Webinar

The Materials Movement: Creating Value with Better Building Materials
Date: December 01, 2023

00:00:11 --> 00:00:13: Hi everyone, Welcome.
00:00:14 --> 00:00:16: It looks like people are trickling in from the waiting
00:00:16 --> 00:00:16: room.
00:00:18 --> 00:00:19: We'll get started in a couple of minutes.
00:00:20 --> 00:00:22: While we're waiting, feel free to introduce yourself in the
00:00:22 --> 00:00:24: chat and tell us where you're joining us from.
00:00:27 --> 00:00:28: Thanks for being here.
00:00:49 --> 00:00:49: All right.
00:00:50 --> 00:00:51: Well, go ahead and get started.
00:00:51 --> 00:00:52: So welcome.
00:00:52 --> 00:00:55: My name is Victoria Ostreich and I'm Senior Manager with
00:00:55 --> 00:00:58: the Urban Land Institute's Randall Lewis Center for
00:00:58 --> 00:00:59: Sustainability in
00:00:58 --> 00:00:59: Real Estate.
00:01:00 --> 00:01:02: I'm really excited to have you here and tell you
00:01:02 --> 00:01:05: a little bit about the materials movement.
00:01:05 --> 00:01:08: We've assembled an amazing panel of experts who are
00:01:08 --> 00:01:11: going to share their perspectives on the real estate industries
00:01:11 --> 00:01:13: movement towards healthy and sustainable building materials.
00:01:14 --> 00:01:16: We'll talk about why material choices are important for the
00:01:16 --> 00:01:19: environment, for future tenants and for communities.
00:01:20 --> 00:01:23: We'll also talk about how professionals across the value
00:01:23 --> 00:01:26: chain are successfully making more informed choices to integrate
00:01:26 --> 00:01:28: better materials.
00:01:29 --> 00:01:31: We're really glad to have you with us, so let's
00:01:31 --> 00:01:31: get started.
I'm excited to introduce you to today's speakers.
Sydney Mainster is the Vice President of Sustainability and Design Management for the Durst Organization, one of the oldest family
run commercial and residential real estate companies in New York.
Suzanne Fallander is the Vice President of Global ESG for Prologis, which acquires, develops and maintains the largest collection of
high quality logistics real estate in the world.
Heidi Creighton is the Vice President of Sustainability for Skanska.
USA Commercial Development.
Skanska is a 135 year old development and construction company that began in Sweden and operates globally.
Today's webinar was organized through the Uli Randall Lewis Center for Sustainability in Real Estate, which leads the industry in creating places and buildings where people and the environment thrive.
Here's our agenda for today.
First, we're going to do a quick poll to better understand who's in the audience.
Then I'm going to provide a brief overview of the Materials Movement report.
Later, our panelists will present their firm's approach to sustainable building materials and highlight example projects that are leading this movement.
Following the presentations, we'll move to a panel discussion and then open it up for panelists to answer your questions.
So as you're listening in, please enter your questions in the Q&A box.
You can also use the upvote feature to elevate questions that you like.
And finally, I want to flag that this webinar is being recorded and we'll share a recording with all the participants and publish it on UL Eyes Knowledge Finder website.
It looks like folks are introducing themselves in the chat.
Thanks for doing that.
Welcome.
So we're going to go ahead and launch our poll.
We this is a three question anonymous poll for you to answer.
We're just hoping to get a better sense of who's in the virtual room and what you already know about embodied carbon and material health.
Don't worry, it's not a test.
We're just hoping to learn a little bit more about you.
And if you've never heard of these terms, don't worry, sit tight.
We'll define them for you in just a minute.
So we'll give this about 30 seconds or so for people to respond.
Looks like we have almost everyone responding.
Thank you.
Maybe 10 more seconds to get your responses in.
Great.
We'll go ahead and end the poll.
Thanks for responding.
It looks like we have a diverse group and we have mixed levels of knowledge of these topics, which is really great.
So I do want to just provide a couple of quick definitions to make sure that we're all on the same page.
Embodied carbon is the greenhouse gas emissions that arise from the production, transportation, installation, and disposal of building materials.
Studies have shown that embodied carbon can represent up to 50% of a building's total carbon emissions over its lifetime.
As buildings become more energy efficient, embodied carbon becomes a larger share of a building's total carbon footprint.
Material health generally refers to the impact of material components or ingredients on human health.
Like embodied carbon, this encompasses the health impacts that can
occur across the entire life cycle of a product, so this includes people who are exposed to that product while it's being extracted or manufactured, recycled, or put into a landfill.

This graphic from the Carbon Leadership Forum shows the different stages of a product's life cycle. This is obviously for embodied carbon, but it's a useful frame for thinking about material health impacts as well. So diving into the drivers of this movement towards better materials, the first driver is regulation. It seems like almost every day there are new regulations and financial disclosures that are asking companies to report on the embodied carbon of their buildings. And it's not just regulation. In the embodied carbon space, we're also seeing increased scrutiny of certain classes of chemicals that are commonly used in building products.

One class you might have heard of is P Foss, which is known more commonly as Forever Chemicals. Green building certifications are also motivating a shift in the industry. More and more, these certifications are demanding that real estate meet certain criteria for low embodied carbon materials, healthy materials or improved air quality. The next driver that we're seeing is demand from occupiers in tenant spaces. Building materials can be an important expression of a company's brand, and many large space users such as Google, Salesforce, Meta and Kaiser Permanente are leading the charge and demanding these better materials because they know that healthy materials create healthy spaces leading to greater employee health, Wellness and productivity. As a result of this demand, there's also financial benefit. Buildings that are sustainable and healthy, especially those with certifications,
are transacting higher rent premiums and attracting tenants.

And finally, ESG investing is another key driver towards better materials.

Investors are increasingly demanding ESG performance, and so many companies are formally integrating embodied carbon and material health in their ESG frameworks.

Net 0 carbon targets often include ambitions for reducing Scope 3 emissions, which encompass all of the indirect emissions that occur both upstream and downstream of a company's activities in real estate.

That includes the emissions from construction materials.

So how do our material choices affect humans in the environment? There are five key impact categories.

These categories were initially created by the AIA Architecture and Design Materials Pledge and are starting to form the basis of many conversations and initiatives for reducing material impacts in the industry, including the Mindful Materials Common Materials Framework.

The first category of impact is climate. Around 11% of global carbon emissions are from the manufacturer, transportation and disposal of building materials.

The second category is human health. We all spend about 90% of our lives inside buildings and are exposed to chemicals and other substances on a daily basis.

The choices that development teams make about building materials directly affect the health of future tenants, workers and communities.

There are also equity implications of our material choices. People of colour and those with low incomes are disproportionately impacted by toxic chemicals.

They're more likely to have industrial manufacturing facilities sited in their neighbourhoods and face air pollution as a result.
And complex global supply chains can hide unethical working conditions and even modern slavery.

The next category is ecosystems. Ecosystems around the world are impacted by material extraction, manufacturer and disposal.

Insufficient regulation in certain areas can allow invasive and unethical extraction practices that deplete natural resource stocks before they can regenerate.

And finally, circularity, which is just a fancy word for a system that reuses products indefinitely without waste, currently in the built environment, is one of the largest producers of solid waste and only a very small fraction of those materials are reused.

In addition, many recycling processes require energy and release carbon to grind up, burn, or convert that material to different products.

The good news is that there are many strategies that teams can implement at every stage of the development process. We won't have time to walk through every strategy, but I do want to highlight a couple of key points.

The first one is to start early. By starting to think about materials at the outset of a project, you can consider alternative structural materials, engage manufacturers, and potentially save cost down the line.

The second point is to reuse and repurpose as much as possible. The most sustainable building is one that already exists. Of course, we're in real estate and not building is not always an option.

So it's important to look for ways to use salvage materials when possible and think about how to maximize efficiency in the design.

To do more with less. #3 is to build your requirements for embodied carbon and material health into your specifications.
This signals to potential partners that you are serious about choosing better materials. Many organizations, including Building Transparency and others, offer example speculation language to help you do this. And last, there are software programs and online resources, many of which are free, to help teams make more informed choices. These products can help model the embodied carbon and chemicals during project scoping. They can identify and evaluate low carbon or healthy products, and they can help teams report on its successes at project completion. This market is advancing rapidly and it's really exciting to see. There's obviously a lot more here, but in the interest of time, I'm going to keep going. So if you like this content and want to learn more, keep an eye out for the materials movement report coming out very soon. The report highlights more details around the topics that I just highlighted, including the market drivers that are inspiring a shift in the industry, how materials impact human health in the environment and strategies for incorporating better materials throughout the development process. It also shares 9 innovative projects that are leading the way, a few of which will be featured in this presentation. So with that, I'm going to hand it over to Sydney Mainster Sydney. Victoria, thank you so much for introducing this entire webinar, man. Can you introduce every panel I'm on because that was an amazing, amazing intro. So hello everyone. My name is Sydney Mainster. I'm the Vice President of Sustainability and Design Management for...
So today I've been asked to speak about Durst approach to selecting and installing sustainable building products using Spen as a case study.

So just a quick overview of this building, it's located in Long Island City. The architect was hand out Interiors done by Seldorf Architects. 978,000 square feet, 71 stories. It's that tall building you see in the back there, 958 residential units total, of which 288 are affordable units. That development also included the restoration of a historic Long Island City clock tower building. You can see it right in front of the of the building there, just next to the the elevated subway line. It opened in 2022 and it is the first building in the world, excuse me, first multi family building in the world to achieve lead before new construction platinum level certification.

As developers, owners and operators, we operate 13,000,000 square feet of premier office space in Manhattan, including 151 which...
was formerly known as Four Times Square, the world's first green skyscraper, 1 Bryant Park, the first LEED Platinum skyscraper and One World Trade Center, the tallest building designed to achieve LEED Gold certification in the US And so tall in fact that it actually goes off the slide. And if I try to actually scale this slide, all the other buildings become quite tiny. Next slide please.
The nearest residential portfolio has 3400 units across 3,000,000 square feet with several thousand more in the pipeline. Spen is the most recently completed residential property. Next slide please.
So all ground up development design decisions are made to balance these four sustainability focused areas, water conservation and quality, energy efficiency, material stream optimization and indoor Environmental Quality.
There is a relationship and trade-offs between selections made in each of these categories and it's important to test out and weigh out options when you're making design decisions of how they impact each of these. Next slide please.
So here's a very busy slide that I love to show because it shows how our values around choosing materials play out in terms of decision making. A decision making tree, let's call it. The big take away from this slide is that when you work with us on a project, the project selection requires iterative review for many team members. That could include design team members, operations team members, people that are have used this before or even the manufacturer, excuse me, definitely the manufacturers themselves, the design team members will do initial product research. Consider the their sustainability goals as integral to the material selection and really the ideal selection balances
performance, sustainability, cost,
availability, appearance, maintenance, end of life reuse.
But really few perfect ideal products exist on the market.
One item to add is that I created this decision flow chart actually back in 2015 and it is still how we assess and evaluate projects. Excuse me which products go into our projects today right please.
So at Spen and an all new Durst development projects,
building products are pre vetted during the design phase with follow up confirmation of materials selected during construction administration.

We do not want procurement and or installation the installation portion of the project to be delayed due to building products not meeting health or sustainable design criteria and not only being discovered through the submittal review process.
Subs and our construction managers should not be selecting the building products.
We want that to be overseen by the design professionals.
I can't stress that enough.
That means listed products in our specs.
So when the submittals come through we are not seeing something for the first time.
Is it 100% perfect?
No, but we try to minimize as many surprises coming through or showing up on site as possible.
During Spen we created our own building product database and workflow tool to enable the design team to better and more efficiently be able to complete that vetting process of material of building products and getting them listed into the spec.
The slide you see shows a snapshot of the range of products in our tool as well as vetting status on those products of and as well as which are included in our best in class.
So this is a number of product projects along the bottom and their status in the vetting process.
Our residential project currently under construction 2030 Hollets Point has over 1400 products listed in our database, which is about
the number we'll typically see in a high rise multifamily project.

Again, we try to avoid to the greatest extent possible leaving any spec section without a listed product option.

Next slide please.

So I'd like to talk a little bit about an example of some of the criteria we use for our building products.

We each product category has bespoke criteria that is associated with either the installation or use or known health concerns around that product.

I think this is well exemplified by our cabinetry criteria.

So specifically with cabinetry we have criteria around FSD certification.

We have criteria around formaldehyde content.

But the one of the most important criteria we have is around emissions.

And because the cabinetry on our project is manufactured bespoke for the project, we require that we do spot testing of that cabinetry for emissions throughout the project.

So we require a CPH version 1.22017 residential scenario.

We need to see the full report as part of this.

This happens first immediately after reward.

We require a mockup that gets sent for testing.

And then because we don't want surprises coming off the full production line, we actually randomly pull select cabinets from each delivery that we actually send ourselves to spot check and do emissions testing on to make sure that what we tested right after the buy is exactly what we're receiving.

And you can imagine that helps keep the fabricator on their toes as they know that we are testing it.

It also helps to remind the the Subs and on the trades that we take this quite seriously and that we indeed are going to be doing this random testing.

We also conducted a full indoor air quality test at the end of the project.

So it's as critical to the for those Subs to understand that in order to pass that IAT test, they
need to make sure they're installing products that are listed and tested and meet our criteria because that is the ultimate confirmation that we've met our target.

Next slide please.

One of the other pieces that we included in Sven was a post consumer glass in lieu of Portland cement in our concrete.

This ground glass PUZZLIN or GGP was incorporated in a slab circled here in orange as a test of viability, poor ease of pouring and workability in a slab on deck scenario. Fairly low risk.

This pour as well as a pilot in another Durst multifamily high rise project give us the confidence to incorporate ground glass pazlin at a much larger scale on our two multifamily towers currently underway. We've been able to incorporate it in over 18,000 cubic yards of concrete on the project as a partial replacement for Portland cement in the mixes, right please.

And then finally as mentioned Sven is the the first multi family building in the world to achieve lead before new construction platinum certification. Durst views lead certification as a reflection of our core sustainability values and criteria and especially regards to materials, health and indoor quality. Indoor air quality, excuse me, but it's not the driver. While the sustain why the sustainability criteria is actually placed on building product selection without changes to our approach to sustainable building product specification and use.

The project had over 100 contributing EP DS in the environmental product declarations and health project declarations HPDS. We also had fantastic success passing our IQ test which we rewrote to reflect the lower than lead allowed values we'd actually seen that we could accomplish on our other existing multi family projects due to the stringency of our health, our healthy building product criteria.

Our aim with spend as with all our projects is not just to provide a place where residents can live
and thrive, but to demonstrate to the entire community that this high standard is achievable with the right criteria, correct processes and attention put into place.

Thank you very much.

Thank you, Sydney.

Wonderful.

So now we're going to transition to Suzanne.

Great.

Thank you and and great project Sydney.

Looking forward to hearing even more in the discussion about that and and thank you everyone, really happy to be here with you today.

I'm Suzanne Founder, I head up global ESG at Prologis.

And for those of you not as familiar with Prologis, we're the global leader in logistics real estate and we've got 1.2 billion square feet in 19 countries.

And our portfolio is really distribution centers, warehouses that we develop and lease out to customers around the world.

This might be some of the largest global companies who are a key part of their supply chain as well as many small and medium sized businesses.

And so what's important though in our strategies, we're not just providing the space and also helping them on kind of looking at how to incorporate green aspects into development,

but we're also increasingly providing services related to renewable energy,

helping them with their EV trucks to transition to more sustainable transportation as well as other sustainability services.

We also when you think about construction, every real estate asset class is really different.

So the things that Sydney can innovate on and multi family are different than what you could do at industrial.

If you think about a warehouse and the roof space that we have, a big part of our strategy is being able to scale solar.

And so we right now are #2 in the US for on site solar and it's a big part of our our strategy going forward.

Next slide, we think about that scale just for context,
but 2.8% of the world’s GDP goes through a Prologis building in a year and so and 1.1 million people work under a Prologis roof. So we think about that and and take that scale really we see that comes with great responsibility but also we see that as an opportunity for how do we enable all those customers and and and really help Dr. sustainability not just for us but kind of more more broadly.

If you go to the next slide, one back, we have been setting public goals for many years. We have sustainability goals related to building certifications. Every new development is either LEED certified or one of the other certifications in the countries where we operate. We also have a number of well certified buildings going on to the Wellness piece, but last year we levelled our upper ambition to drive a new net zero strategy. We'd already had an approved science based target, but we aligned with the science based targets initiative net 0 standard to drive net zero across our full value chain. So not only Prologis’s own operations but also across our full portfolio and value chain by 2040.

We have a number of interim targets that help us to get there including getting to one GW of solar. We're around 500 megawatts right now, but we're and we'll get to for own operations sooner than 2040 by 20-30. If you go to the next slide, one of the things put this in context and and Victoria did a great job kind of talking about different types of emissions and and what level of control you have over it, 99.9% of Prologis's emissions are indirect, they're scope 3 and of that 75% is the energy use of our customers in our buildings. So for that we're working with them to drive energy efficient design and also helping them to reduce their, their energy needs, but also we're helping with renewable energy. So whatever energy they do use, they can use green power.

The 25% is really what we're going to talk about in the case study today, which is related to construction and development and embodied carbon.
And when you think about construction of an industrial building, we don't have as many different products as Sydney. We don't have lots of very special beautiful cabinets and different things, but we have a lot of concrete, we have roof materials, steel and then a number of other things that we're looking at. And so a lot of our strategy has been how do we Sidney has done with her company, what are the standards we have to do in our specs and then what are the ways we can innovate.

So next slide, so one of the first things we did after launching the net zero goal was to put in place new specs for our new construction. And so this also is you know focused on making sure every building is solar and EV ready, you know making sure you have a roof life that can support solar for the long term, also high efficiency HVAC materials and also completing a life cycle assessment for every new building that helps us to really get that embodied carbon piece.

The other thing we did is we had standards for retrofit. So going back to some of Victoria said at the start, we want to make sure everything is ready in our new buildings, but also how are we looking at our existing portfolio and making the right investments and upgrades as we have new tenants coming in or as we need to replace equipment. So next slide, so we have within piloting and testing different types of materials. Some of these I think Sydney had had covered in hers as well. And really the key comes down to making sure because the buildings need to last for a long time and because of the industrial usage of the building, we need to make sure they still meet all of our long term quality needs, durability. But we, we do really approach this from an innovation perspective because we have in 19 countries, we have very different environmental climates, different weather and so some things that
might work in one location or with one type of
build might not work in another.
So we've really worked with our our local teams also
to innovate.
We go to the next slide.
So this brings to me to the case study we'll
talk about today.
This is Prologis Evergreen.
I'm really excited about this project.
It's a project in Brampton ON Canada and it was
a project that as the team was kicking off said,
you know, there's lots of different things we could test
and we could test mass timber or we could test
you know, different things.
And they had come across the supplier in Canada that
creates a low carbon alternative to the concrete panels and
they're called Nexi, Nexi panels.
And what they they have a lower embodied carbon around
in this project, 17% lower embodied carbon than a traditional
concrete panel.
And then they also have a lot of other benefits.
And so we decided not just to test one or
the other, but test those two things together.
And I think that's one of the key learnings as
we go through our testing and piloting is, is
really understanding what we can accomplish when we're
looking at
the the whole design and the building and the different
things we can test together.
So you know when we think about Nexi panels, it's
the lower embodied carbon but also some of the life
cycle pieces it low uses less water kind of in
construction.
There are benefits in terms of the time to put
that in place because it's pre poured and and we're
able to pull that together quicker.
You know from mast timber, everything we're using for mast
timber is FSC certified, so for stewardship Council certified.
And mass timber also allows you to really address that
embodied carbon in one of our buildings and that results
in a 62% decrease in embodied carbon than a traditional steel skeleton.
Again, a lot of this is very data-driven for us as well.
So having a third party do the life cycle analysis on a building on a project that's when you have the different pieces coming together is helping then to drive that design back with our other teams and looking at where we can use this in other locations as well.
So with next slide, so just a few other kind of details on here.
On the other piece on terms of learn, well this will also have lead certification, but we're also looking at some other features, you know, cool roof LED lighting as a standard in all of our new buildings as well.
So all these things to help drive the energy use down in addition to the lower embodied carbon.
So I'll stop there and hand it back, but happy to discuss more when we get into discussion.
Thank you so much, Suzanne.
Thanks everybody for joining us this morning.
Happy December, everybody.
Again, Heidi Creighton, I'm with Skanska Commercial Development, VP of Sustainability.
So really overseeing Skanska sustainability initiatives across our US portfolio and just making sure that we're making the most sustainable, healthy, circular, resilient and impactful projects in all of our markets.
Next slide and as Victoria said at the beginning, we're an international construction and development firm, 135 years old and we're headquartered in Stockholm and Sweden.
And here in the US we have three different business
We have our civil group, we have our construction group and we have commercial development and commercial development is where I sit.

You know slightly different from Durston, Sydney, we also do all new construction but we don't hold on to our properties. We get them leased and then we divest and sell to investors.

So a little bit different model there, but this gives you a pretty good snapshot of when we opened up our offices here in the US for commercial development, how many projects we finished and how many we have underway.

But you know we're a self funded business model and which is really exciting. It gives us really great opportunity to kind of take some risks and really invest in sustainability and an innovation and have aggressive sustainability goals somewhere to to Prologis and Durst.

And we're really motivated to kind of do do that innovation and leading edge technologies and investment and really share that with with the broader industry and share with all of you and venues like this.

But yeah, it's you know working for a Swedish company really prioritizing sustainability is is extremely ingrained in all of Skanska's values and and decisions that we make and then it's actually extremely helpful, right. We've got great partners with our construction arm. It gives us just so much more control and visibility over what we do, gives us a ton more accountability, right.

We have the same governance, we have the same values, we have the same climate targets that we're reaching for. So it really helps us have much more collaborative and long term conversations and and decisions that we make on our projects.

And it's been really fantastic working for a company that's
been doing sustainability for so long.

We actually created our first sustainability report in 1996 and it was one of the industry's first environmental reports and you know like Suzanne and Sydney shared too, we also are really you know and do a lot of third party certifications.

We think that's really important to have that third party verification.

And so 100% of our commercial development USA portfolio is the certified or pursuing certifications and many of those projects also pursue well or fit well and other certifications on top of that.

But proud to say we've got 4.7 million square feet of LEED Platinum certified space to date and we've got another million and a half targeting Platinum in our pipeline right now.

Next slide.

So this graphic is really showing our sustainability target, so 0 emissions by 2045 and then we've got some interim goals listed there on the slide for 2030.

So yeah, we've got a lot of work to do and and as you can imagine the decisions that we're making today are going to be really impacting our emissions in in 2030.

So we need to be really proactive on top of this and be really strategic about the decisions we're making in what we're investing in.

And our you know our targets are are science based targets which means that they're in line with Paris 1.5°C capping our emissions at at that EC3 tool.

Hopefully many of you have heard of this hopefully many of you are using this tool.

The the link is right there.

It's a free tool to use, but it's called it's embodied Carbon and construction calculator, that's the EC3.

So Skanska Co created this tool with Microsoft years ago and it's we use it in all of our design and construction projects and it's basically kind of like you know, Sydney was talking about the EP DS.

So it's a database of a huge you know hundreds
of thousands of environmental product declarations which are basically like a nutrition level of embodied carbon.

So there's lots of tools out there. You know, there's some other tools that probably more teams might use during design to really inform, well, do we want to do a concrete or steel or a wood timber scheme and really selecting the best structural scheme. The EC3 tool can be used for some of that early modeling, but really it's best for helping make those procurement decisions, right.

So you put the material quantities into the database at your site location and then it will show you kind of the best in class, best version of the materials that you want to specify and procure for your project. So please use it.

The more, the more people using it, the more kind of you know demand across the supply chain that we're all asking for these EPDS, the more transparency and the more information we'll have to make better and better decisions as we all drive down to to 0.

And just just really quickly you know we're finding that on our projects we can easily see like a 10 to 30% reduction in embodied carbon by using a tool like this with no, absolutely no cost impacts. And then it's also really helpful.

You know there's still some markets where there aren't many or any EPDS. So you know asking these questions, having those conversations with your suppliers is is super helpful and we've we've seen good willingness to engage in those conversations.

Next slide, so I'm gonna get into the case study that I'll be sharing with you today and that's 1550 on the green. The envelope is up. So that's the rendering of it right there. The envelope is up.
a 28 story building and it's 387,000 square feet office tower and it's on track to be one of the most sustainable projects in the Houston area which we're really thrilled about and it's located next to Discovery Green.

That's the point of view from that that photo there. That's Discovery Green Park, which is a 12 acre park in the heart of Houston Central Business District. And this is the first phase of a three block mixed-use development that that we own and we'll be developing the next blocks over the next couple of years and decades.

But there's retail at the base about about 7000 square feet and then there's beautiful terraces on levels 1220 and 28. You can see some of the trees popping up there and just absolutely stunning views of Discovery Green and the city.

The architect for this project is big, the Archangels group and we're about to wrap up construction and we'll be delivering the project in in early 2024. And next slide, so you know in addition to to Well and leave Putnam certification for the project, we're also pursuing Wired Score and Fit Well certifications. And you know we've been working closely with the city and the Mayor of Houston. So it's aligned with with the city's environmental goals.

We've got 30% more fresh air than a typical Class A building in the project. There's a listing of other sustainability features that I'll just let you you scan through there on the slide. But you know it's surrounded by greenery and that really allows the tenants to experience the benefits of nature.

You know when they're working inside or outside the building, we have floor to ceiling vision and glazing and so really great natural light coming into the space. And then we also have a unique side core design and really open floor plates and that really allows for our tenants that that have a very kind of airy flexible office environment when they come to work in the
00:39:59 --> 00:40:00: building.

00:40:01 --> 00:40:01: OK.

00:40:01 --> 00:40:02: Next slide.

00:40:04 --> 00:40:07: So just wanted to dive in more specifically on the 

00:40:07 --> 00:40:09: embodied carbon for this project.

00:40:09 --> 00:40:11: So we use the EC3 tool to track the, the 

00:40:12 --> 00:40:16: carbon intensive materials, right, like the carbon, sorry, the concrete,

00:40:16 --> 00:40:19: the the rebar, the aluminum etcetera to really find out 

00:40:20 --> 00:40:22: where those key reductions could be made.

00:40:23 --> 00:40:26: And we discovered really quickly and early in the process 

00:40:26 --> 00:40:30: that the local suppliers, especially the concrete suppliers, we 

00:40:30 --> 00:40:32: didn't 

00:40:33 --> 00:40:36: just starting to become more transparent about embodied 

00:40:36 --> 00:40:40: carbon.

00:40:40 --> 00:40:43: And so for the manufacturers, as you've probably many of 

00:40:40 --> 00:40:43: you heard, that process can be pretty lengthy to get 

00:40:43 --> 00:40:43: EP DS.

00:40:43 --> 00:40:46: So you know us having those early conversations and 

00:40:47 --> 00:40:49: showing 

00:40:49 --> 00:40:52: the supply chain that we were going to be demanding, 

00:40:52 --> 00:40:55: move forward and be more transparent and get those EP 

00:40:55 --> 00:40:55: DS.

00:40:56 --> 00:40:58: But I'm really proud to say the numbers up there 

00:40:59 --> 00:41:01: on the slide, but we've we've achieved a 45% reduction 

00:41:01 --> 00:41:03: in embodied carbon from the baseline.

00:41:05 --> 00:41:08: And so the scope of that is the foundations and 

00:41:08 --> 00:41:13: the basement construction, the superstructure, the enclosure, 

00:41:13 --> 00:41:17: then some corn shell interior construction scope of work.

00:41:18 --> 00:41:22: And so the materials that that had the most impact 

00:41:22 --> 00:41:25: are are listed in the box there, but it is 

00:41:25 --> 00:41:30: the concrete rebar, metal framing, aluminum fins, gypsum 

00:41:30 --> 00:41:34: board, acoustic 

00:41:35 --> 00:41:39: ceiling tile acoustic ceilings and the carpet tiles as well.

00:41:39 --> 00:41:43: And then specifically in the foundations, we were able to 

00:41:43 --> 00:41:46: replace 55% of the cement with a low carbon intensive 

00:41:43 --> 00:41:46: cement and just to to give you a reference point 

00:41:46 --> 00:41:50: that's similar to taking you know 2 million vehicle miles, 

00:41:50 --> 00:41:53: not driven just as a carbon equivalency. 

00:41:53 --> 00:41:58: So these decisions we're making are, are very powerful.
And then I think I just have one last slide if you'd like to learn more about the project. This is the development team. So I just wanted to put their names and faces up there, that's their LinkedIn profiles. So if you or you know anyone who'd like to to leave some really stunning office space that's also low carbon and healthy, reach out to me Or or any of these three fantastic people. That's it for me, Vic.

Thank you so much to all three of you for your wonderful presentations.

I'm going to go ahead and stop sharing my screen and if you'd like to pull your videos on and we can open it up for discussion.

I was watching the Q&A function throughout and it looks like there's lots of good questions that are coming in from the audience as well.

And I'll just plug another quick reminder, if you have questions, please feel free to continue to enter them.

As we're chatting, I have a couple of first questions that to direct to the panelists.

So first one being, you know as I was researching for this materials report, one of the big discoveries for me and maybe this is obvious to people who are working in this space all the time, but supporting better materials in many ways is more about the process changes that you can make to the development process to incorporate those better materials, better specs.

Talking to manufacturers and Sidney, you highlighted some of those changes. I wonder if you might just be able to elaborate a little bit more on some of the things that you found to be most successful and if there's any low hanging fruit that people listening in can do right now to start to incorporate better materials.

Yeah.

I think I can't emphasize enough that one of the biggest pieces we really tried to change was leaving any product or material selection in the CA space after
and shifting the majority of those selections to the design process because you means that you have better ability to vet it early without running into possible delays or impacts to construction or submittal schedules.

So really pulling, pulling that out of submittal review, which is where it kind of traditionally lived and really living with the Subs to make sure that all the criteria was met and placing it back on the design team to make sure that you're really careful about what you're putting in the specs to begin with.

And I think the other piece as I mentioned, really improving A workflow around how to take what we learned on past projects and be able to give design teams a starting point.

There was one of the questions actually in the chat. There was do we do prescribe A spec from the beginning or do we ask designers to go and research this?

And my answer is we really do both. But we wanted to make it as easy as possible for the designers to start with Stuff already vetted that we knew met are really intense criteria like drywall or sealants or fire stopping or which is something maybe you know you don't want to spend a lot of time researching, you want to do the designers want to do the fun stuff they want to do the finishes and the cool technology stuff.

So if I can kind of shepherd them and and give them a great starting point for that kind of material.

The behind the wall stuff that we've spent a lot of time with the manufacturers really refining like insulation for example.

It lets them kind of focus and and do some fun questions with some of them maybe more innovative or present materials in the project sort of visible materials.

And then finally, I think the biggest thing is that we think it's important for everyone in the project to understand their role and how critical they are to meeting the sustainability and health expectations for the project.
So sitting with contractors making sure my face or one of my team members face is there one-on-one talking through exactly what the expectations are, educating them about material health, making sure it's clear there are consequences if they do not provide the documentation they're looking for or again that we're going to go ahead and test the whole project. So they better do their part. I think just making sure that that everyone's got buy in whether you're dragging them along or they're ready team members is is super key to to getting success. Oh, when you wanted low hanging fruit, sorry. I think going back to the behind the wall stuff like literally just hand over a drywall spec and an insulation spec and a concrete sealer, like give the stuff that like studs, you know, again like all the stuff that duck sealant etcetera. Like get that out of the way. Make that your basis for all of your projects if possible, so that you have a good list to start from, and then make the bespoke kind of project finishes or or pieces that are really visible. You can make that, you'll make those changes over time, but if you can start with like really good behind the wall stuff as a firm or as a company, I think you're already, you know, 50% of the way there with hitting some sustainable, healthy targets. Thank you so much. So many good Nuggets in that you talked a little bit about ensuring that everybody knows their role and having those conversations, Heidi. I know that was a big piece of 1550 on the green and having those conversations early with manufacturers and suppliers locally who at that point did not have environmental product declarations in place. But through those early conversations you were able to get them, you know, pull them along. So any additional thoughts that you wanted to add on that topic?
Yeah, thanks.

Yeah.

And you know, I think if you're just really understanding what's most material and where you could have the most impact and focusing on that, right, don't let perfection get in the way of great progress.

So yeah, we proactively reached out to the key Subs, you know prior to bidding really to inform them of what our expectations were.

We wrote an advocacy letter, we had a bunch of calls and basically told them that their ability to provide us with specific EPDS would be part of the selection and the word process.

So that signalling was really important.

And then you know as we reached out to suppliers just making sure that the EPDS would be created during the project since they weren't there at the beginning because when we started 1550 on the green, there were no concrete DPDS in the entire state of Texas.

And now now there are because of the work that we did there and I'm sure other people are are building off of the work that we've done. But it's just so important to get everybody on board and and and really just signal to them that you know this is going to be heavily weighted in our decision making and you need to get on board.

Thanks for that, Heidi.

And Suzanne, I know you know going back to that process piece, there's a couple of different things that Prologis has done to incorporate better materials and embody carbon goals into your processes.

Do you mind speaking to some of those?

Yeah.

So I think the first thing it starts, you know, with our capital deployment process.

So again, I think I always think about ESG and sustainability as making sure it's not a separate process, but how do you build it into your processes like Sydney and Heidi have talked through.

But the first thing is every investment committee memo, anytime
we're gonna build a new building, anytime we're gonna do a major project, there are sections in that investment committee memo that have our new net zero requirements. So we can include the cost of the underwriting in that project. And then also it's an opportunity for teams when they are able to do different innovations or requests to kind of test things we're seeing that come through that process too. So it can really be discussed at the highest levels of the company in terms of what the learnings are and there's a learning section of what we've learned through the projects as well. So I think that has been a real key for us and and moving this forward. And then the other piece of that just from a data and learning perspective, our global ESG team reviews every investment committee memo that goes through to. And then we have that discussion back and forth with the teams when they have choices to make or when they're trying to move to a higher certification level or where they're trying to engage with our you know procurement team on different types of materials to make sure they're meeting our standards. The other thing I'd say from kind of the integration, we're lucky to have a Prologis Ventures arm that has invested 180 million and 40 early in the growth stage companies. But we've been having good conversations with them about circularity and you know basically the embodied carbon aspects and and all the innovations they're seeing in the market related to some of these new materials. So that's another piece. One new thing that they invested in last year related to our solar business is a company called Solar Cycle. So as we are scaling more solar installations, we're also investing and partnering with organizations that are really thinking about
that life cycle approach to those as well.

So I am happy to add more.

I know there's a bunch of questions in the in

the chat that I it's.

Perfect.

Yes, there are a bunch of questions in the chat.

I just have one more that I wanted to get

to.

Talking about measurements.

Obviously, there's some great tools on the market both to

measure embodied carbon and material health a little bit

more,

a little easier for the embodied carbon piece.

Right now, material health is maybe a little bit less

tangible in some ways.

Obviously there's health, product declarations and other

labels that can

help get us there.

Vinny, you could speak to a little bit about what

are you using to measure your success when it comes

to material health?

You talked a little bit about indoor air quality and

some of those other pieces.

I wonder if you could expand on that.

Yeah, it is.

I would say we honestly still also struggle with how

to communicate the success in this area effectively.

To your point, it's the the metric based idea of

communicating material health in a or visually or graphically

or

even how do you put the the metrics together around

this is I I certainly do not have a great

solution off hand.

However I do think luckily we have healthy building network

which is working on a footprint tool which I think

is going to be I really like what they're trying

to do.

And I was even thinking as, as I think about

this question, that might be an opportunity for us to

kind of retroactively actually go back through a project and

and put it in there to sort of demonstrate a

starting point and against the baseline of how much better

our building is actually performed given the selections we've
I think mainly the piece that I used to talk about hitting success with healthy materials criteria is talking about the rigorous process we use to actually make the selections in the 1st place and ensure that what we've put in the design documents and we've selected actually makes it to the project and is what is installed.

Because we don't just assume that what is in a set of documents is going to get there. There's a lot of checks and balances and oversight, and I think that is just as important to relay to somebody that we're serious about looking out for human and environmental health by implementing these process and putting human resources on it to watch this as it is through the vetting process itself and the selection itself.

So that's typically what I use to convey it. One day I'll have a beautiful graphic and it'll be amazing and easy to understand, but we're not quite there yet.

Be excited to look forward to it.

So let's shift to some of the questions that are in the chat.

Thanks to everyone who has plugged their questions in.

We have a couple of questions that have been highly voted.

I like this one.

What do the presenters think is the major roadblock for developers to implement more and healthier buildings building materials?

Is it cost, performance, lack of information and that can go to anyone?

Yeah.

Yeah, I can start.

I think I think it's a mixture of things and sometimes and there's a lot moving in the external environment that's shifting this too.

But I think cost is you know, still an issue,

especially you know, I think there were some other questions
in, in the chat around size, organization and what you're able to do in one project versus scaling across multiple ones. And I think it's a time horizon thing as well. Some of these, as they mature, I think the costs are going to change and become you know more useful as we go forward. I think the other piece is just human nature, resistance to change, you know what works, risk aversion of trying something new that you might have to replace if it's not durable enough or if there might be a risk. And then the third part is regulation. I think you had highlighted Victoria, some of the positive regulation moving to some of these, but I think there might be some of these more innovative materials that don't they're the regulations haven't caught up to them in certain jurisdictions and so you have to kind of balance that timing as well. So, but I think it's about changing your conversation internally to you know make sure you have the right processes and I like Sydney's never get surprised but also about creating that space for innovation, that space for testing that space for local teams to kind of identify local suppliers that then could be really you know part of that project at that level and maybe scale across. In Victoria, if I can just build off of that too, there's just so many Co benefits when you look at it holistically, right. I mean and I forgot to mention at the beginning that we do, we do office and multi family and a couple of labs. So for the residential we're you know we're doing the interiors but for the office we're just doing corn shelf. So we have opportunities with with both. But you know I think we can really advocate for our tenants moving into our office spaces too. Like we've given them this really beautiful healthy, it's sustainable corn shell building and really encourage them when they do their fit outs to to do it with the same mindset. But you know I think when you focus on healthy
materials and when you focus on embodied carbon and and maybe think about the entire supply chain and who's being impacted by all of the work that we're doing, There's just multiple benefits, right As we get off of petroleum based products and we're healthy natural products, those products have a lower embodied carbon. So I think it's just that holistic look and you know, you know, asking our teams to try to do, to do the legwork and like Suzanne said, you know, it's change or so it makes everybody a little bit uneasy because they're not doing things the way they had been doing it. But that's everything we're doing in sustainability is always asking people to change what they're doing today to to make it even better for tomorrow. And I love what you said high to about Co benefits because I think there were some other kind of questions in the chat about, you know what are some of the health impacts of doing mass timber and and other things. And I think one thing we've learned through this project is you know the the next site panels that we used, they were the the, the wall units that they had for us. They were quicker to install. There were other health benefits and things. When you think about mass timber, there's you know, research studies out there with satisfaction from laborers liking to work that's safer you know in terms of some of these other pieces sometimes. So I think really you might make a decision based on sustainability and you find it helps your time to build. It helps on some of your other metrics as well. I'm sorry to piggyback again, but then you just reminded me of something that on 1550 on the green, because we were so focused on the embodied carbon, we asked our engineer well to be more to really kind of find any opportunities to reduce and not oversize the structure.
And so they were able to shave off I think 3/8 of an inch on the floor system on every single of those 28 floors. And that was equivalent to 700 cubic yards of concrete and 70 truckloads of concrete in and out of the neighbourhood. So even just thinking of all of the X, you know, all of that noise and traffic and you know, combustion from those trucks and the air quality impacts to the neighbourhood, reducing that. So 3/8 of an inch might not sound like a lot, but it had significant positive impacts. Amazing, wonderful.

We're coming right up against the top of the hour and I'm so sorry that we weren't able to address all of the wonderful questions that came in through the chat. I want to thank the panelists so much for joining this conversation, for presenting and sharing about their impressive projects and for engaging in this discussion. We're so thrilled to be able to watch this change happen in the industry towards a better sustainable and healthy materials and we're glad that you were able to join this webinar. So thanks. Thanks for joining us today, Audience. We dropped a link for a short survey in the chat and we'd be grateful for your feedback if you might be able to share your thoughts. And again, keep an eye out for the recording of this webinar as well as a link to the Materials movement report which is coming out very soon. Thanks again and I hope you all have a wonderful day. Take care. Thank. You.