Webinar

Confronting COVID-19: Healthy Buildings; Optimizing Mental Health

Date: March 31, 2020

00:00:00 --> 00:00:01: So welcome to all of you.
00:00:01 --> 00:00:05: I'm Rachel Mccleary, senior vice president at you'll I an,
00:00:05 --> 00:00:08: on behalf of you'll, I would like to welcome you
00:00:08 --> 00:00:11: to this global webinar on the coronavirus.
00:00:11 --> 00:00:16: This webinar on healthy building strategies and opportunities to maximize
00:00:16 --> 00:00:19: mental health through built environment is the 2nd in a
00:00:19 --> 00:00:22: series which you lie is offering members and real estate
00:00:22 --> 00:00:26: leaders who are working to navigate the challenges posed by
00:00:26 --> 00:00:29: the health crisis and who want to contribute to its
00:00:29 --> 00:00:30: resolution.
00:00:30 --> 00:00:32: Next slide.
00:00:32 --> 00:00:35: The Urban Land Institute is a research and education nonprofit
00:00:35 --> 00:00:39: whose mission is to provide leadership in the responsible use
00:00:39 --> 00:00:43: of land and creating and sustaining thriving communities worldwide.
00:00:43 --> 00:00:45: Excuse me if you are new to you alive.
00:00:45 --> 00:00:48: Welcome as we said last week in the last web.
00:00:48 --> 00:00:51: And are we know this is a very challenging time
00:00:51 --> 00:00:52: for you.
00:00:52 --> 00:00:53: Will I members, our partners,
00:00:53 --> 00:00:58: their colleagues and families? Our thoughts go out to individuals
00:00:58 --> 00:01:02: and communities who are coping with an ever deepening health
00:01:02 --> 00:01:03: and economic crisis.
00:01:03 --> 00:01:05: As are you alive family we want you to know
00:01:06 --> 00:01:07: that we are here for you.
00:01:07 --> 00:01:10: We are committed to doing all we can to support
00:01:10 --> 00:01:10: you,
00:01:10 --> 00:01:13: lie members and their partners as they navigate this strange
00:01:13 --> 00:01:15: new world of ever changing information.
An worry. And although we cannot come together in person as is our practice with webinars like this one, we are coming together virtually now and in the coming weeks you will lie is rolling out on line and web based content of all kinds dedicated to informing and connecting you lie members around COVID-19 and other topics as well. The building Healthy Places Initiative was launched in 2013 to leverage the power of you allies. Global networks, to shape projects and places in ways that improve the health of people and communities. Over the years we have been working with you, align members to explore the intersections of health, social equity, real estate and to promote healthy places. This crisis has underscored how critically important health is and highlighted more acutely than ever before, how interconnected. We all are rich and poor. Young and Old, the US and the world. We need each other now more than ever. And now more than ever we need policy solutions and strategies that lift everyone up and leave no one behind. We know that all of you are problem solvers and you are dedicated to doing all you can to help prevent the spread of the virus to navigate the business and planning impacts and to help mitigate the impact of this crisis on communities and vulnerable people. We know that you are working to help cities and communicate communities, navigate the pandemic and rebuild after it in ways that foster. Social equity and provide opportunity for all. Our goal with this web and R series. Another coronavirus information and programming, is to give you insights and information that help you do just that. We have compiled information relevant to the real estate industry on our issue page you will i.org/COVID-19 which we are updating regularly as more information becomes available. Overtime we’re sharing this web and R and all related
content in the spirit of information sharing an education, please see this see this statement on your screen for further important disclaimers. As you know, today's Webinars focused on two intersecting topics. How to keep buildings healthy and how to optimize mental health with built environment strategies in this time of disruption last week we heard from infectious disease specialist Kathy Tracy, healthy buildings expert Whitney Austin Gray and emergency planner Susan Basak. Next week on April 7th will examine it considerations for multifamily buildings and affordable housing, and on April 14th will take a look at the shifting economic landscape and how to cope with the collapse of rent payments for housing and retail. All webinars are linked to an listed on that you will i.org/COVID-19 issue page webinars are being recorded, a partial web and our partial recording of this webinar will be shared by email with registrants and will also be posted on the web. But Professor Alan's portion will be omitted from the recording and from the shared slides. So here are speakers for today's web and R. In the interest of time and getting to the meat of the matter will just offer quick names and titles for full full BIOS, please look at the web and our web page. I'm delighted to hand the moderating duties over to Elizabeth Shreve, Elizabeth's principle with the SWA Group based in San Francisco. And as our moderate are today, she is a long time you will remember and champion of the building Healthy Places Initiative and as chair of the UI Sustainable Development Product Council. Elizabeth thank you Rachel. Hello everyone, I'm so grateful to be here to moderate the connection today or through this session with the UI community I've been involved with building healthy places for.
A while and and we can all see how this pandemic is really driving home. The point that health is fundamental to the way that we design and build with challenges that most of us could never have foreseen. So today we'll be hearing from First Doctor Joseph Allen, assistant professor of exposure assessment science at the Harvard TH Chan School of Public Health and director of the Healthy Buildings Program. There he is the recent author of healthy buildings, how indoor spaces drive performance and productivity, along with John Macomber at Harvard Business School, and he'll be providing some links to his resources. As part of his presentation, our friend Joanna Frank, longtime friend of building healthy places, is the founding president and CEO of the Center for Active Design based in New York City, where she advances design and development practices to foster healthy and engaged communities so. Here we are. It's early days in this pandemic and one thing we know is that we're all faced with so much uncertainty, were isolated, and yet we're finding ways to connect often in new and unexpected ways. For example, yesterday I took a break from work for a music jam session with my 98 year old father who lives in a retirement community where six people have died from COVID-19 this week were frantic, of course, and he's chafing at missing his ukulele E band rehearsals. So we got on zoom with one of my brothers in Nashville on the guitar. My brother on banjo in New Hampshire. My dad on Long Island with his ukulele E and we made some really bad music together and we laughed. We all felt like we were far away from each other. And yet in some ways we were closer. We're facing the immediate situation at hand. How do we get through this crisis?
And we're also facing the great unknown of what's ahead after the chain of transmission has slowed. So our speakers are going to help us today with what we do know. What are some of the immediate hacks that we can put into practice right now? What can we do at this moment to foster health and well being as we get through this crisis? And then, what are some of the possibilities and best practices for what lies ahead? And with that, I think we'll just jump right into it.

I think public health experts are the clearly the unsung superheroes of the moment. So let's let's thank them as often as we possibly can, even though the only measure of success is that nothing happens. So with that, Joanna is going to address some of the aspects of mental health both in the near term and into the future.

Joanna great, thank you so much. Great place for me to kind of segue. As my expertise is really in buildings, so we're going to jump straight into what will be the role of buildings as we go forward. So the Center for active design, the organization that I that I lead was actually created with the belief that the built environment could change the trajectory of health, and we believe that because of the body of public health evidence base that we were translating at the time, there's No 10 years ago to really look at how come we combat? Chronic disease and one of the things that gave us the belief that this was even possible, that we as a bunch of building designers and operators and real estate developers and City of New York? Why did we even think we could address public health? One of the reasons for that was actually looking at the precedent of history and how New York City actually was able to overcome its very high levels of infectious
disease. So these are the slides that I have now used for a decade to talk about the precedent that New York City is set in a looking at infectious disease and how to leverage our buildings are built in VIA.

So let me go back 10 years and present this to you and really go back to the 1800s. So in the 1800s the majority of New Yorkers were dying of infectious disease and the way that New York City actually looked at addressing that infectious disease was looking at how can we take our built environment? Both the physical elements of the built environment as well as the policy and how can we leverage that to combat this infectious disease? The subway system was created to alleviate overcrowding in lower Manhattan. The reservoir system and the piping of water was created in order to bring fresh drinking water to the residents of New York.

There was a policy created around how to set minimum standards for light and air around housing. The Tenement House Act was the first of its kind. There were other policy changes as well. A entire new Department was created called the Sanitation Department.

Prior to that, dead horses were left on the street. That was typical. So sanitation was introduced as something that was part of the public realm. All of these these things were put in place, and they had a dramatic impact on infectious disease rates. And you can see here by the 1940s that there's a complete reversal, and that infectious diseases, now only down to, is down to 11%, and we're really seeing a chronic disease. Is the thing that begins to be affecting the majority of New Yorkers specifically and affecting the death rates. And this is all prior to the widespread use. Of antibiotics, so I think I'm starting with a message of hope because I think that you know we're talking
about mental health specifically in this part,
and I do feel like as a as a building professional,
we had to feel like what is our role.
What can we do? What place do we play in this?

The built environment successfully in the past to overcome infectious disease.

There's more than 100 years of public health research in how to do this.

We are absolutely at the center of this coming going forward and there's a lot that we can do.

And so I'm excited to share. Some of that with you today.

What's interesting is that we have spent the last 10 years really looking at how to overcome chronic disease using our built environment because that is what causes the majority of deaths in the US and globally.

But there's a lot that we know about infectious disease, so we're excited to kind of bring this back to the forefront and talk about it with everybody in the coming weeks and months.

So across the globe, the three leading causes of premature death it are smoking,
perhaps no surprise to anybody.
The other two, though I think I'm probably more of a surprise and that is physical inactivity and social isolation,
and both of those are actually associated with negative mental health outcomes,
which includes increase in anxiety,
increase in depression and increase in stress.

And we're really going to be focusing on mental health and how our built environment can be leveraged for mental health.

For positive mental health outcomes,
but we think we've talked a lot about the physical infectious disease.

I think everybody will agree we under very high levels
of anxiety right now.
And there's a lot that we can use in our
built environment to alleviate some of that stress and
anxiety,
and it's just good to understand the role that your
built environment is playing in either exacerbating or actually
diminishing
those mental health issues.
So we run a building certification system as well as
other things,
but we run the fit well building certification system and
fit well is actually based on public health research.
It was created by the USCDC that I don't think
needs any introduction.
This point and the General Service Administration,
which is the arm of the US federal government that
actually manages the operation and building of federal
buildings across
is about 9000 buildings and their portfolio.
So the CDC took this global evidence based coming out
of public health and translated it into practical design
strategies
that could be used first and foremost on the GSA's
portfolio of existing buildings. And then we were selected as
three years ago to really take this incredible evidence based
these set of strategies.
And bring them to the private sector and also kind
of a wider swath of the public sector and globally
as well.
So we operate fit well and we are the third
party certifier for fit well and behind fit well is
this amazing body of public health,
which is growing all the time public health research so
currently behind fit.
Well there are 5600 peer reviewed public health research
studies
and up until now I would always have to explain
the difference between kind of public health and medical
health
and you know why this.
Is important to all of us in the building industry
and I don't think we need to do this anymore, so that's interesting how times change so very quickly. So this very large body of evidence is coming out of academic institutions around the world. It has been translated into the design and operational strategies that are there and housed within fit. All of this you can download for free on football.org. All of the strategies in there to use it as a certification. There is a cost. We are a nonprofit. We try to keep that to an absolute minimum. To cover our time, but this evidence base exists. This is another, I think, a real kind of positive piece here is that we know what elements of our built environment are impacting our overall health, health holistically and then individually in these outcomes. So the outcomes listed on the screen right now are really looking at holistic health outcomes. Were looking at Community health, reducing morbidity, instill feelings of well being. That's where we're going to really concentrate today, so that's kind of all aspects of mental health. Social equity for vulnerable populations. Again, something that has been heightened in focus over the last few weeks and is otherwise something that I feel like is not top of mind. Providing healthy food options, promoting occupant safety and then increasing physical activity. So all of these together make up holistic health and every strategy within fit well has a body of evidence that shows a correlation or Association between that particular design or operational strategy. An impact on at least one of these health impact categories. The body of evidence is so large for public health that we can actually use it to weight each of the strategies. So you know that one strategy has a greater,
measurable impact on health and another.
And that's very important because all of us in the
building industry you don't have unlimited budgets.
You don't have unlimited opportunities.
Everybody has to be able to prioritize what is going
to have the greatest impact on health on this body
of evidence really helps to inform that decision making so.
Very important and very powerful and impactful and I think
it's one of the reasons that fit well has already
been so successful after a very short amount of time
that it's it's answering a lot of the basic questions
coming from the real estate industry coming from building
owners and designers.
And that is what should I prioritize.
What should I do first?
How am I going to have the greatest measurable impact
that is specific to my building population through my
community to my particular building type?
So all of those questions can be answered.
So just to kind of focus.
In on the mental health,
peace, mental health actually already accounts for the largest
burden of disease globally.
These are a number of British studies.
I am British, but there's really no bias here.
There is really looking at just the kind of the
scale of anxiety,
disorder and major depressive disorder and its its overall
impact on absolutely on health.
But also next side on the economic impact of mental
health as well.
Another UK study. Looking at the actual cost of loss
of work associated with psychological problems,
we see that across the globe this is not a
US or UK or any other country issue.
As I mentioned at the beginning,
social isolation is up there within physical inactivity and
smoking
as the leading cause of premature death globally and
accounts

for the majority of last six sick days in the US, as well as in the UK.

It was important before. The coronavirus and I would say that it's going to be an even greater factor as we begin to return to work and right now as we are all isolated as practicing social distancing.

So how do we design our spaces where we live and where we work to promote mental health, specifically promote mental health and it's interesting.

We already just looked at Professor Alan's the diagram around direct impact and indirect impact. 'cause I'm going to talk a little bit about that also,

but as it relates to mental health,

so there are particular design and operational strategies that have a direct impact on mental health.

But in the near term and then there are other strategies that have an indirect impact and a slightly longer duration before they impact mental health.

So something like a strategy that promotes physical activity would be an example of an indirect strategy.

So physical activity has an impact on your mental health, but only if you participated in it.

So we are going to stick to those direct impacts or mental health today,

just so that we could have narrowed it down to where the evidence base is strongest.

As far as mental health.

So we've kind of already talked about this a little bit.

As far as outdoor space and access your greenery and how over the last decade we've perhaps become divorced from this in some ways,

but we are profoundly impacted by our ability to be within nature to have access to tree canopy,

it lowers our rates of depression,

anxiety, and stress, and a very important word there.
High-quality outdoor spaces. We see that the well maintained outdoor space.

A well maintained greenery plantings trees all have a very positive impact on addressing mental health and also associated with trust as well.

But when you start to see that maintenance diminish, you'll actually begin to see that these spaces can become very negative very quickly if they are not maintained and you will actually see a negative impact on trust.

If you have poorly maintained greenery so it has to be well maintained, but if it is, it has a very direct and measurable impact on mental health outcomes.

Kind of staying within that outdoor idea. We are simple creatures and digging around in the dirt is very good for us so gardening is associated with a wide range of health outcomes.

Includes including again, reducing depression, anxiety, stress, and mood disturbances as well.

Lot of research around this doesn't have to be a fruit and vegetable garden. It can be any kind of gardening for vegetable gardening is particularly interesting because it's also associated with a higher likelihood that you will eat fruit and vegetables.

At the recommended daily amount, which again then has that indirect impact on mental health outcomes.

So this is actually interesting in that it's one of the least use strategies in fit well. And yet we know that it has such a profound impact on many aspects of health.

We were already going to promote gardening and van fruit and vegetable plot specifically, so you better believe that you’re going to be hearing a lot more about this from us going forward air quality.

So Doctor Allen has kind of talked about air quality a little bit. I want to bring it to the.

Outdoor air quality. Indoor air quality is obviously very
Outdoor air quality is just as important, so very important to understand that almost vulnerable populations are often also the populations who are in areas with very poor air quality. Most just looking at the Maps of New York and seeing that the Bronx is being very hard. Hit with coronavirus deaths. It also has some of the worst outdoor air quality in the country and always the highest rates of chronic disease. Disparities, etc. Air quality is very important globally. Obviously we know about this and we also see that poor air quality is associated with higher levels of anxiety as well in some populations. So access to public transport, access to good quality outdoor air. These are all very important for mental health as well as equity as well. Natural day lighting. I mean, I can't say enough about this. This is such a simple thing to think about, and yet it has such an impact on our overall health. So natural day lighting is also. Not just allowing you to kind of be able to tell what time did is, but it's also going to affect your ability to sleep at night as well, so those people who have more access to daylight and natural daylight actually are seemed to have better sleep patterns as well, and sleep is so important to levels of anxiety and stress. It's also associated with obesity as well, so when you lose sleep, you're more likely to eat more calories the next day, and a lot of sleep disorder will result in higher levels of stress and so on. So natural day lighting incredibly important.
that workers take. If you want to make the economic argument which has real estate professionals, we usually do so is direct correlation between that. I think. The other thing that's really important. It is that natural day lighting is something that our employees actually rate as one of the highest things that they are looking for when it comes to a place to work, such Alan kind of pointed like started to talk about this and we are absolutely very well aware of the demand from employees. For work environments that promote their health and Wellness, and natural lighting is number one on their list views of nature. So we've kind of talked about getting out into nature. Very important. But being able to see nature also has been shown to have a very therapeutic effect on people. There was a very famous study done about patients looking out of hospital windows and that their recovery time was faster than those who couldn't see nature out of the windows. We see this in our homes. We see it in our workplaces as well. Maybe you want recovering faster, but it does have a therapeutic effect and a positive impact on mental health outcomes generally, and it doesn't have to be as grand as a big forest that you have out of your window. With simple creatures we can really look at any kind of views of nature and it has a positive impact on the reduction of stress. It could have potted plants. It can be of use out of your window, even images of nature will have an impact on mental health, although not as greater raters as the real thing. So these are all really. Interesting and pretty easy hacks to do at home next, so I want to kind of bring this down. We don't usually talk about individual environments, but I did want to kind of bring it down to what you can do today while you work at
home.
Or you know, as your social distancing. Depending on where you are, we work globally. We work with a lot of partners who are at different phases in this epidemic. At the moment pandemic, so optimizing your work environment we can go through this list. We will also have this available for folks in the next couple of days with all the citations associated with it so you don't have to. Madly write it down so you're really looking at how to combat physical inactivity and social isolation. You need to really be thinking about how do I avoid prolonged sedentary time? How do I create my own standing desk? I have a whole stack of recipe books that I've created my own with. Like how do we take those breaks? Walking while social distancing, social isolation. You still need to think about how do I interact with people in a Safeway? Maybe it's the folks that you live with. Very important to take the time to do that too, actually. Interact with one another, healthy food, something like you must have healthy food in your house if at all possible our eating habits. What we eat absolutely has an impact on mental health as well as our physical health. Staying hydrated again, setting up your desk so that you can see out of a window so you could see plants ensuring that your indoor air quality is optimum by opening a window or stepping outside, give yourself that daylight. There's a lovely expression which is daylight bathing. If you just go stand in the sunshine. If there is any. For a time, and that's actually very good for you. Setting up good task lighting, maintaining a routine, and good sleep habits. I don't know about you,
but I live with a couple of older teenagers and
my goodness,
their sleep habits are terrible and I must make sure
not to fall into them interacting with your household games,
board games, dancing, get creative.
It's really important that we move that we interact with
one another to the greatest extent possible.
Support your local community, reach out to people who are
vulnerable people in the front lines,
talk to them and we have very low levels of
trust in the US already.
Between neighbors between communities, let's try to start to
overcome some of those barriers.
At this time, staying involved in public life through remote
access.
We're doing the census in the US.
Right now there's a lot going on.
Stay involved obviously. Can't be there physically,
but we can be through our computers through all of
those kind of devices that we use.
Obviously wash your hands and then regular cleaning,
cleaning practices, especially for high target areas.
We're all living in these close,
confined areas, especially who the folks in New York so
very important.
Again, kind of same cleaning practices we're looking at for
officers that we bring those to our homes,
especially in high high touch areas,
so will will give this to everybody.
You don't need to to be writing it down and
well,
like I said, will cite it as well.
So we are working with folks across the world.
Folks are beginning to look about preparing that to go
back to work,
which is exciting. It's really good to be talking to
our partners in the Asia Pacific region as they had
a different phase then we are here.
So how do you repair your workplace?
How do you get your?
Tenants to come back your employees to come back to
work.

How do you, as an employee have that confidence to return back to work?

This is very much about mental health.

This is very much about trust,

so here are some of those stats that Doctor Alan kind of just kind of touched on and that we often speak about.

And that is that job seekers.

If you are looking to attract talent,

you need to be able to demonstrate to your employees that you are supporting their health and Wellness and you share their values.

That was pre coronavirus. I can only imagine what that number is going to do afterwards.

It's been growing now for the last decade.

The other thing is that if you want to retain and attract,

if you want to retain those same employees again,

you're going to have to demonstrate that you are promoting their health and Wellness.

So how do you demonstrate this?

How do you do this in a way that that builds trust and engenders trust?

You'll notice that our list is very similar to Doctor Allen's list,

and that is because we are all pulling from the same body of evidence.

I am not a public health expert.

We have fantastic public health expertise on staff.

But I'm here to tell you there is a big body of evidence,

and there's a reason that folks looking at the evidence base are coming up with the same strategy as it's because this is what is supported by the body of evidence. So I would say if you want your employees, your tenants, your investors to trust that you know what you're doing,

you will use the evidence base to inform the strategies, and then you will communicate that to folks very important, that we communicate what we're doing,

why we're doing educational signage around hand washing,
only 40% of fit well.

Users were doing this before.

And I would say that's going to go up massively because again,

people felt like it was insulting to put hand washing sign in Class A office space.

I don't think they're going to think that anymore.

Cleaning protocols we've touched on ventilation.

All of these things. This is obviously a very reduced list.

Again, this is on our website under the resources for fitwell.org.

All of this is cited, all of it has specificity to it,

so increase ventilation. Only just is you know the headline here,

but there's very specific protocols that have already been established.

Way before the coronavirus, this current current coronavirus again,

humidity. This is all very specific,

and indoor air filtration as well,

so this doesn't need to be invented reinvented.

This is stuff that's best practices already,

it's it's very well known how to do this,

not maybe widely executed, but it's something that that is is in our body of knowledge.

So as we kind of conclude this,

like how do we build trust?

I must say that. We,

as I mentioned, we work around the world.

We have folks who are really kind of at the other end of this in the Asia Pacific region who are now beginning to look at.

How do I get my tenants?

My shoppers, my employees, to come back to the built environment?

Come back to our offices,

come back to our shopping malls to our public spaces,

gather together, and it's very interesting that there is at this point still somewhat of a lack of trust.

I was talking to a mall owner in the in China.
They were talking about putting on an art exhibition talking about all the ways that they will be promoting health within their buildings. So very important that you communicate what you're doing and that it is going to resonate with your audience. So whomever your occupants are. And I also think that consistency is key to building trust as well. You can't just say that you're following these protocols, you can't just say that you have all of these different practices around optimum indoor air quality. You also need to show the results of all of the testing that you're doing. You need to demonstrate in a very public way, the way that you're doing that cleaning. So really important that we are very vigilant in the way that we actually enact all of these strategies because I think people are going to be very quick to actually distrust that we're following through on these operational strategies so you know, in a time of heightened anxiety, I think this is something that we need to guard against so. This is kind of where we find ourselves today. The last side we have a lot of our fantastic partners who are using fit well. This is. This is very much a partnership between us. We have the evidence base we are here to translate it for the building industry for the real estate developers, for the owners and the large employers for everybody. Really, it exists. We want you to use it so it's exciting to be able to continue to work with you and to really kind of respond. We'd like to get a little bit ahead and not just be responding and actually. Be looking forward at how we can look at the next month or next. Two months of really looking at how to create this messaging and this information for you. So thank you. Thank you both so much that would those would really exciting.
We’re clearly kind of thinking on our feet here as well.

As you know, relying on information and data and evidence that have come up in the past and adapting to radically new situation.

So we have a lot of questions that have come up and we’ve been trying to kind of collate them as they come in.

Some people are using the chat box and some people are using question and answer, but we do see all those questions.

I’m going to start by fielding a few questions questions that I think will be covered if you follow up with the speakers publications.

We’re going to leave to last if we have time.

OK so start with Joanna perhaps?

The issue of the densifying and many of us have been focusing our practices on creating places that bring people closer together.

Team workspaces, civic life to community life,
cities foster, exchange of ideas and social interaction.

But what about the benefits of D densifying?

Do you see that as a possible outcome from as we as we recover from this immediate crisis?

I mean I would say that I am.

I mean we mentioned this earlier right?

This has been our life’s work to bring people together to use the built environment to increase social interaction, to increase trust to create public spaces that really bring people together and address all of the kind of inequity that we see in our built environment.

So I would say that.

D. Densifying built environments is absolutely not the outcome that we will be supporting going forward.

I think that we see very dense cities around the world that have been some of the most effective at addressing the spread of this virus.

Hong Kong comes to mind.

Singapore Seoul. These are very dense cities,
the other extreme and say.

We can no longer live in close proximity to one another.

We can no longer share public spaces or streets or gather in large groupings.

Is not the outcome that we will be supporting, and I would actually say that all of the folks on the web and I hear the building industry really needs to have an informed and strong argument based on the evidence base as to why creating a more spread out built environment has negative consequences.

We you know we have a limited amount of resources as a planet.

We need to think about sustainability and we need to think about the ability to support public transport that requires a certain density.

It's essential if we're going to reduce our carbon footprint, so I think that we need to really look at this holistically and bring it all together.

And not just react in this short term, so I would say that we as the building industry really need to to look at this and then come together with the United Voice.

Elizabeth can I jump in on that 'cause I I'd like to add something on the detoxification part.

Yeah, so I think it's a good comment and I think we have to disentangle defensive vacation in terms of city life, versus densification inside buildings and dis entangle short-term versus long-term.

So certainly densification is good for a whole bunch of reasons.

In cities I don't see that changing at all.

In fact, it’s quite impossible considering the growth in populations and for all those other reasons Joanna mentioned.

In the short term inside buildings, there's no question we're going to densify.

I mean, this is what social distancing is, what physical distancing isn't going to get a lot more creative.

We’re going to re populate our buildings and follow the
path of Singapore of South Korea and other areas that have had success in flattening this curve because we're going to have to spread people out. I've been asked a lot lately. Does this mean the end of open floor plans? And I don't think that's the case at all and what it's going to be just like anything.

It's hard to paint a broad stroke against one approach versus another. There are good and bad ways to do it, and so we can be smart. The evidence the scientific evidence shows and we have a new study led by one of my postdocs, mimosa danio showing higher risk of upper respiratory illness associated with higher occupant density and this is healthy students in dorms. So the evidence base is quite rich on the occupant density side of this. We're going to have to draw in that literature really strongly to make informed decisions and I think we definitely need to disentangle these short-term versus the long term approaches to dealing with Covid now, but also thinking about the post Covid world a year from now or sooner if we get a really nice scientists breakthrough before that vaccine comes. Yeah, I think that's a great point. I think the difference between the density within a building and the density of a city, and I think what we see in the narrative is a word that is used. To respond to the folks kind of maybe pre existing ideas of our built environment. I don't know. But but yeah, absolutely so I think that it's it's going to be. It's going to be about using that evidence based, so it's it's it's. It's great that folks are turning to the evidence based as much as they are, so we're all we're all going to dig in on
this one.

So thank you OK, and we know that people are using distance learning and remote workplace habits at sort of a digital infrastructure that's coming up and we have yet to see if that some of those habits are going to stick.

You know, in the future that made the debt help. Offset some of the crowding and give us flexibility to respond.

If, if, if hopefully, it won't happen, but another pandemic might come up.

OK, a question for Joe.

I think best practices for grocery shopping.

Given that we're hopefully setting foot in groceries stores over the next several weeks, what about customers? Welcome grocery store managers be doing to minimize risk to customers and to workers in their stores.

If you forget the great question your publications, then you can. You can just refer us to one of your publications.

Yeah, I can see right through.

It is an article in Washington Post I wrote and I'll give you some of the background in the science behind it and where this probably wear.

This question came from this, but there's a lot of poor information out there that came largely from a preprint scientific study that wasn't peer reviewed and not questioning the science, but it needed some, I think, expert interpretation before it hit widespread, and that's the finding of virus detectable virus on many services.

Cardboard for 24 hours, and it led to a string, I think of a lot of anxiety in the public thinking about, well, does this mean I can't accept the package? This mean I can't go to the grocery store? And certainly if we're going to be affected at social distancing, we're all going to have to remain.
We're staying at home as best we can, except for these times that we need to get out with these essentials. And so the article talks about I can address this question specifically. Is that first? There's no such thing as no risk. The goal is to minimize risk, and in fact, I talked about this article that the risks here are de minimis. Ann. I said that there are small and manageable. The risks are low and manageable. You know Fomite transmission is real. This is definitely happening with this virus we've known about for my transmission for a long time. These are. Seas of diseases, inanimate surfaces. But if you take basic precautions you can protect yourself. You can protect the other people in case you're asymptomatic transmitter and this is the basics of hand washing. Maintaining 6 feet buffers. I think we're about to see the culture change in the US, where mass will become very commonplace. I think it's a smart approach, definitely not mass taken from healthcare. Do this shortage. I'm talking bout homemade masks and I think you'll see a lot more of that and you can protect yourself. You can protect the workers and they can protect you. So it's actually a manageable risk. OK, great, and while I've got Joe going. Quick question when's your book available? Well, so I don't mean just to be applied from the book. I appreciate somebody asking. It comes out on April 21st. You can order it now. We have a website, you can find it or if you just Google it. I would also want to lose my terrific collaborator, Co. Author and friend John Macomber from the Harvard Business School.
And he's an expert in real estate finance, who Co authored me. So thanks.

Another quick question for Joe. What's the incubation period people are concerned about that cruise ship that showed the presence of the virus weeks later. Well, so different question. One is incubation period, the other words environmental persistence will address the incubation. I'm really surprised I've been talking about this recently that CDW haven't updated their guidance on this and actually look at CDC's guidance. They say this, the incubation period is based on data from MERS Co coronavirus, which was fine in the early days of this and we didn't know much about this virus, but we actually have data from this virus and I'm surprised they haven't updated this. I looked at the science on this just over the weekend. It's 5 days of the meeting incubation period, 97% of cases found by the 11th day or so, so that incubation. On the environment persistence, you know when I first found these cases in particular, that cruise ship. This is what tipped me off early on. Again, this forensic investigation thing that that multiple modes of transmission were happening. You don't get these kind of high prevalence.

Infection rates happening in places in particular places that are starting to manage that, and you had explosive growth there. Same with the senior home in Kirkland and elsewhere, so it tells you the ultimate modes are operating in terms of it matters. A whole bunch of factors can determine how long it survives in the air and on surfaces, and I can point you to some of that that other research, but I guess I'd point people more.
Control side of this. We know these modes of transmission, we know how to counteract them, hand washing, social distancing, cleaning services. And then including these building level factors like ventilation, filtration and relative humidity. OK, great. Alright question, I think for Joe and maybe for both of you people have closed governments have closed parks and open spaces during this crisis. Because they really don't have the manpower to monitor how people excuse me. Reflect respect, social distancing. What is a safe social distance when you're outdoors? Well, Joanne maybe you could address that because I you know. I think it speaks to one the importance of being outside and mental health here and then I can maybe address the specifics on what the guidance says specifically. Show absolutely. I mean, I, I think that we know that proximation nature, the physical activity side of both our mental health and physical health is so important. I think people are actually really valuing the fact that they do typically get outside. And now that you know this is something like that, think about it actually heightens our awareness of how much we do crave that. So I think that yes, there there is obviously social distancing at the moment and in places like New York City where we're based. You know, it's hard when there's millions of people in a relatively small area. I had seen one idea which was to close the streets to create like the Summer Streets program where we actually take over a lot of the streetscape to create more public space so people can actually be outside and actually have the space between them in order to, you know, kind of maintain those social, those safe social distance numbers, which I believe are two meters. 6 feet, is what I've read.
although everything done changing pretty quickly.

So yeah, I think that just kind of being creative

especially in the denser areas.

We see the access to.

Public space as again it's an equity issue.

We already know this that the folks living in neighborhoods that already have a lot of the major health disparities of having higher rates of chronic disease having worse air quality. Also have the least access to well maintained public outdoor spaces.

So again, you're just seeing this concentration of built environment factors that are absolutely leading to the fact that these populations have higher rates of chronic disease, have higher rates of. Uh,

this COVID-19 disease, you know, and it's just exacerbated. So I think that we do absolutely need to once again look at our outdoor spaces.

It's fascinating that in the 1800s, the press around Central Park and the park system was that it was specifically the workingman's long. That was how it was presented in the papers at the time that these park systems were really seen as that,

and I think that we need to once again look at the ratio of public space and access to public space that we have across all of our built environments. And it enough in every instance and I think that

I would say it isn't knowing what the what the numbers look like.

Alright, great that's great Elizabeth.

I'll just add a maybe point resource and it wasn't including this and maybe Rachel we can get this out at you alliance at fourhealth.org tube.

Is it not that I wrote with the one of the leading experts at our school in infectious disease Epidemiology on myths around social distancing, and one of them is about getting outside and we use that all activity needs to stop and that's simply not the case.
And in that case we argue that we, instead of using social distancing, used word physical distance thing we want to maintain our social connect. Connections but maintain a physical space. This means going outside, getting out to parks, and doing your best to make maintain doing your best. Maintaining that 6 foot buffer which is actually based on aerosol physics, so it's it's. That's another evidence based recommendation. Someone just didn't pick it out of a hat that there's this distance. It's based on what we know about disease transmission, air assault, and particles of different sizes. It's going to involve a lot of social trust that when you're out there, people will stay in and do these things, but sodas sodas. All of these interventions were doing right hand washing the social trust you know. People covering their compenses. This is all about social, trusted people doing what's right. We're going to have to depend on each other there, right? Great? OK, so I'm going to have to jump in because we are at a time.

There's so many great questions here. I hate to stop this conversation, but I gotta ask both of you. One last question, what is the one thing that real estate leaders should do or remember at this time? Should I jump? Tradjenta so as a as a UX real estate developer, I would say that we've got to stick to the science. The real estate industry really has to stick to what is. Backed by the evidence base, because trust is going to be paramount, and if you start winging it and doing stuff that isn't evidence based, I think that you have the risk reputational risk of really of diminishing that trust in your occupants. So I think to us this is this is the
time to really hunker down with the evidence base.

I'll second that and you know,

I've been saying for a long time that the person who manages your building has a bigger impact on your health and your doctor,

and I think this is that is not an exaggeration,

and it's very clear and we're going to see buildings increasingly be seen as a first line of defense against all sorts of diseases.

Not so it's going to be to protect us and also to promote our health and then let you know I'll bring in something again for my coauthor, John Mccumber. He likes to talk about.

Healthy buildings going from a subjective nice have to an objective and competitive must have.

This is something everyone is going to have to be doing and they need to be prepared.

My very last comment. I just want to repeat something for it's a public health message.

This is an all in moment like we've never seen and I'm going to encourage everyone to bring to bear whatever skill or expertise you have to this problem where we need every clever mind out there contributing whatever skill you have in any way you think or any way you can contribute.

We need everybody in this fight, so thank you. Thank you, Elizabeth. Thank you, professor Alan.

Thank you Joanna. I'll just invite everybody to join us for upcoming webinars.

Our next one is on considerations for multifamily and affordable housing, and then the one after that is keeping businesses on track in this age of disruption with rents and retail will have on going links that you lie.org/COVID-19 you can be in touch with us anytime at [email protected]

Thank you, stay healthy, stay safe and we will see you next time.