

A grayscale background image showing several pairs of hands in business attire, gathered around a table, looking at and pointing to documents. The scene suggests a professional meeting or collaborative work environment.

Confronting COVID-19: Everything You Need to Know about Healthy Buildings – Q & A Session

Urban Land Institute | April 21, 2020



URBAN LAND INSTITUTE

Provide leadership in the responsible use of land and in creating and sustaining thriving communities worldwide

BUILDING HEALTHY PLACES

Leveraging the power of ULI's global networks to shape projects and places in ways that improve the health of people and communities



Convenings | Research | Best Practices | Education

ULI Goals

Help ULI members:

- Understand the role they can play in slowing the spread of the disease
- Gain business and planning insights for navigating the crisis
- Help mitigate adverse impacts on vulnerable people

www.uli.org/covid19

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Upcoming Confronting COVID-19 Webinars

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Find information from past ULI webinars on Knowledge Finder.

www.uli.org/covid19

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Speakers: Healthy Buildings Q&A Session



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Healthy Buildings

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 **HARVARD T.H. CHAN**
SCHOOL OF PUBLIC HEALTH

 **HARVARD**
BUSINESS SCHOOL

WHY ARE WE **IGNORING** THE

90%?



WE SPEND
 **90%**
of
**OUR TIME
INDOORS**¹



 **10%**
OUTDOORS¹

Allen JG, MacNaughton P, Satish U, Santanam S, Vallarino J, Spengler JD. 2015. Associations of Cognitive Function Scores with Carbon Dioxide, Ventilation, and Volatile Organic Compound Exposures in Office Workers: A Controlled Exposure Study of Green and Conventional Office Environments.

Environ Health Perspect DOI: 10.1289/ehp.1510037

1. US EPA Region 1. (2013). Questions About Your Community: Indoor Air. Retrieved from <http://www.epa.gov/region1/communities/indoorair.html>



THE IMPACT OF GREEN BUILDINGS ON COGNITIVE FUNCTION

24

PARTICIPANTS



OVER



2 TESTS

1

Multivariable test for building types:

Conventional



i.e., Typical Office

Green



Low VOC

Enhanced Green



Low VOC and
High Ventilation

2

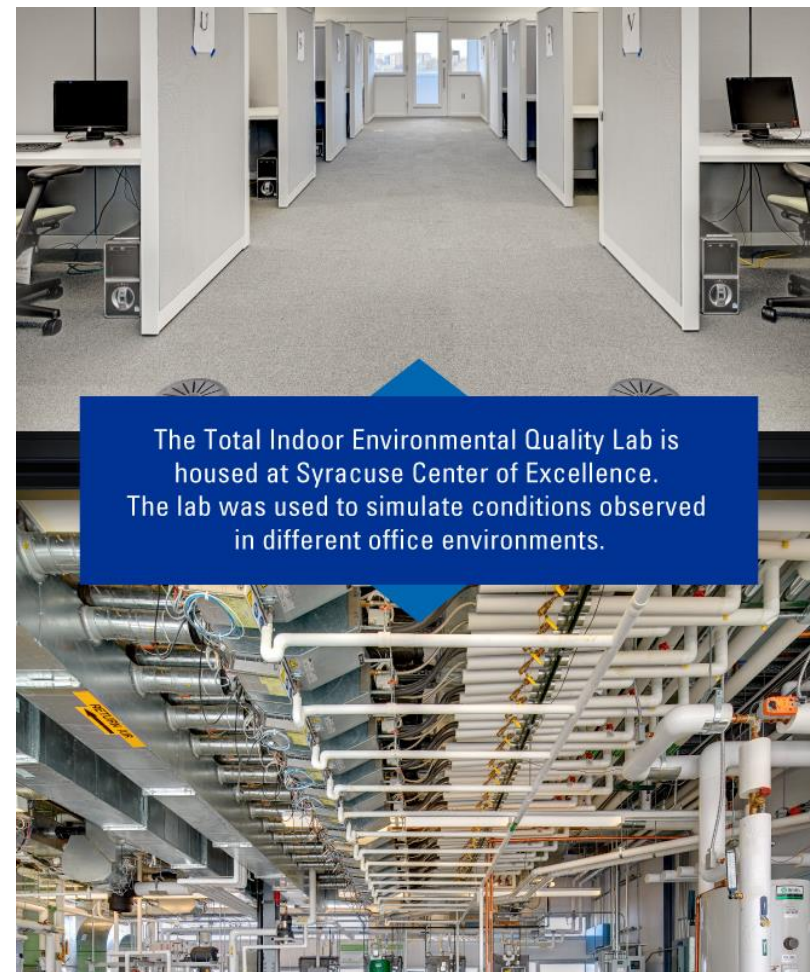
Single-variable test for carbon dioxide:



Low CO₂

Moderate CO₂

High CO₂



The Total Indoor Environmental Quality Lab is housed at Syracuse Center of Excellence. The lab was used to simulate conditions observed in different office environments.

Alice Hamilton, 1942

“From the first I became convinced that what I must look for was lead dust and lead fumes, **that men were poisoned by breathing poisoned air**, not by handling their food with unwashed hands. Nowadays that **fact has been so strongly established by experimental proof that nobody would think of disputing it**. But in 1910 and for many years after, the firm (and comforting) belief of foremen and employers was that if a man was poisoned by lead it was because he did not wash his hands and scrub his nails, although a little intelligent observation would have been enough to show its absurdity.”

-Alice Hamilton, in *Exploring the Dangerous Trades*





“

Cleanliness, **fresh air from open windows**, are the only defence a true nurse either asks or needs.”

I have seen to be most effectual:
open air during the greater part of
the day... [and] **bedroom ventilation**
at night.”

Florence Nightingale (1860)

Buildings that fight disease...

...and Promote Health

The New York Times

Your Building Can Make You Sick or Keep You Well

Proper ventilation, filtration and humidity reduce the spread of pathogens like the new coronavirus.

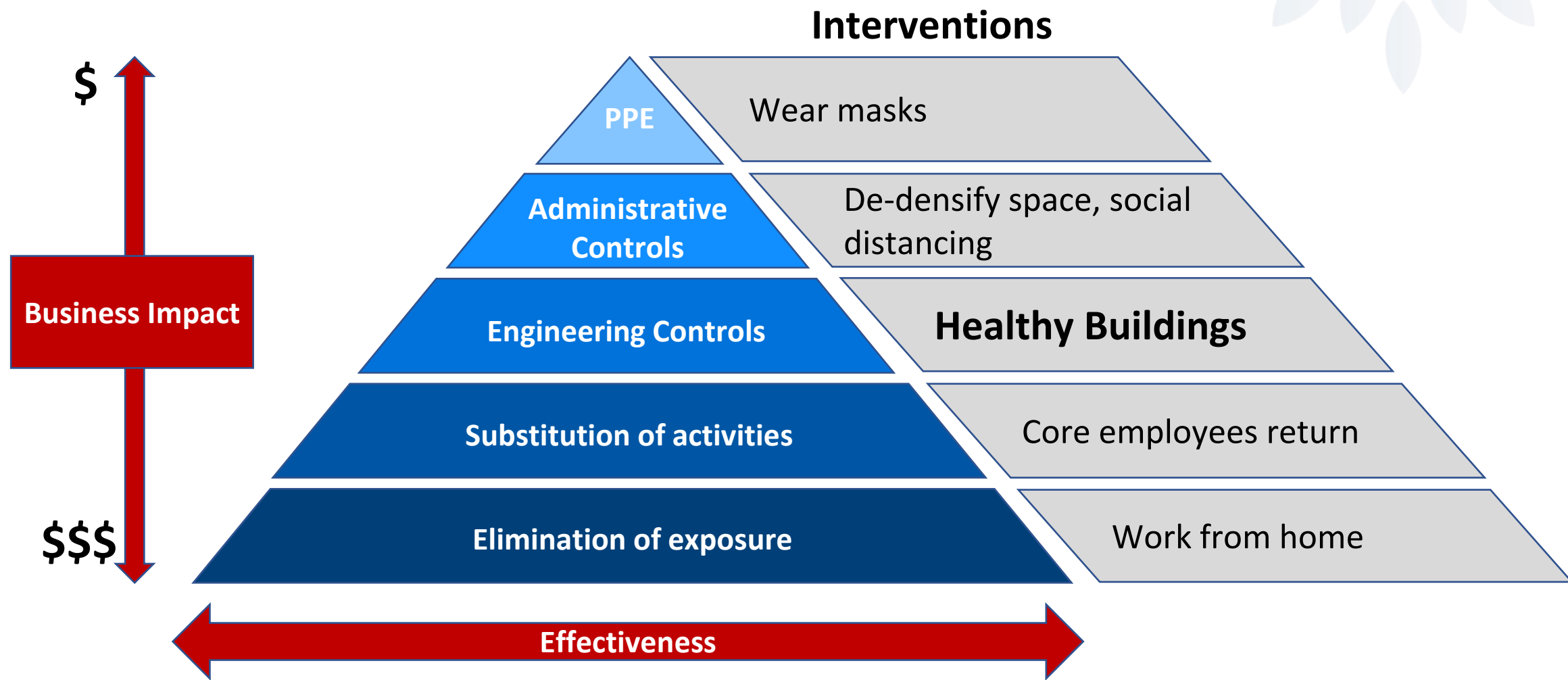
By Joseph G. Allen

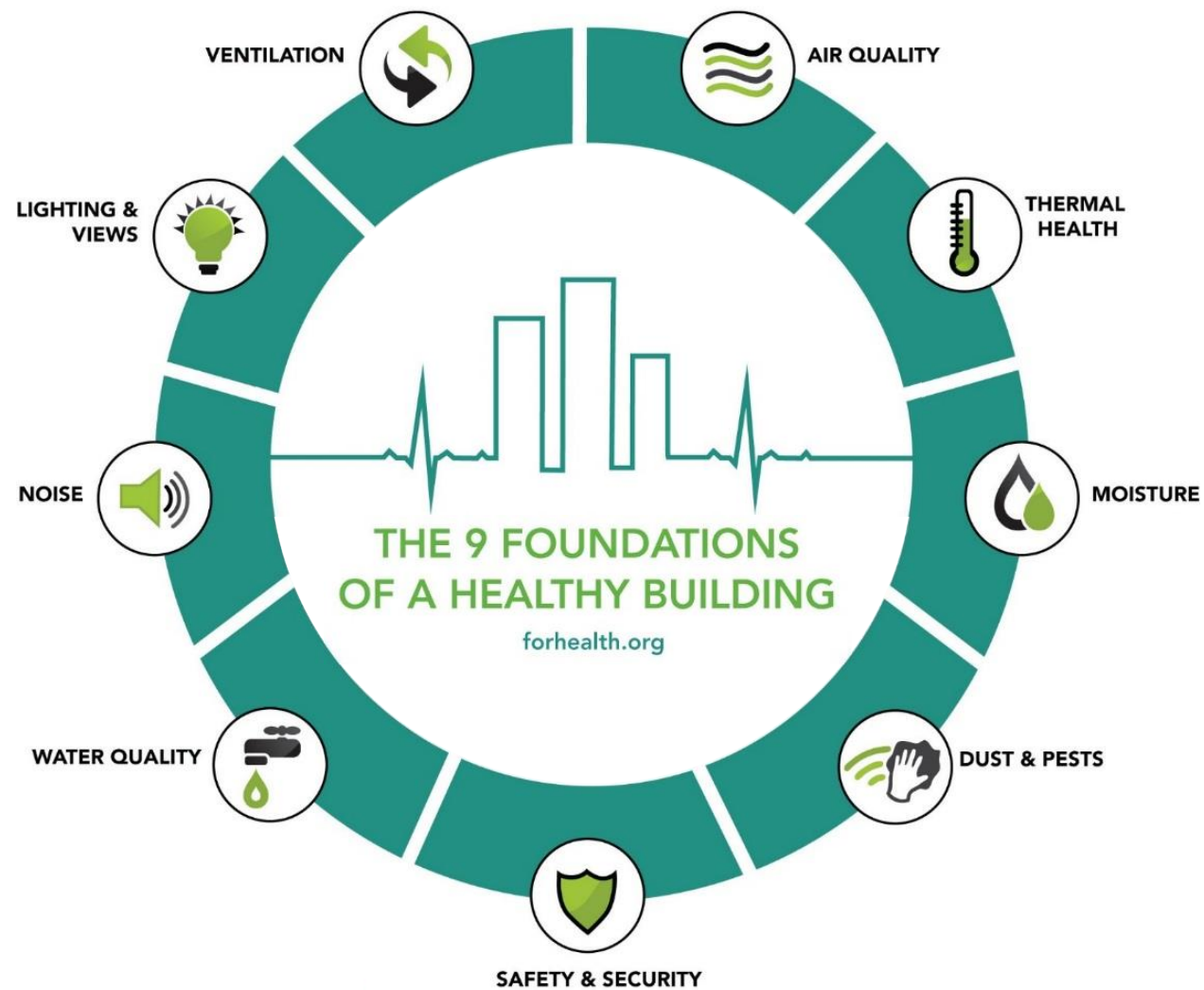
Dr. Allen is director of the Healthy Buildings program at Harvard T.H. Chan School of Public Health.



HIERARCHY OF CONTROLS

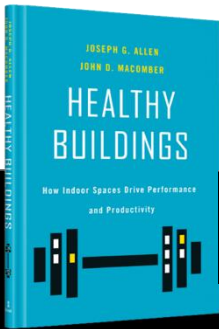
Intervention effectiveness and business cost





The new minimum?

Healthy Buildings



The Global Mega-Changes Shaping Our World, Our Buildings, and Us

1

CHANGING POPULATIONS



2

CHANGING CITIES



3

CHANGING RESOURCES



4

CHANGING CLIMATE



5

CHANGING ROLE OF PRIVATE SECTOR



6

CHANGING DEFINITION OF HEALTH



7

CHANGING BUILDINGS



8

CHANGING WORK



9

CHANGING TECHNOLOGY



10

CHANGING VALUES



What's now, and What's Next?

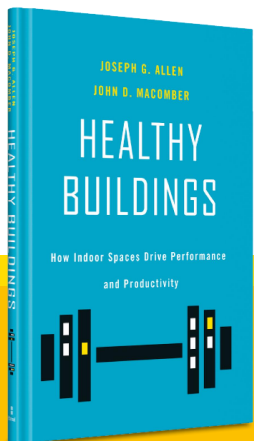
Employees are interviewing your building

““ Coronavirus is finally showing the company how flawed it is with outdated technology and management style...what is the point of having 2,000 to 3,000 people in an office with circulated air?”

“**How is this much different than being on a virus-infected cruise ship** for 8+ hours every day, five days a week?”

““ Management has taken the lead in handling the COVID-19 situation with the **health and safety of it's entire workforce of the utmost importance.**”

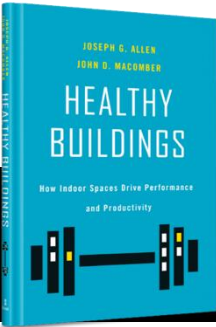
“... in the face of the current COVID-19 situation, **I couldn't be happier** with how this entire company is responding.”



Healthy Buildings: How Indoor Spaces Drive Performance and Productivity
by Joseph G. Allen and John D. Macomber

How will you know it's working?

“The Pulse”



Health Performance Indicators

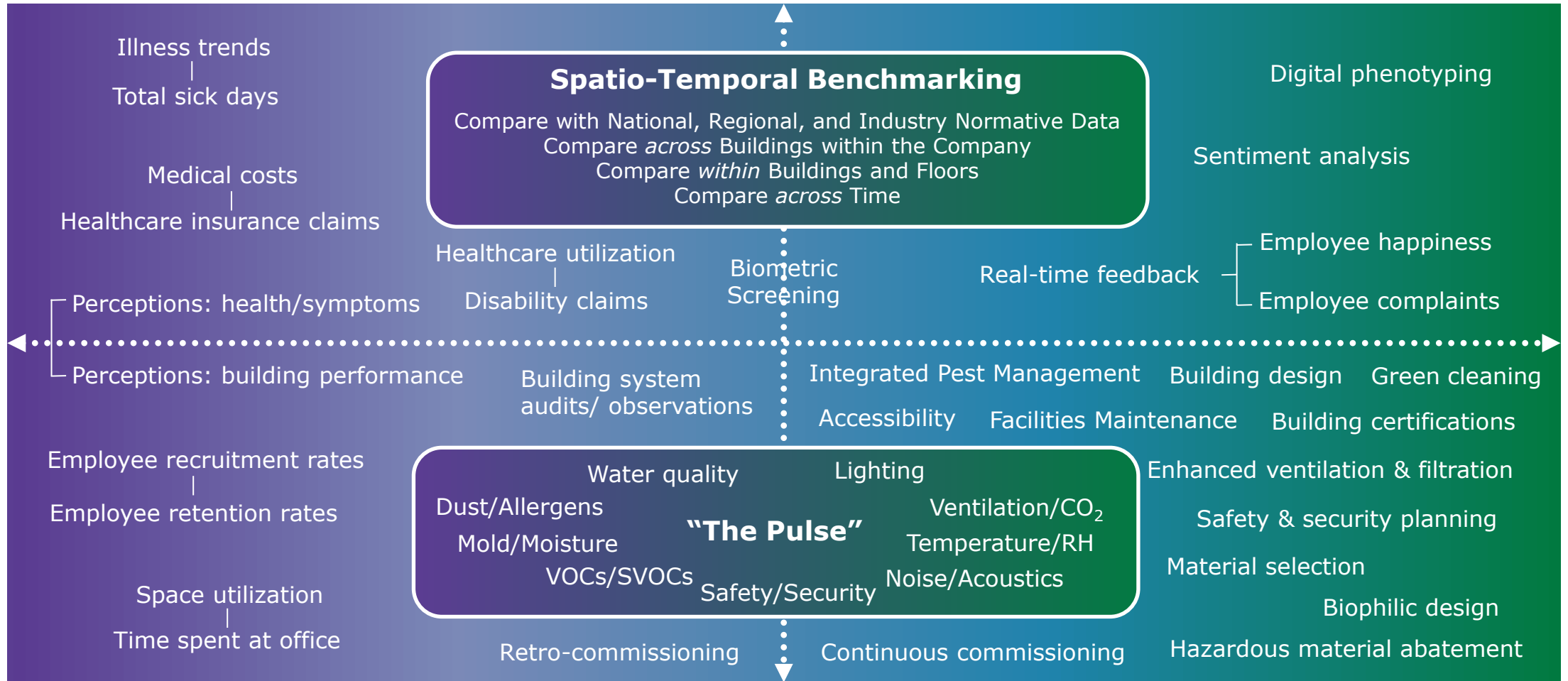
Moving from KPIs to HPIs

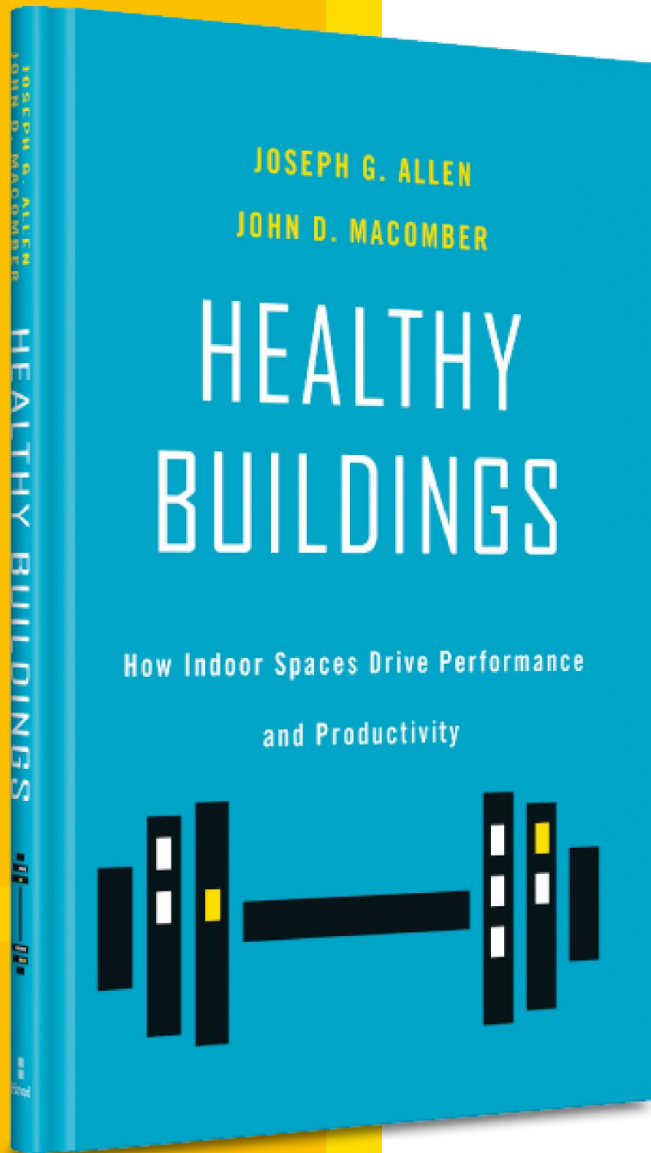
LAGGING ("after the fact")

LEADING ("before impact")

DIRECT
("the people")

INDIRECT
("the building")





Conclusion

Buildings, Business, Health, and Wealth

“ We need a new generation of humanitarian design ideas underpinned by scientific research.”



- LORD NORMAN FOSTER
Architect

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Q&A



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A grayscale background image showing several people in a meeting. One person on the left is pointing at a document on a table. Another person on the right is holding a pen. The image is slightly blurred and has a dark overlay.

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Thank you!

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