteeism.

According to research, these losses create a pervasive drag on national GDP. For example, researchers found that the **U.S. loses $150 billion every year from sickness-related presenteeism**, which is equivalent to more than 70% of the total cost of lost productivity.[32] The U.S. also endures the highest economic losses associated with poor sleep — up to $411 billion a year, or the equivalent of 2.28% of GDP.[33] In the U.K., employers lose $30 billion a year from poor employee mental health, which negatively affects absenteeism, productivity and recruitment.[34] In terms of missed work, the **U.S. loses more than 175 million workdays** and experiences another 121 million workdays with restricted activity because of four common respiratory illnesses: the common cold, influenza, pneumonia and bronchitis.[35] **In Australia, presenteeism is costing the country $26 billion a year**, while absenteeism costs the country $7 billion a year.[36]

Realizing Economy-wide Benefits

Buildings – the places where each of us spends roughly 90% of our lives – must be at the heart of the solution to foster wellness and deliver positive health outcomes at scale, not to mention the many economic benefits for organizations

WE ARE **WELL**

wellcertified.com

Clean Air in Buildings Challenge

Future(s) Poll

Slido.com: #HealthInBuildings; Polls and Q&A

The future(s) of health in buildings

Next steps

GSA's Buildings and Health Research Program

- May 23: Health in Buildings Partnerships
- June 27: Circadian Lighting
- July 25: Enhancing Ventilation and Mitigating Dry Air
- Aug 22: Wellbuilt for Wellbeing
- Sept 26: USGBC - Government Health Summit
- Oct 24: NAS Health in Buildings Roundtable Scopeing

This series is a call for co-sponsors - Health in Buildings Roundtable!

- Government agencies, companies, research organizations, non-profit groups, etc
- Pilot, measure, and evaluate health-enhancing strategies
- Share best practices and data between partners

Thank you! Questions?

Slido.com - #HealthInBuildings