

# Webinar

## Confronting COVID-19: Everything You Need To Know About Healthy Buildings

Date: April 21, 2020

00:00:00 --> 00:00:03: Hi everyone, I'd like to welcome you to this web  
00:00:03 --> 00:00:04: and R.  
00:00:04 --> 00:00:06: I've got 102 so I think we'll go ahead and  
00:00:07 --> 00:00:07: get started.  
00:00:07 --> 00:00:09: Thank you for being here.  
00:00:09 --> 00:00:13: I'm Rachel Mcclary and I'm senior vice president at the  
00:00:13 --> 00:00:15: Urban Land Institute. I'm Chudan.  
00:00:15 --> 00:00:18: On behalf of you'll, I'd like to welcome you to  
00:00:18 --> 00:00:21: this global webinar on the coronavirus.  
00:00:21 --> 00:00:23: Human beings spend up to 90%  
00:00:23 --> 00:00:26: of our lives indoors, so it's no surprise that the  
00:00:26 --> 00:00:27: buildings where we live,  
00:00:27 --> 00:00:30: work, and play have a major impact on our health,  
00:00:30 --> 00:00:33: productivity, and overall well being.  
00:00:33 --> 00:00:35: And in the era of the coronavirus,  
00:00:35 --> 00:00:38: healthy buildings are more important than ever.  
00:00:38 --> 00:00:42: Evidence is emerging that building strategies play an  
important role  
00:00:42 --> 00:00:45: in reducing the pace of the spread of the virus  
00:00:45 --> 00:00:48: and healthy buildings will continue to be important as people  
00:00:48 --> 00:00:51: contemplate a return to office is an open San.  
00:00:51 --> 00:00:55: Other buildings, so today we'll hear from 2 leading experts  
00:00:55 --> 00:00:59: on healthy buildings and will spend a lot of time  
00:00:59 --> 00:01:00: answering your questions.  
00:01:00 --> 00:01:04: The Urban Land Institute is a research and education  
nonprofit  
00:01:05 --> 00:01:09: whose mission is to provide leadership in the responsible use  
00:01:09 --> 00:01:13: of land and in creating and sustaining thriving communities  
worldwide.  
00:01:13 --> 00:01:16: If you're new to you'll I welcome you.

00:01:16 --> 00:01:20: Will I launch the building Healthy Places Initiative in 2013  
00:01:20 --> 00:01:22: out of a recognition that place?  
00:01:22 --> 00:01:25: Shapes health and through the years we've worked to  
leverage  
00:01:25 --> 00:01:29: the power of utilized global networks to shape projects in  
00:01:29 --> 00:01:31: places in ways that improve the health of people and  
00:01:31 --> 00:01:35: communities. And it worked with thousands of you line  
members  
00:01:35 --> 00:01:38: and their partners to explore the intersections of health,  
00:01:38 --> 00:01:39: social equity and real estate.  
00:01:39 --> 00:01:42: It is become clear in the past two months at  
00:01:42 --> 00:01:45: the world and the real estate industry are being forever  
00:01:45 --> 00:01:46: changed by this pandemic.  
00:01:46 --> 00:01:48: And as we emerge from this crisis,  
00:01:48 --> 00:01:52: many things will be different and expectations and  
perspectives will  
00:01:52 --> 00:01:53: shift.  
00:01:53 --> 00:01:55: How will potential tenants evaluate buildings?  
00:01:55 --> 00:01:58: What will investors look for in the buildings that they  
00:01:58 --> 00:02:01: are investing in and what role will buildings and real  
00:02:01 --> 00:02:05: estate companies guided by leaders annually members like  
all of  
00:02:05 --> 00:02:08: you, play in forging a brighter and healthier future for  
00:02:08 --> 00:02:11: the United States in the world.  
00:02:11 --> 00:02:13: We know that this is a very challenging time for  
00:02:13 --> 00:02:14: you.  
00:02:14 --> 00:02:17: My members are partners and their colleagues and families.  
00:02:17 --> 00:02:19: You lie is committed to doing all we can to  
00:02:19 --> 00:02:21: support our members and partners.  
00:02:21 --> 00:02:25: As you navigate this difficult and ever changing New world,  
00:02:25 --> 00:02:28: we at you lie and building healthy places have been  
00:02:28 --> 00:02:31: so grateful for your engagement and your insights and we  
00:02:31 --> 00:02:33: have looked to all of the work that you are  
00:02:33 --> 00:02:35: doing to help your tenants,  
00:02:35 --> 00:02:38: colleagues and communities with an appreciation.  
00:02:38 --> 00:02:42: History and our current experience has shown that in the  
00:02:42 --> 00:02:43: midst of disaster,  
00:02:43 --> 00:02:47: people become altruistic, resourceful and brave and in  
disaster people  
00:02:47 --> 00:02:50: can find community and purpose and it is the profound  
00:02:50 --> 00:02:54: hope of building healthy places that out of this Crucible  
00:02:54 --> 00:02:57: this country can forge a future that is more fair,  
00:02:57 --> 00:03:02: more just, and more filled with opportunity for all.

00:03:02 --> 00:03:04: Our goal with this web and R series.

00:03:04 --> 00:03:06: Another coronavirus information and programming,

00:03:06 --> 00:03:09: is to give you insights and information that will help

00:03:09 --> 00:03:12: you do all you can to help prevent the spread

00:03:12 --> 00:03:12: of the virus.

00:03:12 --> 00:03:16: To navigate the business and planning impacts and to help

00:03:16 --> 00:03:19: mitigate the impact of this crisis on communities and

00:03:19 --> 00:03:19: vulnerable

00:03:19 --> 00:03:19: people.

00:03:19 --> 00:03:22: We hope that the information in this web and R

00:03:22 --> 00:03:25: and other resources from you will I will help you

00:03:25 --> 00:03:28: as you lie Members and their partners to assist cities

00:03:28 --> 00:03:31: and communities in navigating the pandemic and rebuild it in

00:03:31 --> 00:03:32: ways afterwards.

00:03:32 --> 00:03:36: That foster social equity and provide opportunity for all so

00:03:36 --> 00:03:39: you lie is compiling information relevant to the real estate

00:03:40 --> 00:03:45: industry on our issue page at [ui.org/COVID-19](http://ui.org/COVID-19) and we

00:03:45 --> 00:03:48: continue

00:03:45 --> 00:03:48: to update the Urban Land Magazine web page.

00:03:48 --> 00:03:52: All of our pages are updated regularly and include links

00:03:52 --> 00:03:54: to a range of UI resources.

00:03:54 --> 00:03:56: So we're sharing this web and R and all related

00:03:56 --> 00:04:00: content in the spirit of information sharing and education,

00:04:00 --> 00:04:03: please see the statement for further important disclaimers.

00:04:03 --> 00:04:06: So today's webinar is focused on healthy buildings.

00:04:06 --> 00:04:09: It will feature a robust Q&A session with our speakers.

00:04:09 --> 00:04:13: Upcoming webinars in our series on the pandemic include

00:04:13 --> 00:04:14: the

00:04:13 --> 00:04:14: one next week,

00:04:14 --> 00:04:16: resiliency and the new normal,

00:04:16 --> 00:04:18: which will features speakers Jonathan Rosemark,

00:04:18 --> 00:04:21: Welsman, Broad Oxirane and Anna Lynch,

00:04:21 --> 00:04:24: and after that we'll be exploring parks and open spaces.

00:04:24 --> 00:04:26: The following week will clean some insights.

00:04:26 --> 00:04:29: Formula State leaders in Asia and all webinars are linked

00:04:29 --> 00:04:34: to on the [ui.org/COVID-19](http://ui.org/COVID-19) issue page and archives and can

00:04:34 --> 00:04:35: be found on Knowledge Finder.

00:04:35 --> 00:04:38: Webinars are being recorded on a recording of this webinar

00:04:38 --> 00:04:41: will be shared by email with registrants and will also

00:04:41 --> 00:04:44: be posted on the web and content from past few.

00:04:44 --> 00:04:47: Live webinars can be found on Knowledge Finder.

00:04:47 --> 00:04:50: Next, slide so for today's webinar format is a little

00:04:50 --> 00:04:51: different from usual,

00:04:51 --> 00:04:54: so we'll have a brief presentation from our speakers,  
00:04:54 --> 00:04:58: followed by a good chunk of time answering your questions  
00:04:58 --> 00:04:59: about healthy buildings,  
00:04:59 --> 00:05:02: strategies for controlling the spread of the disease,  
00:05:02 --> 00:05:05: and what we can expect from real estate responses in  
00:05:05 --> 00:05:06: the future.  
00:05:06 --> 00:05:07: So here are speakers for today.  
00:05:07 --> 00:05:10: Joe and John recently coauthored a new book,  
00:05:10 --> 00:05:14: Healthy buildings, How indoor Spaces drive performance and  
00:05:14 --> 00:05:16: Productivity,  
00:05:16 --> 00:05:19: which is being released today.  
00:05:16 --> 00:05:19: Joseph Allen, as an assistant professor at the Harvard TH.  
00:05:19 --> 00:05:23: Chan School of Public Health who began his career  
00:05:23 --> 00:05:26: conducting  
00:05:26 --> 00:05:30: forensic health investigations and sick buildings at Harvard.  
00:05:30 --> 00:05:33: He directs the Healthy Buildings Program and his work has  
00:05:33 --> 00:05:36: been featured widely in the popular press and he has  
00:05:36 --> 00:05:38: helped shed light on important virus related questions in a  
00:05:38 --> 00:05:42: number of articles in recent weeks.  
00:05:38 --> 00:05:42: More information on his research can be found at  
00:05:42 --> 00:05:44: [www.fourhealth.org](http://www.fourhealth.org).  
00:05:42 --> 00:05:44: John Mccumber is a Co.  
00:05:44 --> 00:05:47: Author of the Healthy buildings book with Joanne is a  
00:05:47 --> 00:05:51: senior lecturer in the finance unit at Harvard Business  
00:05:51 --> 00:05:55: School.  
00:05:51 --> 00:05:55: His professional background includes leadership of real  
00:05:55 --> 00:06:00: estate,  
00:05:55 --> 00:06:00: construction, construction services and information  
00:06:00 --> 00:06:02: technology businesses at HBS.  
00:06:00 --> 00:06:02: Mr Mccumber is engaged in the business,  
00:06:02 --> 00:06:06: an environment initiative and social enterprise initiative,  
00:06:06 --> 00:06:08: and he is a longtime you'll I member,  
00:06:08 --> 00:06:10: an leader. So thank you,  
00:06:10 --> 00:06:12: Joanne John. You can take it away.  
00:06:12 --> 00:06:15: All great. Welcome everybody an Rachel thank you,  
00:06:15 --> 00:06:19: terrific introduction and you know I I'm an optimist and  
00:06:19 --> 00:06:22: so I'm really glad you started with that comment about.  
00:06:22 --> 00:06:24: Resiliency in the time of crisis.  
00:06:24 --> 00:06:28: I'm a believer in our the resiliency and human spirit  
00:06:28 --> 00:06:31: here and our ability to come through this together.  
00:06:31 --> 00:06:33: John and I are really glad to be part of  
00:06:33 --> 00:06:34: this.  
00:06:34 --> 00:06:36: This web and R in the building,

00:06:36 --> 00:06:38: Healthy Places series. And yeah,  
 00:06:38 --> 00:06:39: our book came out today.  
 00:06:39 --> 00:06:42: It's wonderful to see John to be talking with him,  
 00:06:42 --> 00:06:45: collaborator, colleague and good friends.  
 00:06:45 --> 00:06:48: So this is a delight to participate today.  
 00:06:48 --> 00:06:49: So thank you and John.  
 00:06:49 --> 00:06:52: I share the goal as as of getting through some  
 00:06:52 --> 00:06:52: content.  
 00:06:52 --> 00:06:55: Rather quickly, because we really want to get to the  
 00:06:55 --> 00:06:59: discussion point here to start answering the questions that  
 we've  
 00:06:59 --> 00:06:59: been.  
 00:06:59 --> 00:07:00: You know that you have an.  
 00:07:00 --> 00:07:02: We've been hearing some things too,  
 00:07:02 --> 00:07:04: so we'll try to shed some insight there.  
 00:07:04 --> 00:07:06: Get get through this together.  
 00:07:06 --> 00:07:09: I've been opening my presentation for the past three years  
 00:07:09 --> 00:07:10: asking this question.  
 00:07:10 --> 00:07:12: Why are we ignoring the 90%  
 00:07:12 --> 00:07:13: and Rachel talked about this,  
 00:07:13 --> 00:07:15: but really, the 90% comes from this idea,  
 00:07:15 --> 00:07:18: not this idea. This reality that we are an indoor  
 00:07:18 --> 00:07:19: species.  
 00:07:19 --> 00:07:21: We spend nearly all of our time indoors,  
 00:07:21 --> 00:07:23: and maybe I'd say more so than ever.  
 00:07:23 --> 00:07:26: We're starting to appreciate. Just what that means,  
 00:07:26 --> 00:07:29: as many of us are isolated and locked down and  
 00:07:30 --> 00:07:33: stay home to help do our part in this social  
 00:07:33 --> 00:07:38: distancing and flatten the curve approach with this virus.  
 00:07:38 --> 00:07:41: I'm often asked audiences to play little game here and  
 00:07:41 --> 00:07:43: take your age and multiply it by .9,  
 00:07:43 --> 00:07:45: and you're lucky this is on zoom,  
 00:07:45 --> 00:07:48: 'cause usually I call somebody out and it's a double  
 00:07:49 --> 00:07:52: whammy because you have to disclose your age and do  
 00:07:52 --> 00:07:52: public Maps.  
 00:07:52 --> 00:07:55: And nobody likes either of those,  
 00:07:55 --> 00:07:57: so nobody ever volunteers. I just do myself.  
 00:07:57 --> 00:08:00: So I'm 44. That means my indoor age is 40  
 00:08:00 --> 00:08:02: and 40 years of my life indoors now.  
 00:08:02 --> 00:08:05: If I if I ask you all what constitutes healthy  
 00:08:05 --> 00:08:06: living,  
 00:08:06 --> 00:08:09: I bet everyone would give the same kind of answers.

00:08:09 --> 00:08:11: You know, we know we have to exercise it doesn't  
00:08:11 --> 00:08:12: tell me what a healthy lunch.  
00:08:12 --> 00:08:14: Looks like outdoor air pollution is bad for us.  
00:08:14 --> 00:08:16: I think very few people would be able to tell  
00:08:16 --> 00:08:19: us or describe where the first thought that would come  
00:08:19 --> 00:08:20: to their head is this place.  
00:08:20 --> 00:08:22: We spend all of our time how's the indoor environment  
00:08:22 --> 00:08:24: influencing our health?  
00:08:24 --> 00:08:26: The big gap in our knowledge about healthy living.  
00:08:26 --> 00:08:28: We did a series of studies I would call the  
00:08:28 --> 00:08:31: Cogat sex studies that looked at the influence of indoor  
00:08:31 --> 00:08:32: environments on cognitive function.  
00:08:32 --> 00:08:35: Higher order, decision making performance and I'm only  
going to  
00:08:35 --> 00:08:38: talk about it briefly here to rate is to highlight  
00:08:38 --> 00:08:40: something about the power of the indoor environment and it's  
00:08:40 --> 00:08:43: something we talked about extensively in our book and other  
00:08:43 --> 00:08:44: writings with John.  
00:08:44 --> 00:08:45: So we took knowledge workers.  
00:08:45 --> 00:08:48: We had them work their normal nine to five routine  
00:08:48 --> 00:08:50: in that cubicle environment that you see pictured there and  
00:08:50 --> 00:08:53: what they didn't know with these employees that we were  
00:08:53 --> 00:08:55: changing the air they were breathing.  
00:08:55 --> 00:08:58: In subtle ways and all we did was change the  
00:08:58 --> 00:08:59: amount of carbon dioxide,  
00:08:59 --> 00:09:02: the amount of fresh air coming in,  
00:09:02 --> 00:09:06: and the amount of EOC's common chemicals that are all  
00:09:06 --> 00:09:09: around us off gas off all sorts of materials.  
00:09:09 --> 00:09:11: Here's what we found at the end of the day  
00:09:11 --> 00:09:15: we administer this cognitive function test and we find that  
00:09:15 --> 00:09:19: across 9 cognitive function domains we find greater  
performance across  
00:09:19 --> 00:09:21: domains like strategy, crisis response,  
00:09:21 --> 00:09:24: how they utilized and search for information,  
00:09:24 --> 00:09:26: and so the key takeaway from this study.  
00:09:26 --> 00:09:28: It's quite simple. It's a double blinded study.  
00:09:28 --> 00:09:32: It's quite robust, but the indoor environment it could take  
00:09:32 --> 00:09:35: away the indoor environment has this big impact on her  
00:09:35 --> 00:09:38: health just by manipulating a handful of variables to make  
00:09:38 --> 00:09:40: the air a little bit better.  
00:09:40 --> 00:09:44: Uh, an reaching conditions that many buildings if not most  
00:09:44 --> 00:09:45: contained right now.

00:09:45 --> 00:09:48: Of course, we don't need that study to tell us  
 00:09:48 --> 00:09:50: the importance of indoor air here,  
 00:09:50 --> 00:09:53: I mentioned I bring up Alice Hamilton.  
 00:09:53 --> 00:09:55: She was the first female professor at Harvard.  
 00:09:55 --> 00:09:59: I find myself unbelievably in her lineages in the same  
 00:09:59 --> 00:10:01: Department in the same program.  
 00:10:01 --> 00:10:04: And now I'm the deputy director of that same same  
 00:10:04 --> 00:10:05: field of study.  
 00:10:05 --> 00:10:09: So it's quite humbling, brilliant scientists here and I pulled  
 00:10:09 --> 00:10:10: up the quotes.  
 00:10:10 --> 00:10:11: She says for you know,  
 00:10:11 --> 00:10:14: no one thought it was no one thought airborne contaminants  
 00:10:14 --> 00:10:17: were actually having an influence on people and she put  
 00:10:17 --> 00:10:20: it all together and was really one of the first  
 00:10:20 --> 00:10:23: to start implementing workplace controls.  
 00:10:23 --> 00:10:28: To reduce occupational risks. Using the building and  
 ventilation system,  
 00:10:28 --> 00:10:30: we've also known for a very long time the value  
 00:10:30 --> 00:10:33: that fresh outdoor air has in terms of infectious disease.  
 00:10:33 --> 00:10:35: Here I put up this quote from Florence Nightingale,  
 00:10:35 --> 00:10:39: but if you look at the history of ventilation rate.  
 00:10:39 --> 00:10:43: And the standards that they are that define what's an  
 00:10:43 --> 00:10:46: acceptable amount of outdoor air that comes in.  
 00:10:46 --> 00:10:48: For decades in the early 1900s,  
 00:10:48 --> 00:10:53: these ventilation standards were set based on infectious  
 disease.  
 00:10:53 --> 00:10:56: I'll change the 70 engineer started take over and say,  
 00:10:56 --> 00:11:00: well, let's base these ventilation rates on energy savings.  
 00:11:00 --> 00:11:03: So ventilation rates and actually a lot of our strategies  
 00:11:03 --> 00:11:07: and buildings that were once designed for health and  
 infectious  
 00:11:07 --> 00:11:07: disease.  
 00:11:07 --> 00:11:11: Have been changed over the past several decades and now  
 00:11:11 --> 00:11:12: once we've changed that,  
 00:11:12 --> 00:11:15: we've ushered in this era of sick building syndrome.  
 00:11:15 --> 00:11:19: In that we actually know a lot about how buildings  
 00:11:19 --> 00:11:23: and our built environment can be leveraged to protect us.  
 00:11:23 --> 00:11:25: And of course, if you look at SARS Co.  
 00:11:25 --> 00:11:27: V2, the virus that causes COVID-19,  
 00:11:27 --> 00:11:31: there are many examples already from this virus of how  
 00:11:31 --> 00:11:34: that building and how it's performing can either protect or  
 00:11:34 --> 00:11:36: make conditions worse.  
 00:11:36 --> 00:11:39: We can look at the outbreaks on the cruise ships,

00:11:39 --> 00:11:42: the Biogen conference, the Kirkland Senior Home.

00:11:42 --> 00:11:43: In fact, all senior homes.

00:11:43 --> 00:11:47: Quite a tragedy. But we have to correct fast.

00:11:47 --> 00:11:51: Uh, we see buildings that are are promoting or certainly

00:11:51 --> 00:11:53: not protecting against disease.

00:11:53 --> 00:11:56: We've known that for a long time with measles,

00:11:56 --> 00:12:00: another in fact. Other recent coronavirus epidemics like SARS,

00:12:00 --> 00:12:04: the first stars and MERS I've done in forensic investigations

00:12:04 --> 00:12:07: for a long time in my career I used to

00:12:07 --> 00:12:10: lead the investigations of Legionnaires'

00:12:10 --> 00:12:14: disease outbreaks in hospitals and I mentioned that because.

00:12:14 --> 00:12:17: There are some. It's a similarity to what we're seeing

00:12:17 --> 00:12:19: now on a global scale,

00:12:19 --> 00:12:20: in that people are dying.

00:12:20 --> 00:12:23: Lives are at risk. Their huge financial stakes.

00:12:23 --> 00:12:25: We have impartial and imperfect data.

00:12:25 --> 00:12:28: Yet we have to make decisions based on the best

00:12:28 --> 00:12:30: available data we have.

00:12:30 --> 00:12:32: The good news is that we can do this.

00:12:32 --> 00:12:34: In fact, we've done it all the time and never

00:12:34 --> 00:12:37: come across a building that couldn't be made better or

00:12:37 --> 00:12:37: safe.

00:12:37 --> 00:12:39: If we apply these basics of exposure,

00:12:39 --> 00:12:42: an risk science. And here's where we've been advancing some

00:12:42 --> 00:12:45: of the science that comes from decades of framework that's

00:12:45 --> 00:12:48: used for decades in the Occupational health world.

00:12:48 --> 00:12:50: And this is what we call the hierarchy of controls.

00:12:50 --> 00:12:52: And here John and I have reoriented.

00:12:52 --> 00:12:54: This will start at the bottom.

00:12:54 --> 00:12:56: But the first thing in the controls hierarchy here is

00:12:56 --> 00:12:58: to eliminate the exposure.

00:12:58 --> 00:13:00: Sure, we can do that by all working from home.

00:13:00 --> 00:13:03: A good strategy. It's not the strategy to re populate

00:13:03 --> 00:13:05: our buildings to restart the economy,

00:13:05 --> 00:13:08: but some sort of the workforce maybe can do that.

00:13:08 --> 00:13:10: The next one is substitution of activity.

00:13:10 --> 00:13:12: So who are the core people?

00:13:12 --> 00:13:14: They have to go back to your buildings to restart

00:13:14 --> 00:13:16: your your your company,

00:13:16 --> 00:13:18: the next one there is engineering controls.



00:13:18 --> 00:13:20: This is where healthy buildings come in.

00:13:20 --> 00:13:23: These are the strategies you can deploy or leverage your building to help fight the disease.

00:13:23 --> 00:13:25: Increase the ventilation rate, enhance filtration,

00:13:25 --> 00:13:27: use a portable air purifiers and some other techniques.

00:13:27 --> 00:13:30: Then we move up the list administrative controls.

00:13:30 --> 00:13:33: Think about how you going to densify your building.

00:13:33 --> 00:13:36: Can you go to AB days?

00:13:36 --> 00:13:37: Can you go go to shifts?

00:13:37 --> 00:13:38: What rules you would force in terms of social distancing

00:13:38 --> 00:13:41: and very last is PPE.

00:13:41 --> 00:13:42: This is personal protective equipment like wearing a mask

00:13:42 --> 00:13:45: and

00:13:45 --> 00:13:46: I'm.

00:13:46 --> 00:13:49: Certain that we will see mask wearing in common areas

00:13:49 --> 00:13:50: of buildings and elevators.

00:13:50 --> 00:13:54: What's really interesting here is that not one any one

00:13:54 --> 00:13:54: of these.

00:13:54 --> 00:13:56: Does the trick alone, right?

00:13:56 --> 00:13:59: We have to be very clear that there's no such

00:13:59 --> 00:13:59: thing.

00:13:59 --> 00:14:02: Is there risk? So the goal here is this layered

00:14:03 --> 00:14:03: defense.

00:14:03 --> 00:14:06: We use several. We use every control to attack all

00:14:06 --> 00:14:09: of the different modes of transmission for this virus,

00:14:09 --> 00:14:12: with the goldmic goal of reducing for minimizing risk in

00:14:12 --> 00:14:13: the building.

00:14:13 --> 00:14:15: After we think about the stars,

00:14:15 --> 00:14:17: Kobe 2 issue, I think it's natural.

00:14:17 --> 00:14:19: I think we should be thinking about what comes next

00:14:19 --> 00:14:22: and hear the healthy buildings program.

00:14:22 --> 00:14:25: The school Public Health, recently called the Nine

00:14:25 --> 00:14:26: Foundations of

00:14:26 --> 00:14:30: a healthy building.

00:14:30 --> 00:14:32: 40 years of science underpinning these foundational

00:14:32 --> 00:14:34: elements of what

00:14:34 --> 00:14:35: constitutes a healthy building.

00:14:35 --> 00:14:38: So as we think about what we should be doing

00:14:38 --> 00:14:42: for.

00:14:42 --> 00:14:45: Control of infectious disease. We should also be cogs into

00:14:45 --> 00:14:47: thinking about what's coming next and what else we shoot.

00:14:47 --> 00:14:47: Should we be doing to optimize the performance of our

00:14:47 --> 00:14:47: buildings and people in indoor environments?

00:14:47 --> 00:14:50: So I'll hand this off to John and then we'll  
 00:14:50 --> 00:14:51: come back.  
 00:14:51 --> 00:14:53: I'll come back for question and answer too,  
 00:14:53 --> 00:14:56: thanks. Thank you Joe. I I enjoy every time listening  
 00:14:56 --> 00:14:58: to you talk about this again.  
 00:14:58 --> 00:15:01: And for viewers this kog affect study where they changed  
 00:15:02 --> 00:15:05: the air quality in people's offices and it changed the  
 00:15:05 --> 00:15:05: output.  
 00:15:05 --> 00:15:07: Was really interesting to me.  
 00:15:07 --> 00:15:09: I'm real estate guy, I'm office landlord.  
 00:15:09 --> 00:15:13: I'm also Italy restaurant landlord and that's you happy about  
 00:15:13 --> 00:15:13: that right now.  
 00:15:13 --> 00:15:16: But the idea that the indoor air can really influence  
 00:15:16 --> 00:15:19: how people behave was what attracted me and Joe to  
 00:15:19 --> 00:15:20: work together.  
 00:15:20 --> 00:15:23: Of course, now I'm academia so will talk a little  
 00:15:23 --> 00:15:26: bit about what we think that healthy buildings movement  
 00:15:26 --> 00:15:28: stemmed  
 00:15:28 --> 00:15:31: from where we think that it is going.  
 00:15:31 --> 00:15:32: So in our book we talk about these 10 global  
 00:15:32 --> 00:15:34: mega changes.  
 00:15:34 --> 00:15:35: This is pre covid but it applies very much right  
 00:15:35 --> 00:15:37: now,  
 00:15:37 --> 00:15:40: the first one being changing populations.  
 00:15:40 --> 00:15:43: And this is the phenomenon of huge migration as hundreds  
 00:15:43 --> 00:15:45: of millions of people move to cities all over the  
 00:15:45 --> 00:15:48: world seeking opportunity,  
 00:15:48 --> 00:15:50: you're getting away from climate issues or seeking jobs.  
 00:15:50 --> 00:15:51: The second is around changing cities.  
 00:15:51 --> 00:15:53: As cities become more dense,  
 00:15:53 --> 00:15:55: for better or for worse,  
 00:15:55 --> 00:15:57: as we're seeing in the current situation,  
 00:15:57 --> 00:15:58: the third is run changing resources.  
 00:15:58 --> 00:16:01: So in the big picture,  
 00:16:01 --> 00:16:05: while all these people are moving to cities,  
 00:16:05 --> 00:16:05: there also are existing and worsening resource shortages like  
 00:16:05 --> 00:16:07: not  
 00:16:07 --> 00:16:09: know,  
 00:16:09 --> 00:16:11: clean air, not enough clean water,  
 00:16:11 --> 00:16:14: not enough land, not enough food,  
 00:16:14 --> 00:16:16: not enough energy, too much garbage.  
 00:16:16 --> 00:16:18: Too much traffic. All this has to be addressed later

00:16:14 --> 00:16:15: on to this.  
 00:16:15 --> 00:16:18: The impact of a potentially changing climate.  
 00:16:18 --> 00:16:19: Anna done a lot of work at you.  
 00:16:19 --> 00:16:22: Lie with Rachel Ann, Billy Grayson,  
 00:16:22 --> 00:16:26: others around climate resilience, adaptation to phenomena and perils like  
 00:16:26 --> 00:16:27: see Rise wildfires,  
 00:16:27 --> 00:16:31: floods, drought. All those things are happening in the context  
 00:16:31 --> 00:16:34: of the first 41 would hope that what would happen  
 00:16:34 --> 00:16:37: then is that governments would go ahead and tax this  
 00:16:37 --> 00:16:41: properly and spend on the infrastructure we need to defend  
 00:16:41 --> 00:16:42: US against these things,  
 00:16:42 --> 00:16:45: but. This all requires consensus and I don't know if  
 00:16:45 --> 00:16:47: you follow American politics that closely,  
 00:16:47 --> 00:16:51: but the idea of government working with consensus isn't necessarily  
 00:16:51 --> 00:16:52: obvious,  
 00:16:52 --> 00:16:54: so there for work through the private sector.  
 00:16:54 --> 00:16:57: How can the private sector you allied type people help  
 00:16:57 --> 00:16:58: with these issues?  
 00:16:58 --> 00:17:00: There's also phenomenon we can talk about more,  
 00:17:00 --> 00:17:04: which in my infrastructure course I call the infrastructure paradox,  
 00:17:04 --> 00:17:07: meaning that while all these issues  
 00:17:07 --> 00:17:08: beside us in the world,  
 00:17:08 --> 00:17:11: there is trillions, 10s of trillions of dollars,  
 00:17:11 --> 00:17:14: a few less than there was three weeks ago,  
 00:17:14 --> 00:17:17: but still 10s of trillions of dollars in the global  
 00:17:17 --> 00:17:18: financial system,  
 00:17:18 --> 00:17:21: earning almost zero yield. So how can these kinds of  
 00:17:21 --> 00:17:25: assets be dedicated to products and projects that are cash  
 00:17:25 --> 00:17:26: flow positive?  
 00:17:26 --> 00:17:28: Add on to this changing definition of health,  
 00:17:28 --> 00:17:31: and when Joe and I initially wrote the book,  
 00:17:31 --> 00:17:35: we were thinking about People's General awareness of fitness and  
 00:17:35 --> 00:17:38: of air quality in those kind of things will now  
 00:17:38 --> 00:17:42: it's become blazingly obvious to everybody that this issue of  
 00:17:42 --> 00:17:46: pandemic exists. And even if there are both vaccine and  
 00:17:46 --> 00:17:47: a cure for COVID-19,  
 00:17:47 --> 00:17:50: there will be another one and people are not going  
 00:17:50 --> 00:17:54: to forget that these kind of viruses occur and they  
 00:17:54 --> 00:17:57: rage around in the world and there in our face.

00:17:57 --> 00:17:59: Add to this the ongoing think,  
 00:17:59 --> 00:18:02: thought about the changing nature of buildings,  
 00:18:02 --> 00:18:05: and I'm not quite going to admit that I remember  
 00:18:05 --> 00:18:09: when elevators or rubber roofs or air conditioning became  
 ubiquitous,  
 00:18:09 --> 00:18:13: but building change and the idea that buildings can be  
 00:18:13 --> 00:18:15: green is now mainstream in independence.  
 00:18:15 --> 00:18:17: Can be healthy is mainstream.  
 00:18:17 --> 00:18:20: It's not clear that a totally locked down energy efficient  
 00:18:20 --> 00:18:23: building is necessarily the most healthy building,  
 00:18:23 --> 00:18:26: and so part of what we're thinking about is the  
 00:18:26 --> 00:18:28: evolution from thinking.  
 00:18:28 --> 00:18:31: But a building that uses little energy and not too  
 00:18:31 --> 00:18:32: many rainforests.  
 00:18:32 --> 00:18:35: Woods can also be thought of as a building that  
 00:18:35 --> 00:18:38: is very healthy for the occupants indoors,  
 00:18:38 --> 00:18:40: particularly in terms of sunlight,  
 00:18:40 --> 00:18:43: fresh air, and some of those simple things.  
 00:18:43 --> 00:18:46: We always knew that they work with the nature of  
 00:18:46 --> 00:18:47: work was changing,  
 00:18:47 --> 00:18:49: and it's been very accelerated now,  
 00:18:49 --> 00:18:52: and it's not clear to any of us on the  
 00:18:52 --> 00:18:55: call or anybody in the world whether the work from  
 00:18:55 --> 00:18:57: home issue is going back into the can,  
 00:18:57 --> 00:19:01: or whether the. The in person education phenomenon is  
 going  
 00:19:01 --> 00:19:05: to replicate itself or whether we are going to even  
 00:19:05 --> 00:19:09: go to big events like sporting events and concerts anymore,  
 00:19:09 --> 00:19:13: but the changing nature of work and working with symbols  
 00:19:13 --> 00:19:17: and working with thoughts is clearly an issue that is  
 00:19:17 --> 00:19:19: highlighted in covid time.  
 00:19:19 --> 00:19:24: In terms of changing technology which only initially wrote this  
 00:19:24 --> 00:19:24: book,  
 00:19:24 --> 00:19:27: we were thinking about technologies like filtration,  
 00:19:27 --> 00:19:31: like better ventilation, like being able to sense when there  
 00:19:31 --> 00:19:35: were gases in the environment and those kind of things.  
 00:19:35 --> 00:19:39: Now we see in covid time changing technologies like  
 ubiquitous  
 00:19:39 --> 00:19:43: use of thermal detection as people walk through buildings,  
 00:19:43 --> 00:19:46: use of monitors of your temperature as you walk around,  
 00:19:46 --> 00:19:48: you sit in door.  
 00:19:48 --> 00:19:52: Air quality monitors that are personalized and people can tie  
 00:19:52 --> 00:19:56: together into a wide network of people sharing information

about

00:19:56 --> 00:19:58: what their condition is of their office.

00:19:58 --> 00:20:02: So all these aspects of technology are changing in ways

00:20:02 --> 00:20:05: that are undetermined about whether the tenants will wind up

00:20:06 --> 00:20:09: having control of the technology because they are using their

00:20:09 --> 00:20:14: individual air quality monitors or their landlords might think of

00:20:14 --> 00:20:16: installing thermal sensors and.

00:20:16 --> 00:20:20: Facial recognition in elevators. See who's coming in the

00:20:20 --> 00:20:23: building,

00:20:23 --> 00:20:24: or whether the government is going to do that very

00:20:24 --> 00:20:27: much up in the air.

00:20:27 --> 00:20:28: And finally the question of changing values and so at

00:20:28 --> 00:20:31: the time we wrote the book.

00:20:31 --> 00:20:33: Larry Fink from BlackRock was just just wrote the 1st

00:20:33 --> 00:20:37: of a series of famous letters about ESG,

00:20:37 --> 00:20:39: environmental sustainability and governance, kind of goals in

00:20:39 --> 00:20:42: corporations,

00:20:42 --> 00:20:43: and those were changing values.

00:20:43 --> 00:20:45: It looks like one of the changing values for the

00:20:45 --> 00:20:47: next couple of years.

00:20:47 --> 00:20:50: It's going to be plain old survival,

00:20:50 --> 00:20:51: because clearly we're going into a deep.

00:20:51 --> 00:20:53: Economic recession and there will be a question about

00:20:53 --> 00:20:54: whether

00:20:54 --> 00:20:57: the values are just.

00:20:57 --> 00:21:00: How do we keep our company afloat?

00:21:00 --> 00:21:03: Do we think about ESG,

00:21:03 --> 00:21:04: and in particular, how do we think about populations who

00:21:04 --> 00:21:07: are much more exposed to some of these perils and

00:21:07 --> 00:21:10: don't have the same capability to address them?

00:21:10 --> 00:21:11: That some of us do on this call?

00:21:11 --> 00:21:13: So those are the 10 trends that we were thinking

00:21:13 --> 00:21:15: about in several of them have really been highlighted in

00:21:15 --> 00:21:18: covid time.

00:21:18 --> 00:21:21: So what now, what next part of it is,

00:21:21 --> 00:21:24: we think that if you were a landlord or tenant,

00:21:24 --> 00:21:27: company employees, or interviewed in your building.

00:21:27 --> 00:21:29: Or apartment renters are insuring your building as well.

00:21:29 --> 00:21:31: These are real quotes that we've been collecting from people

00:21:31 --> 00:21:34: out in the world on sites like for example Glassdoor.

00:21:34 --> 00:21:37: People talk about their companies,

00:21:37 --> 00:21:40: or as we interview people.

00:21:40 --> 00:21:43: One person said coronavirus is finally showing the company

00:21:34 --> 00:21:37: how  
 00:21:37 --> 00:21:40: flawed it is with outdated technology management style.  
 00:21:40 --> 00:21:41: What's the point of having 2000 to 3000 people in  
 00:21:41 --> 00:21:44: office with recirculated air?  
 00:21:44 --> 00:21:46: How is this different than being in a virus infected  
 00:21:46 --> 00:21:49: cruise ship for 8 1/2 hours a day,  
 00:21:49 --> 00:21:51: five days a week? I'd be thinking pretty hard if  
 00:21:51 --> 00:21:53: I was a claims processing company.  
 00:21:53 --> 00:21:56: Or a back office company with a lot of people  
 00:21:56 --> 00:21:58: side by side doing work like this and the employees  
 00:21:58 --> 00:22:01: are now thinking is this where I want to go  
 00:22:01 --> 00:22:04: back to work or the alternative side that management has  
 00:22:04 --> 00:22:08: taken the lead in handling the COVID-19 situation with health  
 00:22:08 --> 00:22:11: and safety of his entire workforce being the utmost  
 00:22:11 --> 00:22:13: importance  
 00:22:13 --> 00:22:16: in the face of the current situation that couldn't be  
 00:22:16 --> 00:22:19: happier with how the company is responding.  
 00:22:19 --> 00:22:21: Which one of these companies is going to wind up  
 00:22:21 --> 00:22:25: attracting the best employees and keeping the best  
 00:22:25 --> 00:22:26: employees?  
 00:22:26 --> 00:22:29: So unfortunately in covid time?  
 00:22:29 --> 00:22:32: Now, the healthy workplace and a demonstrably healthy  
 00:22:32 --> 00:22:34: building aren't  
 00:22:34 --> 00:22:38: really just nice to have.  
 00:22:38 --> 00:22:40: We think they're going to be absolutely must have.  
 00:22:40 --> 00:22:43: This will be that the floor at which your company  
 00:22:43 --> 00:22:44: can expect to perform going forward.  
 00:22:44 --> 00:22:47: How will these employees know what their quality is beyond  
 00:22:47 --> 00:22:48: just their perception of it?  
 00:22:48 --> 00:22:50: How will they share that information yet to be seen?  
 00:22:50 --> 00:22:53: But as I mentioned before,  
 00:22:53 --> 00:22:56: it is possible for everybody to have a low cost  
 00:22:56 --> 00:22:59: to air quality monitor,  
 00:22:59 --> 00:23:01: which they titled their self,  
 00:23:01 --> 00:23:04: their mobile phone or to their Android device or their  
 00:23:04 --> 00:23:07: Samsung.  
 00:23:07 --> 00:23:08: It can also touch their Fitbit if they want to  
 00:23:08 --> 00:23:09: and share real time health and fitness information into the  
 00:23:09 --> 00:23:10: cloud for an entity to digest.  
 00:23:10 --> 00:23:11: If it chooses to. So how you know this is  
 00:23:11 --> 00:23:12: working?  
 00:23:12 --> 00:23:13: If you thinking as a landlord or tenant organization or  
 00:23:13 --> 00:23:14: maybe an investor,

00:23:08 --> 00:23:11: Joe and I have been talking about healthy buildings.

00:23:11 --> 00:23:15: We believe that there's a series of health performance indicators

00:23:15 --> 00:23:18: that are going to let you know if you're building

00:23:18 --> 00:23:19: really is healthy,

00:23:19 --> 00:23:22: so you can look at this as an occupant or

00:23:22 --> 00:23:24: as a landlord or as a tenant,

00:23:24 --> 00:23:26: or as an investor or as a designer.

00:23:26 --> 00:23:29: In the next slide shows what we think these are

00:23:29 --> 00:23:29: zero,

00:23:29 --> 00:23:32: the lagging indicators on the left are the ones you

00:23:32 --> 00:23:34: learn about afterwards.

00:23:34 --> 00:23:37: The leading indicators on the right or the ones you

00:23:37 --> 00:23:39: can think about ahead of time.

00:23:39 --> 00:23:42: The top row are direct aspects of how individual human

00:23:42 --> 00:23:42: beings,

00:23:42 --> 00:23:45: how people are perceiving the space.

00:23:45 --> 00:23:47: And we say direct 'cause this is what we care

00:23:47 --> 00:23:47: about,

00:23:47 --> 00:23:50: although it tends to be very hard to measure and

00:23:50 --> 00:23:52: the bottom half are the indirect aspects,

00:23:52 --> 00:23:55: meaning the building because the quest isn't really to have

00:23:55 --> 00:23:56: a healthy building.

00:23:56 --> 00:23:59: I'm not that worried about the vapor barrier in my

00:23:59 --> 00:24:01: building being non porous.

00:24:01 --> 00:24:04: I'm worried about the human beings inside and how are

00:24:04 --> 00:24:06: they feeling so?

00:24:06 --> 00:24:07: On the top left is lagging.

00:24:07 --> 00:24:09: Indicators tend to be costs,

00:24:09 --> 00:24:11: so for example an illness trend or medical costs or

00:24:12 --> 00:24:14: things that you see after the fact to see as

00:24:14 --> 00:24:16: a landlord are as a tenant company or as a

00:24:16 --> 00:24:20: building manager. Was your building successful for these people?

00:24:20 --> 00:24:22: The ones in the right on the top tend to

00:24:22 --> 00:24:25: be feelings that tend to have people saying yes.

00:24:25 --> 00:24:28: I'm happier. I'm complaining it or I've sentiment analysis and

00:24:28 --> 00:24:30: these kinds of things.

00:24:30 --> 00:24:33: Also hard to measure, but these are the benchmarks of

00:24:33 --> 00:24:34: spatial temporal meaning.

00:24:34 --> 00:24:36: How do people feel how they feel overtime?

00:24:36 --> 00:24:39: Can we track? Time series data on this the bottom

00:24:39 --> 00:24:42: ones tend to be one that is easy to measure

00:24:42 --> 00:24:43: on the bottom left.

00:24:43 --> 00:24:46: For example, recruitment rates, space utilization,

00:24:46 --> 00:24:50: retro commissioning, things like that and the bottom right

00:24:50 --> 00:24:53: tend

00:24:50 --> 00:24:53: to be the ones where these are real actions you

00:24:54 --> 00:24:54: can take.

00:24:54 --> 00:24:57: You can think about all aspects of things in this

00:24:57 --> 00:24:58: bottom right box.

00:24:58 --> 00:25:01: You notice that the pulse is the same as the

00:25:01 --> 00:25:03: nine foundations of healthy building,

00:25:03 --> 00:25:07: so all of the nine foundations are objectively measurable to

00:25:07 --> 00:25:08: say.

00:25:08 --> 00:25:10: What are we doing in terms of water quality?

00:25:10 --> 00:25:12: What are we doing in terms of lighting?

00:25:12 --> 00:25:14: What we're doing in terms of ventilation,

00:25:14 --> 00:25:16: just like your doctor would take your pulse and your

00:25:16 --> 00:25:18: blood pressure and your temperature.

00:25:18 --> 00:25:20: You can take the pulse of the building to infer

00:25:20 --> 00:25:22: what will happen around in traction ventilation,

00:25:22 --> 00:25:25: filtration, material selection, and these kinds of things.

00:25:25 --> 00:25:28: So measuring buildings is generally easier than measuring

00:25:28 --> 00:25:31: people,

00:25:28 --> 00:25:31: but we're trying to accomplish is measuring the health of

00:25:31 --> 00:25:32: the people.

00:25:32 --> 00:25:35: We believe that these health performance indicators will be

00:25:35 --> 00:25:38: object

00:25:35 --> 00:25:38: will use by lots and lots of different measuring firms.

00:25:38 --> 00:25:39: To say in the very near term,

00:25:39 --> 00:25:41: can I back him, get back in my building in

00:25:41 --> 00:25:43: the mid term that people want to be here in

00:25:43 --> 00:25:44: the long term?

00:25:44 --> 00:25:46: Is this a better building to invest in then a

00:25:46 --> 00:25:47: different one?

00:25:47 --> 00:25:49: So Joe and I have spent a lot of time

00:25:49 --> 00:25:50: thinking about.

00:25:50 --> 00:25:53: These two issues him from his background in as a

00:25:53 --> 00:25:57: forensic pathologist and thinking about sick buildings and

00:25:57 --> 00:25:59: Legionnaires'

00:25:57 --> 00:25:59: disease and that kind of thing,

00:25:59 --> 00:26:02: and me as a real estate person general contractor.

00:26:02 --> 00:26:05: Now as an academic, how to marry together these aspects

00:26:05 --> 00:26:06: of buildings,



00:26:06 --> 00:26:09: business health and wealth and Norman Foster said about her

00:26:09 --> 00:26:09: book.

00:26:09 --> 00:26:13: We need a new generation if humanitarian's energy is underpinned

00:26:13 --> 00:26:16: by scientific research and that's part of what we're trying

00:26:16 --> 00:26:17: to offer today so.

00:26:17 --> 00:26:20: Our books came out today believe it or not,

00:26:20 --> 00:26:22: and some of it seems like well.

00:26:22 --> 00:26:25: Maybe we'll put a little bit of this cognition stuff

00:26:25 --> 00:26:28: and some of it seems more valid than ever in

00:26:28 --> 00:26:31: terms of how do we get back into buildings because

00:26:31 --> 00:26:34: it's not just that the healthy buildings aren't that expensive.

00:26:34 --> 00:26:38: It's also that sick people are really expensive so with

00:26:38 --> 00:26:38: that course.

00:26:38 --> 00:26:41: Obviously Joe and I were both teachers.

00:26:41 --> 00:26:43: We could talk, for 46 more sessions,

00:26:43 --> 00:26:47: no problem. Let's take some questions Rachel.

00:26:47 --> 00:26:50: Alright, thank you Joe and John really appreciate it.

00:26:50 --> 00:26:54: We've gotten some great questions and I'll just start at

00:26:55 --> 00:26:58: the top with the ones that were upvoted and we

00:26:58 --> 00:27:00: have two that are very similar.

00:27:00 --> 00:27:04: I think a lot of people are really thinking about

00:27:04 --> 00:27:06: what is the future of office space.

00:27:06 --> 00:27:09: How will design and layout change,

00:27:09 --> 00:27:12: and what can we expect?

00:27:12 --> 00:27:14: How do we think about operations?

00:27:14 --> 00:27:17: I know, you know, in some places thinking about staggered

00:27:17 --> 00:27:20: working relationships and options for people.

00:27:20 --> 00:27:23: So how are you guys thinking about what the office

00:27:24 --> 00:27:27: of the Future looks like and what will change both

00:27:27 --> 00:27:30: in the short term and in the long term?

00:27:30 --> 00:27:32: Joe, why don't you take that in the shorter term?

00:27:32 --> 00:27:34: Because you've been talking to people about getting back to

00:27:34 --> 00:27:37: work and I can take in the longer term from

00:27:37 --> 00:27:37: a landlord POV.

00:27:37 --> 00:27:40: Yeah, sure. So I've been thinking a lot about this

00:27:40 --> 00:27:41: time with a lot of people too.

00:27:41 --> 00:27:44: I think there's one thing that's a definite and that

00:27:44 --> 00:27:47: is the changing expectations like we've been talking about that

00:27:47 --> 00:27:50: people are going to look at their workplace differently.

00:27:50 --> 00:27:51: So in the shorter term,

00:27:51 --> 00:27:53: I think the next time we will go back to  
 00:27:53 --> 00:27:55: my building will probably pay attention to the door knobs  
 00:27:55 --> 00:27:58: and I don't know what my door knobs look like  
 00:27:58 --> 00:27:59: in my office right now,  
 00:27:59 --> 00:28:01: but I bet next time I'm in my office I'll  
 00:28:01 --> 00:28:02: I'll look at him.  
 00:28:02 --> 00:28:04: So I think we're gonna have a heightened sense of  
 00:28:04 --> 00:28:05: awareness.  
 00:28:05 --> 00:28:07: That just means we have there we have to take  
 00:28:07 --> 00:28:08: these steps to.  
 00:28:08 --> 00:28:11: To minimize or I think pragmatic steps to minimize this.  
 00:28:11 --> 00:28:14: This threat and they can actually be done if we  
 00:28:14 --> 00:28:16: take that layer defense approach.  
 00:28:16 --> 00:28:19: I was talking about that involves some design changes,  
 00:28:19 --> 00:28:22: an operational changes, it's both and it's also engineering  
 00:28:22 --> 00:28:25: changes,  
 00:28:25 --> 00:28:26: right? We can change what we're doing with the fans  
 00:28:26 --> 00:28:28: in the building.  
 00:28:28 --> 00:28:32: We're going to change how we operate.  
 00:28:32 --> 00:28:34: Our billing companies have to make decisions on personnel  
 00:28:34 --> 00:28:37: and  
 00:28:37 --> 00:28:38: spreading out in these spaces,  
 00:28:38 --> 00:28:39: right? So I anticipate will be the end of conference  
 00:28:39 --> 00:28:42: rooms for awhile will be.  
 00:28:42 --> 00:28:43: The end of large meetings,  
 00:28:43 --> 00:28:44: certainly, I think a significant portion of the workforce will  
 00:28:44 --> 00:28:46: still work from home.  
 00:28:46 --> 00:28:48: It won't be all at once.  
 00:28:48 --> 00:28:51: We won't get a green light on June 1st.  
 00:28:51 --> 00:28:53: I think it's gonna be a staged approach.  
 00:28:53 --> 00:28:55: I think if you look at the epidemiological models it's  
 00:28:55 --> 00:28:58: also a certainty that we're going to be playing some  
 00:28:58 --> 00:29:00: game of what people call whack Amole.  
 00:29:00 --> 00:29:02: Sometimes that's over the next couple of months we're going  
 00:29:02 --> 00:29:03: to have to be adaptive and what may seem like  
 00:29:03 --> 00:29:06: a slow start in one region.  
 00:29:06 --> 00:29:09: They have to be tampered back down.  
 00:29:09 --> 00:29:11: Depending on how that disease is spreading and how the  
 00:29:11 --> 00:29:12: the capacity of the health care systems in that space.  
 00:29:12 --> 00:29:14: So I think we have to go into this that  
 00:29:14 --> 00:29:15: it's not just here.  
 00:29:15 --> 00:29:16: Go back and it's going to be like before.  
 00:29:16 --> 00:29:17: It won't be like before,

00:29:15 --> 00:29:18: they'll be changes that will be quite visible and we  
00:29:18 --> 00:29:21: should expect that whatever plan we put in place on  
00:29:21 --> 00:29:23: June 1st is going to be different on July 1st  
00:29:23 --> 00:29:26: because I'll tell you by the time we got this  
00:29:26 --> 00:29:26: call,  
00:29:26 --> 00:29:28: even the science will have changed.  
00:29:28 --> 00:29:30: And this past hour, so it's going to require us  
00:29:30 --> 00:29:33: to be all be really quite flexible in how we  
00:29:33 --> 00:29:34: approach getting back to work.  
00:29:37 --> 00:29:39: I'm not sure that I would have a particularly more  
00:29:39 --> 00:29:43: profound addition than what most people are thinking about.  
00:29:43 --> 00:29:43: On the call.  
00:29:45 --> 00:29:49: The biggest one probably is around the jobs environment  
mean  
00:29:49 --> 00:29:52: it's hard to believe there's not going to be a  
00:29:52 --> 00:29:53: deep recession,  
00:29:53 --> 00:29:55: and that means that there's going to be a lot  
00:29:56 --> 00:29:59: of vacant office space and a lot of vacant retail  
00:29:59 --> 00:30:00: was in trouble already,  
00:30:00 --> 00:30:04: reachable even worse, it's not clear that business travel is  
00:30:04 --> 00:30:05: going to come back right away,  
00:30:05 --> 00:30:07: so the future of hotels.  
00:30:07 --> 00:30:10: It's also in doubt when you think about knowledge workers  
00:30:10 --> 00:30:12: and office workers,  
00:30:12 --> 00:30:13: the.  
00:30:13 --> 00:30:16: And pick your metaphor that the cat is out of  
00:30:16 --> 00:30:18: the bag of the horses out of the barn.  
00:30:18 --> 00:30:19: In terms they work for home,  
00:30:19 --> 00:30:22: so we probably had a 20 year acceleration in the  
00:30:22 --> 00:30:25: acceptability of work from home as everybody had to figure  
00:30:25 --> 00:30:25: this out.  
00:30:25 --> 00:30:27: And for Joe with his carpenters and his kids,  
00:30:27 --> 00:30:29: it may be more difficult than for some,  
00:30:29 --> 00:30:32: but.  
00:30:32 --> 00:30:35: When the world is already been suffering by people spending  
00:30:35 --> 00:30:36: so much time in traffic in,  
00:30:36 --> 00:30:40: we're spending so much time doing things virtually anyway.  
00:30:40 --> 00:30:42: Why do we have to congregate in a physical place?  
00:30:42 --> 00:30:45: So those phenomena were happening anyway,  
00:30:45 --> 00:30:47: and they've been accelerated by the pandemic,  
00:30:47 --> 00:30:49: and by that will be an upcoming recession.  
00:30:49 --> 00:30:51: When you get to the office,

00:30:51 --> 00:30:53: I think there will be a very long period of

00:30:53 --> 00:30:55: essentially per personal protection,

00:30:55 --> 00:30:57: and it maybe it's like,

00:30:57 --> 00:30:59: OK, they never used to wear hard hats on a

00:30:59 --> 00:31:02: construction site you never used to wear a helmet when

00:31:02 --> 00:31:03: you were cycling.

00:31:03 --> 00:31:05: If you didn't use to wear seatbelts when you were

00:31:05 --> 00:31:07: driving and now you're going to go to the office

00:31:07 --> 00:31:09: and you're going to be wearing a mask,

00:31:09 --> 00:31:11: or you're going to be washing your hands more often

00:31:11 --> 00:31:13: and people sort of get used to it,

00:31:13 --> 00:31:14: it gets priced in.

00:31:14 --> 00:31:16: Til Secondly, the question of proximity.

00:31:16 --> 00:31:19: It makes it harder to argue that there should be

00:31:19 --> 00:31:21: a lot of people in 120 square feet each in

00:31:21 --> 00:31:22: a wide open office.

00:31:22 --> 00:31:25: There's been a lot of controversy one way or the

00:31:25 --> 00:31:28: other about whether people are more productive or not.

00:31:28 --> 00:31:31: Obviously it's less expensive 'cause using less space,

00:31:31 --> 00:31:32: but if people are transmitting,

00:31:32 --> 00:31:34: disease is not so good.

00:31:34 --> 00:31:36: What does that mean for trading floor?

00:31:36 --> 00:31:39: Tremendous pressure on the big trading houses to get back

00:31:39 --> 00:31:41: because part of the the idea is,

00:31:41 --> 00:31:43: are you there and you can see each other.

00:31:43 --> 00:31:46: If your claims processor? That's not quite so true.

00:31:46 --> 00:31:49: So that will play out multiple different ways,

00:31:49 --> 00:31:53: but there's sort of the add-on question of whether.

00:31:53 --> 00:31:57: The protection methods will be optional like in

00:31:57 --> 00:31:59: Massachusetts,

00:31:59 --> 00:32:02: are not required to wear a bicycle helmet,

00:32:02 --> 00:32:04: but people do. You are required to wear seatbelts.

00:32:04 --> 00:32:07: People will see you.

00:32:07 --> 00:32:09: In neighboring New Hampshire, you're not required to wear a

00:32:09 --> 00:32:12: motorcycle helmet or a seat belt,

00:32:12 --> 00:32:15: and there are people who cross into New Hampshire

00:32:15 --> 00:32:15: unbuckle

00:32:15 --> 00:32:19: their seat belt because they want to have that level

00:32:19 --> 00:32:21: of freedom.

00:32:21 --> 00:32:24: Will the kind of aspects that influence how viruses travel

00:32:24 --> 00:32:27: through buildings be mandated,

00:32:27 --> 00:32:30: or will they be chosen by thoughtful tenants or by

00:32:30 --> 00:32:33: landlords to really like to have a safer building?

00:32:27 --> 00:32:30: If you have a 2 million square foot building,  
 00:32:30 --> 00:32:33: you really don't want a bunch of people coming up  
 00:32:33 --> 00:32:37: and down the elevator spreading diseases to your other  
 tenants,  
 00:32:37 --> 00:32:40: and so you can imagine an environment where elevators,  
 00:32:40 --> 00:32:44: escalators revolving doors and might have thermal sensors  
 might have  
 00:32:44 --> 00:32:45: retinal scans,  
 00:32:45 --> 00:32:50: might have facial recognition, might have time series  
 information about  
 00:32:50 --> 00:32:52: what your temperature was today.  
 00:32:52 --> 00:32:54: And where your pulse was today and landlords keep that  
 00:32:54 --> 00:32:55: information,  
 00:32:55 --> 00:32:56: I don't see that in the next two to four  
 00:32:57 --> 00:32:57: months.  
 00:32:57 --> 00:32:59: It wouldn't surprise me at all if landlord said I  
 00:32:59 --> 00:33:00: have a very big building.  
 00:33:00 --> 00:33:02: I want this to be the safest building as well  
 00:33:02 --> 00:33:05: as the healthiest building as well as the greenest building.  
 00:33:05 --> 00:33:07: And this is what I'm going to do.  
 00:33:07 --> 00:33:10: Yeah, so you. You've talked a lot about what happens  
 00:33:11 --> 00:33:13: at the sort of landlord or or building level,  
 00:33:13 --> 00:33:17: but we've gotten a question about what strategies can you  
 00:33:18 --> 00:33:21: use as an individual to keep yourself safe and your  
 00:33:21 --> 00:33:22: family safe.  
 00:33:22 --> 00:33:24: And that one has five upvotes.  
 00:33:24 --> 00:33:26: So we talked a little bit about masks and hand  
 00:33:26 --> 00:33:26: washing,  
 00:33:26 --> 00:33:29: which of course core. But are there other things that  
 00:33:29 --> 00:33:32: people should be thinking about or considering?  
 00:33:34 --> 00:33:37: Yeah, I think that's a that's a really important question.  
 00:33:37 --> 00:33:39: I've been writing a lot lately and applying a public  
 00:33:39 --> 00:33:40: Health Science right.  
 00:33:40 --> 00:33:43: I do healthy buildings, but first and foremost,  
 00:33:43 --> 00:33:45: summer professor at a school public health,  
 00:33:45 --> 00:33:47: and I've been writing Op eds a lot recently to  
 00:33:47 --> 00:33:51: translate some of that scientist practical tips people could  
 take.  
 00:33:51 --> 00:33:52: And so there's an article.  
 00:33:52 --> 00:33:55: Maybe we can share Rachel from USA TODAY that I  
 00:33:55 --> 00:33:57: wrote on tips you can take at home to protect  
 00:33:57 --> 00:33:57: yourself,  
 00:33:57 --> 00:34:00: in particular if someone in your house has coronavirus.

00:34:00 --> 00:34:03: If you look at the statistics on what we're expecting  
 00:34:03 --> 00:34:05: in terms of global population.  
 00:34:05 --> 00:34:07: There's a good chance each of us will get it  
 00:34:07 --> 00:34:08: right up for it,  
 00:34:08 --> 00:34:09: up to 60% of the global population.  
 00:34:09 --> 00:34:11: Sometimes the next year. At least,  
 00:34:11 --> 00:34:13: that's what the early models show.  
 00:34:13 --> 00:34:15: So we're going to have people who are sick in  
 00:34:15 --> 00:34:18: our buildings and quite possibly if you live with somebody  
 00:34:18 --> 00:34:18: else,  
 00:34:18 --> 00:34:19: it could be someone in your home.  
 00:34:19 --> 00:34:21: So there is some action.  
 00:34:21 --> 00:34:23: There's some steps we can take an eye right about  
 00:34:23 --> 00:34:24: this in this piece,  
 00:34:24 --> 00:34:26: and also to highlight one that might be different.  
 00:34:26 --> 00:34:29: Let me highlight some of the practical steps that maybe  
 00:34:29 --> 00:34:31: your audience would think about right.  
 00:34:31 --> 00:34:33: Open up your windows, bring in some fresh air,  
 00:34:33 --> 00:34:36: Duluth, but in this space you want to clean surface  
 00:34:36 --> 00:34:37: is frequently.  
 00:34:37 --> 00:34:38: If you can humidify the air,  
 00:34:38 --> 00:34:41: I use a portable air humidifier and a portable air  
 00:34:41 --> 00:34:41: purifier.  
 00:34:41 --> 00:34:43: I also do personal, you know,  
 00:34:43 --> 00:34:46: personal control. That's where all frequently washing our  
 00:34:46 --> 00:34:48: hands.  
 00:34:46 --> 00:34:48: We covering our cops and doing the basics here.  
 00:34:48 --> 00:34:50: When we go out, we definitely wear a mask.  
 00:34:50 --> 00:34:53: I wrote a piece in the Washington Post arguing for  
 00:34:53 --> 00:34:55: a four fold benefit of why we should be wearing  
 00:34:55 --> 00:34:57: masks so that you can post that too if you'd  
 00:34:57 --> 00:35:00: like. I think the science is really clear on what  
 00:35:00 --> 00:35:02: we can do in this simple steps to try to  
 00:35:02 --> 00:35:04: break this causal chain.  
 00:35:04 --> 00:35:06: Across all three modes of transmission,  
 00:35:06 --> 00:35:08: large droplets in coughs and sneezes,  
 00:35:08 --> 00:35:11: fomites or inanimate services that can harbor the virus and  
 00:35:11 --> 00:35:13: act as a source of transference and even airborne,  
 00:35:13 --> 00:35:16: I think there's plenty of evidence that all three modes  
 00:35:16 --> 00:35:17: are happening.  
 00:35:17 --> 00:35:20: Let me mention one that maybe people aren't thinking about  
 00:35:20 --> 00:35:21: too much,

00:35:21 --> 00:35:23: and that's what's happening in the bathroom,  
00:35:23 --> 00:35:26: so you know, we know that several studies now showing  
00:35:26 --> 00:35:28: that we have virus in our slip your infected and  
00:35:28 --> 00:35:30: you had COVID-19 virus in your stool.  
00:35:30 --> 00:35:33: There's one study showing kids shedding virus in their stool  
00:35:34 --> 00:35:34: up to 30 days.  
00:35:34 --> 00:35:37: We know from other studies that if you flush the  
00:35:37 --> 00:35:39: toilet you can you generate bioaerosols in that space and  
00:35:39 --> 00:35:41: that could linger for 30 minutes or more,  
00:35:41 --> 00:35:44: depending on what you're doing with your bathroom  
operation.  
00:35:44 --> 00:35:46: So if you have an exhaust fan you should be  
00:35:46 --> 00:35:47: running it,  
00:35:47 --> 00:35:48: you should close the door.  
00:35:48 --> 00:35:50: You should close the lid before you flush,  
00:35:50 --> 00:35:52: and if you have that exhaust,  
00:35:52 --> 00:35:53: then yeah, keep it running.  
00:35:53 --> 00:35:55: If you have someone sick in the house.  
00:35:55 --> 00:35:57: If you're fortunate enough to have a second bathroom,  
00:35:57 --> 00:35:59: you should separate bathroom usage.  
00:35:59 --> 00:36:01: And if you have one bathroom,  
00:36:01 --> 00:36:03: the person who is sick should take precautions in terms  
00:36:03 --> 00:36:05: of cleaning the space after they leave.  
00:36:05 --> 00:36:07: So those are just some of the steps we can  
00:36:07 --> 00:36:10: pass around the full article that could be a little  
00:36:10 --> 00:36:10: bit more,  
00:36:10 --> 00:36:12: but again, there are sensible and prudent,  
00:36:12 --> 00:36:16: I think tried and true public health intervention measures that  
00:36:16 --> 00:36:17: can reduce your overall risk.  
00:36:17 --> 00:36:19: Thanks.  
00:36:19 --> 00:36:21: So let's let's switch gears.  
00:36:21 --> 00:36:24: We've got some other questions about infection control and  
will  
00:36:24 --> 00:36:26: circle back to those,  
00:36:26 --> 00:36:28: but just wanted to touch base on.  
00:36:28 --> 00:36:31: I know John you've been thinking a lot and you  
00:36:31 --> 00:36:32: talked about this,  
00:36:32 --> 00:36:35: but this sort of coming age of lack of resources  
00:36:35 --> 00:36:37: and sort of public and private austerity.  
00:36:37 --> 00:36:39: So how? How do you first see,  
00:36:39 --> 00:36:42: you know, sort of trapped building owners?  
00:36:42 --> 00:36:43: Or, you know, public agencies,  
00:36:43 --> 00:36:47: being able to make these kinds of investments to improve

00:36:47 --> 00:36:50: sort of health outcomes in their spaces and in their

00:36:50 --> 00:36:51: communities?

00:36:51 --> 00:36:53: With what's that going to look like?

00:36:53 --> 00:36:54: How will capital flow?

00:36:57 --> 00:37:00: I think it's a fascinating question and one with tremendous

00:37:00 --> 00:37:00: opportunity.

00:37:00 --> 00:37:04: Actually, for investing in resilience.

00:37:04 --> 00:37:07: The framing of it is probably around 3 pretty big

00:37:07 --> 00:37:08: trends.

00:37:08 --> 00:37:11: One is that there are lots of perils.

00:37:11 --> 00:37:16: One is pandemic, but they're also a serious wildfire drought.

00:37:16 --> 00:37:19: Anne. It's also pretty clear that governments aren't going to

00:37:19 --> 00:37:22: have any money for anything extra for a very long

00:37:22 --> 00:37:24: time 'cause they're going out from COVID-19,

00:37:24 --> 00:37:26: so they won't be spending money on.

00:37:28 --> 00:37:32: Supporting private sector to do building upgrades or even a

00:37:32 --> 00:37:33: building.

00:37:33 --> 00:37:37: Better infrastructure, and it's also pretty clear that the costs

00:37:37 --> 00:37:40: for healthcare or can it be quite high as people

00:37:40 --> 00:37:43: think about insurance or think about treatment,

00:37:43 --> 00:37:45: but at the same time there is a lot of

00:37:46 --> 00:37:49: capital in the world still has the same capital Sir.

00:37:49 --> 00:37:51: Plus that it had a while ago.

00:37:51 --> 00:37:54: That's why real yields are now around zero and some

00:37:54 --> 00:37:55: days oil is free.

00:37:55 --> 00:37:58: So the capital wants to go somewhere.

00:37:58 --> 00:38:01: So if there's. A very clear way to invest in

00:38:01 --> 00:38:05: upgrading a building or upgrading a subway system,

00:38:05 --> 00:38:08: or upgrading a utility service that is going to lead

00:38:09 --> 00:38:13: to reduced present value of future health care costs that

00:38:13 --> 00:38:14: should be investable.

00:38:14 --> 00:38:18: That should be a way that investors should be able

00:38:18 --> 00:38:19: to think.

00:38:19 --> 00:38:22: OK, I'm going to invest in resilience here,

00:38:22 --> 00:38:25: sort of like lending a building money to put in

00:38:26 --> 00:38:30: Fire Protection or lending somebody money to put a roll

00:38:30 --> 00:38:30: bar.

00:38:30 --> 00:38:33: Lending your kid money to put roll Bar on his

00:38:33 --> 00:38:36: that go cart so he doesn't take the thing over.

00:38:36 --> 00:38:40: Never dated reference. If you don't listen to Beach Boys,

00:38:40 --> 00:38:42: but the idea that.

00:38:42 --> 00:38:45: These these perils have real costs.



00:38:45 --> 00:38:50: And the costs can be brought back too.

00:38:50 --> 00:38:53: Today present value and that they're outside investors who can

00:38:53 --> 00:38:57: invest to mitigate those perils and the impact or the

00:38:57 --> 00:39:00: likelihood of incidents and the cost of recovery is

00:39:00 --> 00:39:03: real, and it's very similar to what we've been talking

00:39:03 --> 00:39:04: about elsewhere.

00:39:04 --> 00:39:06: Annually on the resilience front,

00:39:06 --> 00:39:11: whether it's around route or see rise or heat so.

00:39:11 --> 00:39:14: Unfortunately, I think that the capital will flow to the

00:39:14 --> 00:39:16: investable projects,

00:39:16 --> 00:39:18: meaning if somebody says, well,

00:39:18 --> 00:39:21: we'd like to get such and so high rise in

00:39:21 --> 00:39:22: Los Angeles back to work.

00:39:22 --> 00:39:26: And we think that there's a private sector way to

00:39:26 --> 00:39:31: come in and a vendor financed solution that's going to

00:39:31 --> 00:39:31: do.

00:39:31 --> 00:39:34: Some kind of sensing of employees in some kind of

00:39:34 --> 00:39:37: data collection at some kind of daily cleaning and we're

00:39:37 --> 00:39:40: going to get a rebate from that from the insurance

00:39:40 --> 00:39:43: company. That's going to go to the most investable projects.

00:39:43 --> 00:39:46: And so, as in many situations that people who have

00:39:46 --> 00:39:48: good access to information,

00:39:48 --> 00:39:51: good access to capital, good access to technology will do

00:39:51 --> 00:39:51: well.

00:39:51 --> 00:39:54: So if your UI member listing for opportunity,

00:39:54 --> 00:39:57: those are the kind of places where there's opportunity and

00:39:57 --> 00:40:00: Joe and I wrote a case study about a building

00:40:00 --> 00:40:02: in New York for 25 Park Ave.

00:40:02 --> 00:40:04: Attempting to be the healthiest building in New York and

00:40:04 --> 00:40:08: the building like that presumably will attract more tenants

00:40:08 --> 00:40:11: now

00:40:08 --> 00:40:11: than even would have before because of the health factor.

00:40:11 --> 00:40:13: What does this mean for other populations?

00:40:13 --> 00:40:16: For the people who don't have as much money or

00:40:16 --> 00:40:20: as much information or as much access to technology?

00:40:20 --> 00:40:23: Not good, so if your point of view is how

00:40:23 --> 00:40:28: are we thinking about fairness and in policy that's another

00:40:28 --> 00:40:30: question to be thought about.

00:40:30 --> 00:40:32: Yeah, thank you.

00:40:32 --> 00:40:37: So let's circle back. There's a cluster of questions about

00:40:37 --> 00:40:40: treatment protocols and cleaning strategies,

00:40:40 --> 00:40:43: questions of I think this is for Jove what you

00:40:43 --> 00:40:44: think about.

00:40:44 --> 00:40:48: You know some of these more high tech solutions like

00:40:48 --> 00:40:51: bipolar ionization and electrostatic misters,

00:40:51 --> 00:40:56: and advanced filtration systems for ventilation systems.

00:40:56 --> 00:40:59: So can you talk a little bit more about those

00:40:59 --> 00:41:05: management and maintenance strategies that might be employed at the

00:41:05 --> 00:41:06: building level?

00:41:06 --> 00:41:10: And what your what? Your take on those are.

00:41:10 --> 00:41:12: Yeah, I'm happy too. Good question.

00:41:12 --> 00:41:13: Beginning a lot of that too and look.

00:41:13 --> 00:41:16: I think there's a role for technology to play.

00:41:16 --> 00:41:18: I also think there's a danger in thinking that there's

00:41:18 --> 00:41:21: any one silver bullet out there that's going to that's

00:41:21 --> 00:41:22: going to solve this for us.

00:41:22 --> 00:41:24: And This is why I keep repeating myself on the

00:41:24 --> 00:41:25: layered defense approach.

00:41:25 --> 00:41:27: It's not going to be a technology alone solution,

00:41:27 --> 00:41:29: it's going to come down to the basics.

00:41:29 --> 00:41:32: Actually, if you think about all the guidance you hear

00:41:32 --> 00:41:33: nowadays about what to do,

00:41:33 --> 00:41:36: we're talking bout the public health fundamental of washing your

00:41:36 --> 00:41:36: hands,

00:41:36 --> 00:41:37: socials and cover your cough,

00:41:37 --> 00:41:41: right? Some of the real basics here so.

00:41:41 --> 00:41:43: You know a lot of the guidance I'd be giving

00:41:43 --> 00:41:43: lately.

00:41:43 --> 00:41:44: I think there's we should.

00:41:44 --> 00:41:46: We should be thinking about.

00:41:46 --> 00:41:47: This is a many months,

00:41:47 --> 00:41:48: if not years long problem.

00:41:48 --> 00:41:51: So you could be thinking about the capital improvements that

00:41:51 --> 00:41:52: need to be done.

00:41:52 --> 00:41:53: In terms of right now,

00:41:53 --> 00:41:56: in the near term I mostly been writing about an

00:41:56 --> 00:41:59: advising people on strategies you can take right now with

00:41:59 --> 00:42:00: what's in your building,

00:42:00 --> 00:42:02: what's readily available to even take the mask,

00:42:02 --> 00:42:05: question I wrote about a couple of weeks talking bout

00:42:05 --> 00:42:07: homemade masks are not as good as the in 95.

00:42:07 --> 00:42:09: We don't want to take those in health care,

00:42:09 --> 00:42:12: but I made the recommendation that you should not use  
 00:42:12 --> 00:42:12: a homemade mask,  
 00:42:12 --> 00:42:14: and I made the recommendation is 100%  
 00:42:14 --> 00:42:17: Cotton Mask. Why? Because everyone most people have  
 cotton T  
 00:42:17 --> 00:42:20: shirt in their house and you could even create your  
 00:42:20 --> 00:42:21: own pretty quickly.  
 00:42:21 --> 00:42:22: So I think there's some danger in.  
 00:42:22 --> 00:42:24: And uh, or the potential to say,  
 00:42:24 --> 00:42:27: hey, everyone's gotta chase this one technology and deploy  
 it  
 00:42:27 --> 00:42:30: when when the technologies we have in most of our  
 00:42:30 --> 00:42:32: buildings can be effective right now.  
 00:42:32 --> 00:42:33: So from an engineering standpoint,  
 00:42:33 --> 00:42:36: to control one method mode of transmission,  
 00:42:36 --> 00:42:38: airborne bringing more fresh outdoor air,  
 00:42:38 --> 00:42:41: increasing your filtration to emerge 13 or higher on the  
 00:42:41 --> 00:42:43: recirculated air can help too.  
 00:42:43 --> 00:42:47: Minimize their exposure potential. You can use portable air  
 purifiers.  
 00:42:47 --> 00:42:50: That's a cheap, easily deployable technology.  
 00:42:50 --> 00:42:52: That's your little bit closer,  
 00:42:52 --> 00:42:53: the source, and they've been.  
 00:42:53 --> 00:42:56: They can be effective and like anything you have to  
 00:42:56 --> 00:42:59: use it right and implement it right so,  
 00:42:59 --> 00:43:02: but I don't want to decide the overall strategy that  
 00:43:02 --> 00:43:05: you have to have multiple layers of control so that  
 00:43:05 --> 00:43:06: the global technology again,  
 00:43:06 --> 00:43:08: but it's not. It's not the.  
 00:43:08 --> 00:43:09: It's not a simple answer.  
 00:43:09 --> 00:43:13: And of course with any technology what works maybe in  
 00:43:13 --> 00:43:14: a chamber.  
 00:43:14 --> 00:43:16: It's going to be different depending on how you deploy  
 00:43:16 --> 00:43:17: that,  
 00:43:17 --> 00:43:19: whether or not it actually works in the space and  
 00:43:19 --> 00:43:19: the doc,  
 00:43:19 --> 00:43:22: how much, how much circulated air is going through,  
 00:43:22 --> 00:43:25: what the residence time there is there potential for secondary  
 00:43:25 --> 00:43:26: byproduct formation?  
 00:43:26 --> 00:43:28: Not so straightforward, and you know.  
 00:43:28 --> 00:43:31: Obviously Anderson Consulting it was straightforward as to  
 say to  
 00:43:31 --> 00:43:34: my team we would never get hired because those are

00:43:34 --> 00:43:34: easy questions.

00:43:34 --> 00:43:37: So there's a reason that at least me and the

00:43:37 --> 00:43:39: people I know in this space to do consult with

00:43:39 --> 00:43:39: companies.

00:43:39 --> 00:43:42: There's a reason they're coming out and asking us to

00:43:42 --> 00:43:42: evaluate.

00:43:42 --> 00:43:45: This is not a straightforward question by any means.

00:43:45 --> 00:43:46: Uh huh.

00:43:49 --> 00:43:52: Great thank you. OK, so our next top question and

00:43:52 --> 00:43:56: then I might take moderate are privileged and ask another

00:43:56 --> 00:43:57: question and just a sack.

00:43:57 --> 00:44:00: But there's a question in the top that says it

00:44:00 --> 00:44:03: best in class protocol for mitigation,

00:44:03 --> 00:44:08: identification and containment of covid cases and coliving

00:44:08 --> 00:44:09: coworking facilities.

00:44:08 --> 00:44:09: What does that look like?

00:44:09 --> 00:44:13: And I saw another question further down that looked at,

00:44:13 --> 00:44:17: you know, sort of. How do you deal with?

00:44:17 --> 00:44:21: The legal and ethical issues around notification of building

00:44:21 --> 00:44:23: occupants.

00:44:21 --> 00:44:23: I don't know if this is a question that you

00:44:23 --> 00:44:25: guys feel like you can answer,

00:44:25 --> 00:44:27: but if you have thoughts let us know.

00:44:30 --> 00:44:32: Sure, so you know, I don't think I would weigh

00:44:32 --> 00:44:34: in on the legal side.

00:44:34 --> 00:44:37: I think there are ethical considerations we can all talk

00:44:37 --> 00:44:40: about in terms of potentially around stigma.

00:44:40 --> 00:44:42: Who has it, if that stigmatized one way or who

00:44:42 --> 00:44:45: gets it and maybe then gets an all clear pass

00:44:45 --> 00:44:48: and others don't and it creates some stigma there too.

00:44:48 --> 00:44:50: So yeah, I I don't think I'd way on the

00:44:51 --> 00:44:52: legal part at all.

00:44:52 --> 00:44:53: I will say this, you know,

00:44:53 --> 00:44:56: I. I've been an expert for plaintiffs and defense for

00:44:56 --> 00:44:57: many years.

00:44:57 --> 00:45:00: I I do expert work for the courts.

00:45:00 --> 00:45:03: And I think we should expect that there will be

00:45:03 --> 00:45:04: lawsuits around this.

00:45:04 --> 00:45:08: In fact, I've already seen information to regard already about

00:45:08 --> 00:45:10: what what the responsibility,

00:45:10 --> 00:45:14: what's the legal responsibility? What are you doing to protect

00:45:15 --> 00:45:15: your people?

00:45:15 --> 00:45:17: So that is not a legal opinion.

00:45:17 --> 00:45:20: It is my opinion. Having been an expert,

00:45:20 --> 00:45:22: that this for the courts,

00:45:22 --> 00:45:26: that this will undoubtedly result in unfortunately get many lawsuits.

00:45:29 --> 00:45:32: Giant if taken that.

00:45:32 --> 00:45:36: Medication identification and containment of Covid cases Co.

00:45:36 --> 00:45:41: Living working facilities not in the cool living would switch

00:45:41 --> 00:45:43: to the contract issue.

00:45:43 --> 00:45:47: Almost every contract in the world is now in default,

00:45:47 --> 00:45:49: so that will be a very long issue.

00:45:49 --> 00:45:51: Trying to figure out who owns what,

00:45:51 --> 00:45:54: to whom and even enforce measure clauses.

00:45:54 --> 00:45:59: Sometimes you get relief and sometimes you get compensation and.

00:45:59 --> 00:46:02: It's not going to be very clear for a very

00:46:02 --> 00:46:04: long time how that works and.

00:46:04 --> 00:46:06: If tenants get some kind of rent holiday,

00:46:06 --> 00:46:09: what does that mean for landlords and mortgage holders?

00:46:09 --> 00:46:11: So that's not our area of expertise.

00:46:11 --> 00:46:14: There are plenty of people on the call who are

00:46:14 --> 00:46:15: thinking about that.

00:46:15 --> 00:46:19: Yeah, well, let's take deeper into the gotcha.

00:46:19 --> 00:46:22: Well, I'm just going to answer that answer that maybe

00:46:22 --> 00:46:24: the first part of the question on the legal but

00:46:24 --> 00:46:28: just mentioned a challenge with this virus in particular why

00:46:28 --> 00:46:31: it's certainly it's deadly, and it's spreading quite easily.

00:46:31 --> 00:46:34: That question of, well, what do we do with people?

00:46:34 --> 00:46:38: Self quarantine, self isolation? I think probably everyone of your

00:46:38 --> 00:46:41: listeners know that one of the challenges here is that

00:46:41 --> 00:46:43: we have asymptomatic transmission occurring.

00:46:43 --> 00:46:46: So the way to approach this is not is is

00:46:46 --> 00:46:48: to act like you have it and you might infect

00:46:48 --> 00:46:49: others so.

00:46:49 --> 00:46:51: This is going to involve a lot of social trust.

00:46:51 --> 00:46:54: You bring your cop is social trust washing your hands

00:46:54 --> 00:46:54: free,

00:46:54 --> 00:46:56: that social trust, wearing mask in public.

00:46:56 --> 00:46:59: That's social trust. And so if we're going to go

00:46:59 --> 00:47:01: back to work and start Re populate our buildings were

00:47:01 --> 00:47:04: all going to act as though we have the potential

00:47:04 --> 00:47:06: to get many other people sick.

00:47:06 --> 00:47:08: And I think if we walk into a building with  
00:47:08 --> 00:47:08: that frame,  
00:47:08 --> 00:47:10: not know who is sick and going to affect me.  
00:47:10 --> 00:47:12: But what is my responsibility?  
00:47:12 --> 00:47:14: Everyone else in this building that can go along way  
00:47:14 --> 00:47:17: to changing some behaviors and approaches to how we do  
00:47:17 --> 00:47:17: this?  
00:47:17 --> 00:47:18: The building will do its job,  
00:47:18 --> 00:47:21: but healthy building strategies. But people have to do their  
00:47:21 --> 00:47:23: job to this is this is a social pact.  
00:47:25 --> 00:47:28: Right absolutely.  
00:47:28 --> 00:47:31: Can I ask a question just jumping in here on  
00:47:31 --> 00:47:35: and expanding on a question that was asked by Benjamin  
00:47:35 --> 00:47:39: Marcum about the way that Covid has exposed inequality in  
00:47:39 --> 00:47:42: our society and a lot of the strategies I know  
00:47:42 --> 00:47:47: we've talked about some low cost strategies and individual  
00:47:47 --> 00:47:51: strategies,  
00:47:51 --> 00:47:54: but some of the other ones potentially have some costs  
00:47:54 --> 00:47:58: attached to them and just wanted to get your thoughts  
00:47:58 --> 00:48:02: on how we can make sure that healthy building strategies  
00:48:02 --> 00:48:03: are accessible to everyone. And that they're not sort of  
00:48:03 --> 00:48:06: the domain of the affluent.  
00:48:06 --> 00:48:08: Are those people that are most able to pay?  
00:48:08 --> 00:48:11: I mean, I think the last thing that all of  
00:48:11 --> 00:48:15: us want to create a situation where you know we're  
00:48:15 --> 00:48:18: we're we're creating healthy environments only for the  
00:48:18 --> 00:48:19: wealthy,  
00:48:19 --> 00:48:23: so John. Or to do you have thoughts on that?  
00:48:23 --> 00:48:24: And are there, you know,  
00:48:24 --> 00:48:28: sort of Co funding models or other things that we  
00:48:28 --> 00:48:30: could be exploring?  
00:48:30 --> 00:48:33: Or I can take a stab at that and.  
00:48:33 --> 00:48:35: It's obviously a huge global question.  
00:48:35 --> 00:48:38: It's one thing to be a lawyer in New York  
00:48:38 --> 00:48:41: who can work from your apartment.  
00:48:41 --> 00:48:44: It's another thing to be a hour by hour laborer  
00:48:44 --> 00:48:47: in Delhi or Mumbai who needs to go out to  
00:48:47 --> 00:48:51: work to be able to survive and to be able  
00:48:51 --> 00:48:54: to eat and doesn't have a place to shelter.  
00:48:54 --> 00:48:58: So like a lot of things in.  
00:48:58 --> 00:49:01: Environment and climate that people with The Who are the  
00:49:01 --> 00:49:04: most vulnerable are the most vulnerable that at least  
00:49:04 --> 00:49:07: resilient,

00:48:58 --> 00:49:01: whether it's about flooding in in Bangladesh or about covid  
00:49:01 --> 00:49:02: and healthy buildings.  
00:49:02 --> 00:49:05: One of the general benefits of healthy buildings is,  
00:49:05 --> 00:49:09: for the most part they aren't very expensive and most  
00:49:09 --> 00:49:09: of the time,  
00:49:09 --> 00:49:12: as you've heard, Joe say the recommendation is run the  
00:49:13 --> 00:49:14: stupid fans change.  
00:49:14 --> 00:49:16: The filters don't cheap out and save 2 pennies on  
00:49:17 --> 00:49:20: electricity because you're keeping the windows closed when  
you could  
00:49:21 --> 00:49:22: be saving thousands of dollars.  
00:49:22 --> 00:49:25: And in health by.  
00:49:25 --> 00:49:31: Run the building healthier. The second aspect is probably  
one  
00:49:31 --> 00:49:32: of.  
00:49:32 --> 00:49:36: Similar to lots of other issues where there are kind  
00:49:36 --> 00:49:37: of three.  
00:49:37 --> 00:49:40: Broad outcomes one is that there's some kind of regulation  
00:49:40 --> 00:49:41: like government,  
00:49:41 --> 00:49:43: like makes a law. For example,  
00:49:43 --> 00:49:48: eventually United States pretty much required sprinklers in  
every high  
00:49:48 --> 00:49:52: rise building because that was a matter of health.  
00:49:52 --> 00:49:55: Or government writes a check and government in the United  
00:49:55 --> 00:49:57: States typically has gone out and said yes,  
00:49:57 --> 00:50:01: we're going to have a working sanitation system because  
that's  
00:50:01 --> 00:50:02: better for public health.  
00:50:02 --> 00:50:06: So those are both phenomena where governments that have  
some  
00:50:06 --> 00:50:06: consensus.  
00:50:06 --> 00:50:10: Emphasize consensus, make a law that people agree on or  
00:50:10 --> 00:50:13: finance something and there's I think going to be still  
00:50:13 --> 00:50:17: plenty of opportunity to fund those kind of opportunities in  
00:50:17 --> 00:50:20: the emerging world. They do a lot of work at  
00:50:20 --> 00:50:22: HPS now in Africa and Latin America,  
00:50:22 --> 00:50:24: and look at those kinds of issues.  
00:50:24 --> 00:50:27: The second is that.  
00:50:27 --> 00:50:30: Private sector sees its way too.  
00:50:30 --> 00:50:32: A reason to invest in some of these things.  
00:50:32 --> 00:50:36: So suppose you're very large employer of relatively low wage  
00:50:36 --> 00:50:39: people like a Walmart of the Postal Service or Amazon  
00:50:39 --> 00:50:40: or CVS.

00:50:40 --> 00:50:41: Aetna to name a few.  
 00:50:41 --> 00:50:44: It doesn't really do you much good to have your  
 00:50:44 --> 00:50:45: people be sick,  
 00:50:45 --> 00:50:48: and you could imagine those kind of employers having a  
 00:50:48 --> 00:50:52: supplement for people at their home to say will supplement  
 00:50:52 --> 00:50:54: your rent or will help you get a air quality  
 00:50:54 --> 00:50:58: monitor will help you get a air purifier or something  
 00:50:58 --> 00:51:00: like that if it's going to help you.  
 00:51:00 --> 00:51:02: I'd be healthier and work better,  
 00:51:02 --> 00:51:06: particularly because we're going to so reduce our healthcare  
 costs,  
 00:51:06 --> 00:51:07: not just beyond the sniffles,  
 00:51:07 --> 00:51:09: and beyond the occasional.  
 00:51:11 --> 00:51:14: In case the seasonal flu are beyond these really debilitating  
 00:51:14 --> 00:51:17: diseases like covid that it's going to be worth our  
 00:51:17 --> 00:51:17: while,  
 00:51:17 --> 00:51:20: I guess you could imagine the situation like that.  
 00:51:20 --> 00:51:22: So one is that.  
 00:51:22 --> 00:51:26: Good government that's.  
 00:51:26 --> 00:51:29: In which people have confidence makes a lot or spend  
 00:51:29 --> 00:51:30: some money.  
 00:51:30 --> 00:51:32: The second is private sector sees its way to invest  
 00:51:32 --> 00:51:34: in some of these things.  
 00:51:34 --> 00:51:36: Or you can even extend that and say MSN Boston.  
 00:51:36 --> 00:51:39: Wouldn't it make sense for big employers like mass,  
 00:51:39 --> 00:51:43: general and Harvard infidelity to help the transit system to  
 00:51:43 --> 00:51:46: sterilize all their buses and subways and regular basis  
 because  
 00:51:46 --> 00:51:48: it helps your players work better.  
 00:51:48 --> 00:51:51: There could be. You can imagine the transfer that way,  
 00:51:51 --> 00:51:55: particularly in a time of I really digressed into infrastructure,  
 00:51:55 --> 00:51:57: finance, place. We're not just.  
 00:51:57 --> 00:51:59: Any interest in pools somewhere through taxes,  
 00:51:59 --> 00:52:02: but you're applying it directly with cashless transfers right?  
 00:52:02 --> 00:52:05: To the cleaning of that individual subway car.  
 00:52:05 --> 00:52:09: The third alternative, after government writes a check and  
 makes  
 00:52:09 --> 00:52:11: the law or private sector,  
 00:52:11 --> 00:52:13: sees its way to support these things is chaos.  
 00:52:13 --> 00:52:16: Free for all, like we're seeing now in cobit of  
 00:52:16 --> 00:52:18: every state for itself,  
 00:52:18 --> 00:52:22: or we're seeing internationally every nation for itself.  
 00:52:22 --> 00:52:24: One would think that when we have a virus like



00:52:24 --> 00:52:25: this that's attacking all of humanity,  
00:52:25 --> 00:52:27: that all of humanity would attack it together.  
00:52:27 --> 00:52:32: That doesn't seem to be their approach at the moment.  
00:52:32 --> 00:52:34: So a lot of my work is about is how  
00:52:34 --> 00:52:37: private sector funders can find their way to see fit  
00:52:37 --> 00:52:39: to fund some of these things and you see it  
00:52:39 --> 00:52:42: quite a bit, notably in the emerging world,  
00:52:42 --> 00:52:46: notably in sanitation, because it's so clear that better  
sanitation  
00:52:46 --> 00:52:48: leads to direct public health outcomes,  
00:52:48 --> 00:52:52: that funders and governments will spend money up front  
even  
00:52:52 --> 00:52:56: to public private partnerships for water treatment and  
sanitation,  
00:52:56 --> 00:52:59: they can find the capital and they can incent the  
00:52:59 --> 00:53:02: private sector to find the capital with with.  
00:53:02 --> 00:53:07: Essentially, with the equivalent of power purchase agreement  
for sanitation  
00:53:07 --> 00:53:08: to do these things,  
00:53:08 --> 00:53:11: and I think that with the amount of capital in  
00:53:11 --> 00:53:11: the world,  
00:53:11 --> 00:53:15: the amount of need in the lack of.  
00:53:15 --> 00:53:17: Of.  
00:53:17 --> 00:53:21: Consensus in the part of governments that some of those  
00:53:21 --> 00:53:25: opportunities will both be necessary and also be available.  
00:53:25 --> 00:53:28: And so we've got questions down below that are looking  
00:53:28 --> 00:53:29: at sort of.  
00:53:29 --> 00:53:30: What are the, you know,  
00:53:30 --> 00:53:32: sort of covered some of this,  
00:53:32 --> 00:53:34: but on the building level,  
00:53:34 --> 00:53:37: what are the some of the lower cost options that  
00:53:37 --> 00:53:42: maybe smaller businesses like restaurants and other folks  
can should  
00:53:42 --> 00:53:45: be considering when it comes to protective measures in their  
00:53:45 --> 00:53:47: space?  
00:53:47 --> 00:53:50: Yeah, I think John. I think we've talked about this  
00:53:50 --> 00:53:52: a bunch of John hit on it right there that  
00:53:52 --> 00:53:55: that I think it's a total false premise that healthy  
00:53:55 --> 00:53:58: buildings are expelled, expensive buildings or just not.  
00:53:58 --> 00:54:00: Any way you look at it just in terms of  
00:54:00 --> 00:54:00: real cost.  
00:54:00 --> 00:54:03: And once you factor in the help and another cognition,  
00:54:03 --> 00:54:05: benefits and otherwise it overwhelms it.

00:54:05 --> 00:54:07: I I think what where that this change so so

00:54:08 --> 00:54:11: anyway there there are really simple low-cost strategies could prove

00:54:11 --> 00:54:13: you can do to improve your health.

00:54:13 --> 00:54:15: And importantly being just COVID-19 right now.

00:54:15 --> 00:54:16: What else you have to do?

00:54:16 --> 00:54:20: That's beyond the building. To improve the health or maybe

00:54:20 --> 00:54:22: reopen your restaurant eventually,

00:54:22 --> 00:54:24: or think about your salon or whatever it is that

00:54:24 --> 00:54:26: you that you have to reopen.

00:54:26 --> 00:54:29: We're working with some really interesting companies right now that

00:54:29 --> 00:54:32: are in places that are really difficult to think about

00:54:32 --> 00:54:34: reopening out of Europe in schools.

00:54:34 --> 00:54:36: How do we open reopen theater or sports?

00:54:36 --> 00:54:39: I mean these are challenging questions but really confident we

00:54:39 --> 00:54:39: can.

00:54:39 --> 00:54:42: We can deploy these strategies and get anything back.

00:54:42 --> 00:54:44: Really I do. I think we can have a road

00:54:44 --> 00:54:45: map for any industry to come back.

00:54:45 --> 00:54:48: I'm actually I'm quite confident in that.

00:54:48 --> 00:54:50: Here's what has to change though.

00:54:50 --> 00:54:53: We're grossly under investing in public health,

00:54:53 --> 00:54:54: right? I think most people.

00:54:54 --> 00:54:57: This is the first time they thought of public health

00:54:57 --> 00:54:57: this outbreak,

00:54:57 --> 00:55:00: right? So it's good, it's public health moment.

00:55:00 --> 00:55:03: But the challenge in public health has been forever.

00:55:03 --> 00:55:05: But no one invests in public health because we say

00:55:05 --> 00:55:08: in public health and public health works works,

00:55:08 --> 00:55:11: nothing happens, and so it's hard to invest in things

00:55:11 --> 00:55:14: when you think when you don't see the tangible benefit.

00:55:14 --> 00:55:16: And so even in the building were doing things that

00:55:17 --> 00:55:19: are based on engineering code minimums.

00:55:19 --> 00:55:21: But rarely are we thinking about public health.

00:55:21 --> 00:55:25: The preventative benefits to taking these precautionary steps to design,

00:55:25 --> 00:55:29: operate and maintain our buildings better and that really,

00:55:29 --> 00:55:30: really has to change it.

00:55:30 --> 00:55:33: When I think about any organization you know,

00:55:33 --> 00:55:35: think about the company you work in,

00:55:35 --> 00:55:38: who's responsible for your health.

00:55:38 --> 00:55:39: Is it HR? You know,  
 00:55:39 --> 00:55:40: if I said who's responsible for energy,  
 00:55:40 --> 00:55:42: you know?  
 00:55:42 --> 00:55:44: Who's responsible for your help?  
 00:55:44 --> 00:55:45: Is it the CEO is HR?  
 00:55:45 --> 00:55:47: Who do you turn to for that?  
 00:55:47 --> 00:55:50: And I would argue it's everybody's responsibility,  
 00:55:50 --> 00:55:52: but the fact that we probably don't even know that  
 00:55:52 --> 00:55:55: answer to the question in your organization tells you a  
 00:55:55 --> 00:55:58: lot about our current approach and how we think about  
 00:55:58 --> 00:56:01: health and public health and preventive measures.  
 00:56:01 --> 00:56:04: It's an expense we don't really see the benefits.  
 00:56:04 --> 00:56:06: It's hard to quantify. You know John was sick from  
 00:56:06 --> 00:56:07: work in February.  
 00:56:07 --> 00:56:11: Well, was that because of the buildings that are responsible?  
 00:56:11 --> 00:56:12: He just got sick or so?  
 00:56:12 --> 00:56:14: It's hard to quantify all of these things.  
 00:56:14 --> 00:56:16: But we know the evidence is deep,  
 00:56:16 --> 00:56:19: decades deep. That healthy building strategies lead to better,  
 00:56:19 --> 00:56:21: fewer sick sick building symptoms syndrome,  
 00:56:21 --> 00:56:25: fewer sick building symptoms, lowered factious disease  
 transmission,  
 00:56:25 --> 00:56:27: better cognitive function. The list goes on and on and  
 00:56:28 --> 00:56:28: on,  
 00:56:28 --> 00:56:29: so the benefits are there.  
 00:56:29 --> 00:56:32: They're just enterprise wide, and today it just hasn't been  
 00:56:32 --> 00:56:33: prioritized.  
 00:56:33 --> 00:56:34: It's a real source of frustration.  
 00:56:34 --> 00:56:36: Fell as they got animated,  
 00:56:36 --> 00:56:38: but it's a source of frustration we've had in public  
 00:56:38 --> 00:56:41: health forever that we under invest and you asked about  
 00:56:41 --> 00:56:44: these communities that are bearing the brunt of this.  
 00:56:44 --> 00:56:46: That's an underinvestment in public health too,  
 00:56:46 --> 00:56:47: so you're seeing that in.  
 00:56:47 --> 00:56:51: All scales within a building within an organization and and  
 00:56:51 --> 00:56:54: within countries and regions and across countries.  
 00:56:54 --> 00:56:56: Yeah, so let me just while we're there,  
 00:56:56 --> 00:56:58: why don't we talk about you know?  
 00:56:58 --> 00:57:00: What do you guys see as the role of the  
 00:57:00 --> 00:57:01: real estate industry?  
 00:57:01 --> 00:57:05: And you know, really, thinking about bolstering those public  
 health  
 00:57:05 --> 00:57:09: efforts and you know helping to ensure that something like

00:57:09 --> 00:57:12: this pandemic doesn't happen again at this kind of scale.

00:57:12 --> 00:57:15: So folks on the call or private sector leaders and

00:57:15 --> 00:57:16: real estate folks.

00:57:16 --> 00:57:18: So what? What is the rule that you?

00:57:18 --> 00:57:20: That you think would be most helpful for us and

00:57:20 --> 00:57:21: for them.

00:57:23 --> 00:57:26: Well, you know we stayed right in the book and

00:57:26 --> 00:57:27: I think it's more true than ever.

00:57:27 --> 00:57:29: Sorry John still fired up it's,

00:57:29 --> 00:57:32: you know. Say the decisions we make today regarding our

00:57:32 --> 00:57:35: buildings will determine our collective health for generation,

00:57:35 --> 00:57:37: and that sounds like something a professor would say,

00:57:37 --> 00:57:39: and it sounds wild. But you know,

00:57:39 --> 00:57:41: it's the truth, and I think we're all probably recognizing

00:57:42 --> 00:57:42: that right now.

00:57:42 --> 00:57:44: So if you're in the real estate business,

00:57:44 --> 00:57:46: you're actually in the health care business.

00:57:46 --> 00:57:49: You have responsibility for the health of everyone in your

00:57:49 --> 00:57:49: building,

00:57:49 --> 00:57:51: and if you take these simple steps,

00:57:51 --> 00:57:53: I think we make quite a compelling case based on

00:57:53 --> 00:57:55: the science based on the business science that this is

00:57:55 --> 00:57:58: a good investment for you and actually leads to returns

00:57:58 --> 00:58:00: on your building. So it's not even no ones asked

00:58:00 --> 00:58:01: me to spend money,

00:58:01 --> 00:58:03: don't even recruit you, recoup that money.

00:58:03 --> 00:58:07: In multiple, so I think it makes sense if you

00:58:07 --> 00:58:11: think about that role in changing from.

00:58:11 --> 00:58:13: How you think about your building in terms of a

00:58:13 --> 00:58:15: health promotion tool that will go a long way to

00:58:15 --> 00:58:17: improving conditions for everybody.

00:58:19 --> 00:58:22: And argue that there are two ways to answer the

00:58:22 --> 00:58:23: question.

00:58:23 --> 00:58:24: One is as a collective answer,

00:58:24 --> 00:58:29: collective action problem and one is as an information

00:58:29 --> 00:58:29: dissemination

00:58:29 --> 00:58:29: problem.

00:58:29 --> 00:58:33: So if more collective action problem

00:58:33 --> 00:58:37: Rose, industry is influential.

00:58:37 --> 00:58:40: Voice in global economy in the United States economy,

00:58:40 --> 00:58:44: and there's often cohesion around some building code

00:58:40 --> 00:58:44: issues.

00:58:44 --> 00:58:47: Certainly on tax issues in real estate.

00:58:47 --> 00:58:49: And if it was felt in a city or a

00:58:49 --> 00:58:53: state that it was really important to have XYZ thing

00:58:53 --> 00:58:56: accomplished from a regulatory point of view or from a

00:58:56 --> 00:59:00: public transit point of view that a number of important

00:59:00 --> 00:59:04: real estate leaders skiing together might be able to influence

00:59:04 --> 00:59:05: that,

00:59:05 --> 00:59:07: we've seen it before, whether it's in.

00:59:07 --> 00:59:11: In zoning or in various regulations you would also be

00:59:11 --> 00:59:15: possible for owners to contribute or investors to contribute

00:59:15 --> 00:59:18: the

00:59:18 --> 00:59:22: way you see business improvement districts and so forth.

00:59:22 --> 00:59:26: The second is as an information dissemination question.

00:59:26 --> 00:59:26: This is a gigantic industry by Symmetra largest industry in

00:59:26 --> 00:59:31: the world,

00:59:31 --> 00:59:32: and hugely fragmented mystery were the largest players

00:59:32 --> 00:59:35: haven't immeasurably

00:59:35 --> 00:59:38: small market share,

00:59:38 --> 00:59:40: and the sort of big thinker elite tends to be

00:59:40 --> 00:59:41: in the global financial centers in.

00:59:41 --> 00:59:44: In Tokyo or Frankfurt or New York or Mumbai or

00:59:44 --> 00:59:46: Shanghai,

00:59:46 --> 00:59:49: and you see that the most awful tenants who have

00:59:49 --> 00:59:50: a big balance sheet and a very long runway.

00:59:50 --> 00:59:54: Doing some creative things with some of the big most

00:59:54 --> 00:59:57: awful landlords.

00:59:57 --> 01:00:00: How does that then percolate out from Boston and

01:00:00 --> 01:00:03: Philadelphia

01:00:03 --> 01:00:06: and Washington out into smaller places in smaller cities?

01:00:06 --> 01:00:06: Until your prototypical mom and pop who own a couple

01:00:06 --> 01:00:09: strip malls and maybe some apartment buildings?

01:00:09 --> 01:00:13: Well, that's happened over and over and over again in

01:00:13 --> 01:00:14: our industry.

01:00:14 --> 01:00:16: Whether it's around. Air conditioning elevators,

01:00:16 --> 01:00:19: rubber roofs, Fire Protection, lots of things that are green

01:00:19 --> 01:00:23: buildings for example.

01:00:23 --> 01:00:26: It's taken 25 years, but at least most people are

01:00:26 --> 01:00:27: aware there's a concept of green buildings,

01:00:27 --> 01:00:30: so. Twitter organization has both a collective action

01:00:30 --> 01:00:33: opportunity to

01:00:33 --> 01:00:36: speak with one voice that it can organize,

01:00:36 --> 01:00:39: that voice, which is not a given,

01:00:39 --> 01:00:42: and secondarily to help disseminate best practices.

01:00:30 --> 01:00:32: That's why Joe and I wrote this book,  
01:00:32 --> 01:00:35: and that's why we've written our teaching case studies to  
01:00:36 --> 01:00:39: help people think about the really compelling opportunities to  
provide  
01:00:39 --> 01:00:41: better environments with simple,  
01:00:41 --> 01:00:43: healthy building solutions in now,  
01:00:43 --> 01:00:45: in COVID-19 with more complex,  
01:00:45 --> 01:00:47: healthy buildings, healthy building solutions.  
01:00:50 --> 01:00:52: Great.  
01:00:52 --> 01:00:55: Alright, well we just have a few more minutes and  
01:00:55 --> 01:00:58: let me just run through some of these sort of  
01:00:58 --> 01:01:01: more tactical things and then and then we'll wrap with  
01:01:01 --> 01:01:03: a with a big picture question,  
01:01:03 --> 01:01:06: but we've gotten some upvotes on this question about touch  
01:01:06 --> 01:01:07: lists,  
01:01:07 --> 01:01:10: feature security features, or or door handles.  
01:01:10 --> 01:01:12: I think Joe you mentioned this little earlier,  
01:01:12 --> 01:01:17: but what? What is the future of touchless options within  
01:01:17 --> 01:01:20: offices or residential buildings?  
01:01:20 --> 01:01:22: Well, I think that I've been having a lot of  
01:01:22 --> 01:01:23: those conversations.  
01:01:23 --> 01:01:25: I. I think it's clear if you're thinking about the  
01:01:25 --> 01:01:27: kind of improvements you want to make that people that  
01:01:27 --> 01:01:30: would reassure people that also can help in the risk  
01:01:30 --> 01:01:32: mitigation. That's one right. We know this virus could spread.  
01:01:32 --> 01:01:35: I mean how many people have been to grocery store  
01:01:35 --> 01:01:35: lately?  
01:01:35 --> 01:01:37: I bet you're doing things differently.  
01:01:37 --> 01:01:39: You open the door with your elbow now probably,  
01:01:39 --> 01:01:40: or if your foot if you have to go into  
01:01:40 --> 01:01:41: rest or something,  
01:01:41 --> 01:01:44: you might be putting your something over your sleeve over  
01:01:44 --> 01:01:45: your hand to open the door.  
01:01:45 --> 01:01:47: So I think people would be looking for those kind  
01:01:47 --> 01:01:49: of touch list environments,  
01:01:49 --> 01:01:52: particularly in the bathroom. So I expect we'll see a  
01:01:52 --> 01:01:53: lot more of that,  
01:01:53 --> 01:01:54: yeah?  
01:01:54 --> 01:01:57: OK, and then we talked a lot about office,  
01:01:57 --> 01:02:01: but is there anything that is particularly sort of deferential  
01:02:01 --> 01:02:05: about residential real estate in terms of property  
management,  
01:02:05 --> 01:02:09: technology design? What changes do you foresee for the

residential  
sector?

01:02:09 --> 01:02:10: It can take that with respect to the longer view.

01:02:13 --> 01:02:16: Obviously in the short view,

01:02:16 --> 01:02:17: people need to be really careful about the doors and

01:02:17 --> 01:02:21: the elevators in the air.

01:02:21 --> 01:02:22: In the longer term.

01:02:22 --> 01:02:23: I think we're going to see a propagation of what

01:02:26 --> 01:02:28: I mentioned earlier.

01:02:29 --> 01:02:30: The ability of individual people that have their own air

01:02:30 --> 01:02:33: quality monitors.

01:02:33 --> 01:02:34: And you can tell in your own kitchen your apartment

01:02:34 --> 01:02:37: or your own living room what the particulars are.

01:02:37 --> 01:02:40: Wet some other biologics are what some of the gases

01:02:40 --> 01:02:43: are,

01:02:43 --> 01:02:43: and you can share that information in real time.

01:02:43 --> 01:02:46: If you want to, with a lot of people out

01:02:46 --> 01:02:49: in the cloud with time series data.

01:02:49 --> 01:02:51: And as people get more and more aware of.

01:02:51 --> 01:02:55: Public of healthy buildings, in particular in in virus time.

01:02:55 --> 01:02:58: They'll be thinking about the building health,

01:02:58 --> 01:03:01: not just as an abstraction.

01:03:01 --> 01:03:02: Like do I smell my neighbors cooking,

01:03:02 --> 01:03:04: but also is building gonna keep me healthier if you

01:03:04 --> 01:03:07: couple that with the many places in the world where

01:03:07 --> 01:03:10: the outdoor air is dirtier than the indoor air,

01:03:10 --> 01:03:12: you get another generation of application of that information.

01:03:12 --> 01:03:16: So in the United States building codes,

01:03:16 --> 01:03:18: we assume that the outdoor air cleaners and indoor and

01:03:18 --> 01:03:21: we call for certain amount of air changes.

01:03:21 --> 01:03:23: That doesn't necessarily apply.

01:03:23 --> 01:03:26: Outside the cover time in Shanghai or Delhi in Mexico

01:03:26 --> 01:03:29: City or Jakarta or even parts of Los Angeles.

01:03:29 --> 01:03:31: So if informed consumers are starting to share with each

01:03:31 --> 01:03:34: other what the conditions are in this Department,

01:03:34 --> 01:03:37: there bout to render this condo there about to buy.

01:03:37 --> 01:03:39: This is a whole another level of information that they

01:03:39 --> 01:03:42: never had before five years ago.

01:03:42 --> 01:03:44: If you want to know into air quality,

01:03:44 --> 01:03:46: you had to hire industrial hygienist.

01:03:46 --> 01:03:48: They brought this big tank.

01:03:48 --> 01:03:49: They went off to the lab and they came back.

01:03:49 --> 01:03:52:

01:03:52 --> 01:03:55: In the information, say with the building manager,  
 01:03:55 --> 01:04:00: now it's democratized. And if people are thinking about.  
 01:04:00 --> 01:04:03: Restaurant reservations in OpenTable or Yelp or all the ones  
 01:04:03 --> 01:04:05: that don't even know about.  
 01:04:05 --> 01:04:08: They'll be thinking even more about buildings this way.  
 01:04:08 --> 01:04:10: And as the economy slows down,  
 01:04:10 --> 01:04:12: the people who have a check who can actually pay  
 01:04:12 --> 01:04:15: rent and cover a mortgage will have a buyers market  
 01:04:15 --> 01:04:16: in that regard.  
 01:04:16 --> 01:04:19: So I think that there's going to be a tremendous  
 01:04:19 --> 01:04:22: change in peoples selectivity about the kind of buildings they  
 01:04:23 --> 01:04:25: think are going to be healthy with respect to.  
 01:04:25 --> 01:04:29: Both viruses can also particulates and gases in the future  
 01:04:29 --> 01:04:30: and that.  
 01:04:30 --> 01:04:32: Condo developers in their apartment building,  
 01:04:32 --> 01:04:35: constructors in particular will have to be aware of that,  
 01:04:35 --> 01:04:39: or they'll have a building this effectively.  
 01:04:39 --> 01:04:41: I'm in no fly list because people said I want  
 01:04:41 --> 01:04:41: to go there.  
 01:04:41 --> 01:04:42: It's not a healthy building.  
 01:04:45 --> 01:04:48: Alright, well as we wrap I'll just ask questions.  
 01:04:48 --> 01:04:51: You're building. Your book came out today.  
 01:04:51 --> 01:04:54: Any special instructions for people on where to find it  
 01:04:54 --> 01:04:56: or how to get it?  
 01:04:56 --> 01:04:59: And we've gotten a question about whether or not you'll  
 01:04:59 --> 01:05:01: be adding any content,  
 01:05:01 --> 01:05:05: or, you know, releasing any special sections as specific to  
 01:05:05 --> 01:05:08: COVID-19 or sort of current pandemic.  
 01:05:08 --> 01:05:11: So Joe, let me take her first and then you  
 01:05:11 --> 01:05:12: can take a second.  
 01:05:12 --> 01:05:14: The publishers, Harvard University press.  
 01:05:14 --> 01:05:18: However, I personally I'm a big fan of independent  
 01:05:18 --> 01:05:21: bookstores,  
 01:05:21 --> 01:05:24: and if you have a local independent bookstore,  
 01:05:24 --> 01:05:26: they almost certainly can help you order this book today.  
 01:05:26 --> 01:05:28: So I actually advocate for that.  
 01:05:28 --> 01:05:31: The second around the add on is that a lot  
 01:05:31 --> 01:05:32: of the work that Joe and I do is also  
 01:05:32 --> 01:05:35: about cities and urbanization,  
 01:05:35 --> 01:05:39: and we think there are extensions beyond healthy,  
 01:05:39 --> 01:05:42: healthy buildings into what makes for healthy Metropolis from  
 the point of view of can we get clean air can



01:05:42 --> 01:05:42: get clean.

01:05:42 --> 01:05:45: Can we get sunshine? Can we get ventilation alot of

01:05:45 --> 01:05:49: which would have ameliorated the problems with the wet market

01:05:49 --> 01:05:51: in Wuhan or of Liberia in West Point in Liberia

01:05:51 --> 01:05:55: where Ebola came from? If you just had.

01:05:55 --> 01:05:58: More open streets that add ventilation in a lot of

01:05:58 --> 01:06:01: these can be paid for with public health savings,

01:06:01 --> 01:06:04: so that's probably the next add on for the team

01:06:04 --> 01:06:08: in Joe courses working specifically with his colleagues at the

01:06:08 --> 01:06:11: School of Public Health around the pandemic,

01:06:11 --> 01:06:14: so I'll let you finish on that.

01:06:14 --> 01:06:16: Yeah thanks that's great and so and the one stop

01:06:16 --> 01:06:17: shop for our book.

01:06:17 --> 01:06:20: Not to for Johns Point or find your local seller.

01:06:20 --> 01:06:24: We create a website called healthy buildings book  
healthybuildingsbook.com and

01:06:24 --> 01:06:27: we actually have links to an indilinx if you find

01:06:27 --> 01:06:28: a find a local bookstore.

01:06:28 --> 01:06:31: That's great. My local bookstores on there too.

01:06:31 --> 01:06:32: If you want to buy from them.

01:06:32 --> 01:06:35: We also have links to the for the main booksellers

01:06:35 --> 01:06:35: online,

01:06:35 --> 01:06:37: so you can find the local shop that way.

01:06:37 --> 01:06:41: It healthybuildingsbook.com alright, so I sound like  
salesperson there.

01:06:41 --> 01:06:44: Sorry yeah. So so on the question of what else

01:06:44 --> 01:06:44: you know.

01:06:44 --> 01:06:47: I've been writing a lot and I'll give you another

01:06:47 --> 01:06:47: resource.

01:06:47 --> 01:06:51: My healthy buildings program and harvest at fourhealth.org  
Forc help

01:06:51 --> 01:06:52: I have,

01:06:52 --> 01:06:54: I think 9 OP EDS published in the last three

01:06:54 --> 01:06:54: weeks,

01:06:54 --> 01:06:56: USA in New York Times,

01:06:56 --> 01:06:58: Washington Post all on on distilling that signs of the

01:06:59 --> 01:06:59: simple tips,

01:06:59 --> 01:07:01: all of its there on that website.

01:07:01 --> 01:07:04: Also we have a specific page related to COVID-19.

01:07:04 --> 01:07:06: You can find that you can navigate that several ways

01:07:07 --> 01:07:07: to get there,

01:07:07 --> 01:07:10: but has tips for you there including all the science

01:07:10 --> 01:07:12: and peer reviewed research.

01:07:12 --> 01:07:13: If you really want to dive deep,

01:07:13 --> 01:07:16: we have. A whole bunch of how to choose what

01:07:16 --> 01:07:17: to do in your home,

01:07:17 --> 01:07:19: how to clean your electronics and also the section in

01:07:19 --> 01:07:20: case you're trying to find it.

01:07:20 --> 01:07:22: You know it's a fire hose of information.

01:07:22 --> 01:07:24: How do you figure out what's real and not so

01:07:24 --> 01:07:26: we have a link through voices we trust.

01:07:26 --> 01:07:29: So these are scientists I know first hand and trust.

01:07:29 --> 01:07:31: Well in the information there giving out so you can

01:07:31 --> 01:07:33: visit voices we trust section to find some other people

01:07:33 --> 01:07:35: to listen to besides besides here in John and I

01:07:35 --> 01:07:37: talked today. The other thing John,

01:07:37 --> 01:07:39: you know we mentioned in terms of what else is

01:07:39 --> 01:07:41: coming so we have the book and will there be

01:07:41 --> 01:07:42: any additions?

01:07:42 --> 01:07:45: Johns talking, Lawrence Farm big Picture but we were

01:07:45 --> 01:07:47: thinking

01:07:47 --> 01:07:50: about going next together in this collaboration.

01:07:50 --> 01:07:53: Any more immediate future? A lot of what we talked

01:07:53 --> 01:07:56: about today will show up in Harvard Business Review article

01:07:56 --> 01:07:59: that comes out either this week or next.

01:07:59 --> 01:08:01: John, I did a podcast with Harvard Business School that

01:08:01 --> 01:08:04: I think comes out this week called Cold Call and

01:08:04 --> 01:08:07: maybe there's one or two others that are coming.

01:08:07 --> 01:08:07: John, that yeah. Anyway, there's a lot that we had

01:08:07 --> 01:08:10: to tell.

01:08:10 --> 01:08:11: We have a piece coming out in Urban Land magazine

01:08:11 --> 01:08:14: in two weeks also.

01:08:14 --> 01:08:16: Well, yeah, I don't want to tell Rachel Thunder and

01:08:16 --> 01:08:18: that there's no end of information.

01:08:18 --> 01:08:21: We can include links to these various.

01:08:21 --> 01:08:22: Resources, and I think we have a roundup on our

01:08:22 --> 01:08:25: on our page as well.

01:08:25 --> 01:08:28: We can include links as we send it out,

01:08:28 --> 01:08:31: so just in 30 seconds each as we wrap here,

01:08:31 --> 01:08:34: you know what is the single most important thing that

01:08:34 --> 01:08:34: you would like listeners to take away from this web

01:08:34 --> 01:08:38: and R.

01:08:38 --> 01:08:40: What's the most important thing for real estate leaders to

01:08:40 --> 01:08:40: be doing or thinking about right now?

01:08:40 --> 01:08:43: Let me go first and Joe you can go 2nd.  
 01:08:43 --> 01:08:46: And actually there's two. One is run the fans.  
 01:08:46 --> 01:08:48: It's really cheap to run the fans.  
 01:08:48 --> 01:08:52: In the second is that buildings compete.  
 01:08:52 --> 01:08:55: And healthy building is going to go beyond being a  
 01:08:55 --> 01:08:57: nice to have into being a must have.  
 01:09:00 --> 01:09:02: Yeah I think so. John covered the healthy building side,  
 01:09:02 --> 01:09:04: so I'm going to put on the help that the  
 01:09:04 --> 01:09:07: public health professors had here and go with this.  
 01:09:07 --> 01:09:09: This is an all in moment like we've never had,  
 01:09:09 --> 01:09:10: so you know, as my Dean says,  
 01:09:10 --> 01:09:12: whatever skill, whatever your passion,  
 01:09:12 --> 01:09:14: there's a place for you in public health.  
 01:09:14 --> 01:09:16: So we need everyone to be all in.  
 01:09:16 --> 01:09:18: And that means if you're a comedian,  
 01:09:18 --> 01:09:19: make us laugh and artist,  
 01:09:19 --> 01:09:20: bring some joy to the world.  
 01:09:20 --> 01:09:23: I'm a scientist. I'm going to keep doing science in  
 01:09:23 --> 01:09:23: real estate.  
 01:09:23 --> 01:09:25: Think about these healthy building strategies.  
 01:09:25 --> 01:09:28: If you have a particular talent in your company that  
 01:09:28 --> 01:09:29: you can apply.  
 01:09:29 --> 01:09:32: Do it. You know, there's nothing everything's at stake here,  
 01:09:32 --> 01:09:34: right? The lives of 10s of thousands,  
 01:09:34 --> 01:09:36: if not more, people are at stake.  
 01:09:36 --> 01:09:37: Entire global economy is at stake,  
 01:09:37 --> 01:09:39: so we need to apply it.  
 01:09:39 --> 01:09:40: It is an all in moment.  
 01:09:40 --> 01:09:44: So then join in and bring whatever you can bear  
 01:09:44 --> 01:09:44: to this.  
 01:09:44 --> 01:09:48: Alright, well thank you very much gentlemen and thanks to  
 01:09:48 --> 01:09:51: all of you participants for joining.  
 01:09:51 --> 01:09:53: We actually I knew this would happen.  
 01:09:53 --> 01:09:57: We had many more questions than we could get to,  
 01:09:57 --> 01:10:00: but we hope that you will TuneIn for our future  
 01:10:00 --> 01:10:01: webinars.  
 01:10:01 --> 01:10:05: We're going to do our best to continue to shed  
 01:10:05 --> 01:10:06: light and.  
 01:10:06 --> 01:10:09: Add information to, you know the and add to what  
 01:10:09 --> 01:10:13: people need to know about this pandemic going forward.  
 01:10:13 --> 01:10:17: Next slide Sarah. So if you're interested in learning more,  
 01:10:17 --> 01:10:20: all invite you to attend upcoming webinars in the series

01:10:20 --> 01:10:22: are next one as I mentioned,  
01:10:22 --> 01:10:25: is resiliency in a new normal with speakers,  
01:10:25 --> 01:10:29: Jonathan Rosemark, Walsman, Brad Boxer and then at lunch.  
01:10:29 --> 01:10:32: And after that we'll explore parks and public spaces and  
01:10:32 --> 01:10:36: the following week will glean insights from real estate.  
01:10:36 --> 01:10:39: Ann leaders. So we have real estate leaders in Asia  
01:10:39 --> 01:10:42: and so we hope you'll join us for these webinars  
01:10:42 --> 01:10:45: and check out that short link for more links to  
01:10:45 --> 01:10:47: the information. I will make sure that links to the  
01:10:48 --> 01:10:51: resources that John and Joe mentioned or posted there.  
01:10:51 --> 01:10:53: Feel free to email us anytime at health that you  
01:10:53 --> 01:10:54: lied at work.  
01:10:54 --> 01:10:57: We love hearing from people we love hearing about your  
01:10:57 --> 01:11:01: questions and what you're thinking about and struggling with  
and  
01:11:01 --> 01:11:05: wondering about in that definitely helps us craft feature  
programming.  
01:11:05 --> 01:11:07: So until next time please stay so.  
01:11:07 --> 01:11:10: Stay healthy and stay safe and all of our best.  
01:11:10 --> 01:11:11: Thanks a lot.

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