Webinar

ULI Colorado: Getting to Net Zero Energy
Date: July 15, 2021

00:00:00 --> 00:00:02:  Start recording this so people can watch it later.
00:00:02 --> 00:00:05:  I'm marrying a big. I'm a director with you like
00:00:05 --> 00:00:08:  Colorado and we have an amazing panel plan for you
00:00:08 --> 00:00:09:  today,
00:00:09 --> 00:00:13:  followed by Q&A. Just before we get started,
00:00:13 --> 00:00:16:  the audience will be muted throughout the session.
00:00:16 --> 00:00:18:  Please submit your questions and comments throughout the session.
00:00:18 --> 00:00:21:  You're allowed to submit those through the chat box,
00:00:21 --> 00:00:25:  and then we'll address them at the end through the
00:00:25 --> 00:00:29:  Q&A and we are currently recording and this recording will
00:00:29 --> 00:00:31:  be available after the event.
00:00:31 --> 00:00:34:  I'd like to turn it over to Michael Cheesy Executive
00:00:34 --> 00:00:35:  director of ULI Colorado.
00:00:36 --> 00:00:40:  Hey everybody welcome so glad to see you all here
00:00:40 --> 00:00:40:  on zoom.
00:00:40 --> 00:00:44:  We are transitioning to more in person events and I'll
00:00:44 --> 00:00:46:  talk about this in a moment.
00:00:46 --> 00:00:47:  I'm excited about today's program.
00:00:47 --> 00:00:50:  This is really what you'll I does best in many
00:00:51 --> 00:00:51:  regards.
00:00:51 --> 00:00:54:  Kind of looking ahead to what's coming next and interpreting
00:00:55 --> 00:00:57:  it for our Members so they can be prepared from
00:00:57 --> 00:00:59:  the business and philosophical sense.
00:00:59 --> 00:01:03:  And we have a lot of changes coming ahead in
00:01:03 --> 00:01:03:  Denver.
00:01:03 --> 00:01:06:  This program will help you read the tea leaves and
00:01:06 --> 00:01:08:  move forward as needed.
00:01:08 --> 00:01:11:  So next week we have a really great program with
00:01:11 --> 00:01:13:  a leader in the field on diversity,
00:01:13 --> 00:01:17:  equity inclusion. It's a training program and we've talked about
this quite a bit in the last year.
It's become a number one priority.

Our guest leader of this program is Doctor Kyra Banks, who is a nationally known expert on Addyi prominent African American scholar as well.

So there's still opportunity to sign up for that. I hope you'll be able to do that.

It's a virtual in two parts on July 21st and 22nd.

Also related to DI, we've been doing book groups on line in virtual for Massive in very successful, very well attended person we did with the color of law.

The notable book about the history of zoning and how it's discrimina Tori.

Next one is about access to capital for people of color,

and there is an opportunity to read to watch a video and to inform yourself before joining that discussion.

So that's coming up on August 5th, a combination virtual live event.

Is on Thursday, August 19th, it's called Unmasked economic recovery in real estate in Colorado.

Will start with a panel in the morning that will cover various the whole state and economic trends in the post pandemic era, including the mountain regions, and that'll be a morning 8:30 to 9:30 and then the afternoon there was the option to do a live tour of one of two prominent new projects. When is the 9th and Colorado redevelopment by Continuum Partners?

Which is pretty well done. Another is more in progress.

100 acre redevelopment of downtown Westminster, which is a former dying mall re being redone as a high density todds.

So hope you'll be able to join that. Both tours will be led by experts who worked on those projects.

You'll learn all about them and will follow them up with networking.
Happy hour. We're going back to live new member copies, so it's been virtual for the last year and a half. If you're new to you, lie and want to learn what it means to be a member, how it can benefit you, how you can get involved. Personally, you should be attending this my colleague Atlanta pageant is posting links to registering for these events in the chat box as we go along and then super excited about the impact awards. It's our big banquet that we put off for six months and the hope we could do it as a live event and we are. It'll be held on Thursday, September 23rd at the Super Ballroom at the Denver Center for the Performing Arts. We've got 15 fantastic finalists. You can read about him in a blog on our website. Will also be published in several real estate publications and really excited that this year's entries were incredibly robust and a lot of them did address the most pressing social and environmental issues that, in addition to being really interesting examples of real estate projects fall meeting this year, is in Chicago, and that will also be a live event will be the first time that you alliance hosted a live national meeting in almost two years. We hope to see you there. You can follow us on our website as well, and if you missed. Any of the virtual events in the last year and a half they are posted for members on the knowledge Finder website and you lie and you can see the link there in your box. So next slide please. Annual sponsors or how? Mainly how we support ourselves. We do support ourselves in Colorado. We are part of the global organization. We have more than 50 this year.
Very grateful for that. We're about to add a new summit level sponsor a Norwood development of Colorado Springs, so we're grateful for their support.

And if you'd like to know more about sponsoring an event or becoming an annual sponsor of you like Colorado, please contact me. I want to thank my colleague, my colleague Mary and Epic who took the lead in this program.

Our new colleague Madeline Groin and Atlanta Paget, who just do a great job of getting these programs organized for our Members.

So I think I'm going to turn it back to Mary Ann and listen along with rescue. Have a fantastic panel today and we look forward to going about their projects and their insights.

Thank you so much Michael. Everyone here so excited for the panel.

We have lined up for you today and we're starting out with Courtney Anderson with the city and County of Denver who will discuss their new code, regulations coming and building electrification requirements that are related to their climate change goals.

We're really excited about that. She'll be followed by Emily Pierce of utilized Green Print Center for building performance and they're going to be talking about lessons learned from their new report on building electrification.

And then we're going to hear it from two different case studies. In Colorado, one is going to be spoken about by Elin McCready, of East West Partners. She'll be talking about Electric Pass Lodge in Snowmass and Andy Bush of Morgan Creek Ventures will discuss both new development and retrofits for building electrification.

and then at the end, we'll have your questions that you put in the chat box moderated by John Berkey of Urban Villages.

So with that, let's get started by Courtney.
Hi, thank you Maryann UM so I'm just gonna briefly walk us through some of these pieces today so the first one being the net zero energy plan. The code adoption process and electrification within the city and County of Denver.

So to put it in context, Denver's greenhouse gas emissions are 64% come from homes and buildings, so 15% of that is from homes and then the 49 percent is from multifamily commercial industrial. So just it really helps to kind of get in context what we're talking about and what our work does and what are the facts.

So our goal for new construction is to beat that zero energy by 2030, and that's because by 20 fifty 40% of our building stock will be new construction. And taking all of that into consideration, we developed with a net zero energy implementation plan.

The definition for net zero in Denver is a new building or home that is highly energy efficient, fully powered from on site or and or offsite renewable energy. And there's four foundation so that the first one being having a highly energy efficient building.

Second one is all electric, so no gas third is powered by renewable energy and electricity and the 4th one is being providers.

Captain man flexibility for the grid. So all four of those make up the definition for.

Net zero Energy and Denver. The principles we use to develop the net zero energy plan is we made sure there were looking at incentives to equitably support construction and that we're achieving net zero energy as a whole community because we know it might be unfair to ask them buildings to all due meds.

So we're looking at it from a community perspective. Similar item, you know, different solutions. So different building types, every building is different,
so uhm, how does how does each building get as far as they can?

And I'm using stakeholders and their expertise to advise us as we go through this process.

The support for net zero energy, UM, definitely include resources and staff within the City of Denver,

but also for community support.

You know, including marketing, training incentives and financing educations,

huge programs, advocacy so that you know there's a lot to get to that step of supporting the community and having Denver being able to support what they need.

Uhm, so as I mentioned,

this is the net zero energy newbuildings implementation plan,

so you can find that on our website and it's a fairly lengthy document,

but there's a lot of good items in there and so it was in collaboration with come.

Kassirer, which is the office I work for so climb in action,

sustainability and resiliency and CPD which is community planning and development and it's a plan for getting new buildings and homes to net zero by building type and looking at each code cycle to determine those appropriate targets to get there and then also looking at the cost of net,

zero energy and all electric.

It's really helpful to see you know where we're at,

so you can see the Denver Energy Code in Denver Green Code,

and then that green dashed line for both commercial.

I'm also family in residential to see where we need to go and those steps we need to take to get there,

pretty. Pretty steep. Thanks also we need to break that out between our code cycles.

And that's what brings me into the 2021 code adoption process that I'll just touch on.

So we're currently, UM, working through that.

Right now we just completed our code working groups in
June, and those were a series of six meetings, a focus around energy efficiency and sustainability. So they were meetings to bring concepts and ideas to the table from community members, stakeholders, subject matter experts to really help define what the vision for Denver is. Currently we're accepting public proposal. Also, if you have a really good idea that you wanted to submit, we're extremely happy to review that and bring it to the code committees and then the code committees will be starting in January 2020, so anyone can apply to Unicode Committee as well, and those will review the concepts that were helping out a formal proposals as well as the public proposals that will be submitted. So this is kind of that typical timeline of, UM, what the code adoption process is. So as I mentioned, you know we're we are developing public proposals right now, or I'm sorry. Developing proposals from the working group idea is right now we're also collecting those public proposal amendments from July 23rd to that deadline. So next Friday, and then those go to the Technical Advisory Committee and anything that proceeds forward from the. The committees will then go forward to City Council. But, uh. And this is the same for, UM, all the I codes as well as the Denver for income. So this is, uhm, you know, a pretty pretty dense chart of the different code cycle. So the code cycles every three years. So you can see that across the top and then it's broken down by highly energy efficient electric renewable energy and grid grid flexibility. And those are the the four pillars for net zero energy and and Denver,
so you can see the targets for this Commercial Code timeline as well as.
The residential code timeline, so these are from the implementation plan, and that plan is is that it's a plan. So now we're going through the code adoption process with these targets in mind and developing proposals to meet those targets. So if you know you can see in here, for example 2024, we're targeting that all electric for residential, so all abstract equipment. And this can be found in that cereal energy implementation plan. A few words like to look a little further. So I'll touch again on the renewable heating and cooling plan. It just came out in June of this year and it's four existing building things, so it's electrification for existing buildings, and I'll I'll go through some some peas here. So gas, uhm, it's helpful to see where gas is actually utilized. You know, space heating accounts for 67% water heating 30. I'm cooking clothes, drying is only 3%. So electrification has high impact climate benefits, so methane, which is the main component in natural gas, causes 80 times the amount of climate change as standard carbon dioxide emissions does. So it's a group grade is moving to 100% renewable power. Electric heating and cooling is that path to reduce the emissions generated by buildings and homes. And the Denver target is to be 80% renewal on renewable grid by 2030, so that kind of, you know, it helps us put into perspective why it's so important to go electric because the grid is also going to be targeting renewable. Heat pumps are certainly a great way to get there, so he comes move heat instead of creating it. So there are 2200 to 300%
efficient and. To kind of help understand why that seems almost magical,
100% efficiency is based on a source creating heat,
so heat pumps are moving heat,
not necessarily creating it, which is why they're so efficient.
Uh, he uh going out electric two promotes equity,
so especially for AC, UM,
for homes that don't have it today,
so about 30% of Denver homes do not have air
conditioning,
which is really critical as temperatures are rising.
Can improve equity and safety,
so electrification, certainly. That is one of our main main
factors.
Uhm, you know. Like 30%
of low income homes in Denver today the gas equipment
fails.
The carbon monoxide test. And that's comparing to the market
rate homes that only 5%
do so, making sure we improve that safety in all columns.
There is electrification. It has lower exposure to indoor air pollutants,
so residents of homes with gas have nearly three times
the rate of asthma compared to the ones with all electric homes.
Other better outcomes based on everything that we just went through,
but they have the same or similar cost,
so especially for this this portion here we're talking about existing buildings,
so we wouldn't recommend someone to take their new gas furnace.
I got yesterday and go replace it today with electric.
We're looking at when that life cycle of the the furnace,
the hot water, he your end.
So when that ends most buildings.
At homes can replace it with electric clip equivalent at a similar cost as they would pay for that new
gas system.
It increases credit utilization. Umso Denver SIS electric system already
built for the summer loan for the air conditioning, so winter heating needs can shift to renewable electricity without
significant infrastructure buildout. And this is all within the Danvers of renewable heating and cooling plan.
Again, that was published last month, so that's online or on site and it goes through how we engage the community.
Why look at renewable heating? There's major plans for the parts?
Are there plans for the major heating technologies so it breaks down your typical systems and what those approaches are for electrification?
And also goes through the implementation strategy. So the energized Denver task Force is taking what we've learned from the renewable heating cooling plan and helping the city design a building performance policy for existing buildings, and that will improve health inequity, create jobs, and drive climate solutions.
To achieve net zero energy in existing buildings by 2040. So this is the road map for the energize Denver task force.
UM, the green in the meeting six and seven. It's where we're at right now, and they're actually currently in their meeting 7 right now, so they're getting close to. Having recommendations that will move forward to to City Council shortly.
That's it, thank you. Thank you, Courtney. Not with that. We're going to introduce our next speaker, Emily Pierce. Hi Emily, thanks Mary Anne thank you everybody. Me. So, uh, my name is Emily Pearson, director on utilise Greenprint Center for building performance,
and I don't know how many of you all are familiar with green print.

I don't know how many of you all are, I am. Oh geez, I had to do some zoom controls.

Go ahead, Emily. Thank you so I don't know how many of you guys are familiar with utilized greenprint center. But Greenprint lives at UI headquarters. I am based in Washington DC name actually sitting here in my in my house outside of Washington DC. Actually looking at a heat pump at my house so I appreciate Courtney kind of teeing up all of that. And green print is one of the three arms of sustainability work at US headquarters. So the other teams are the Urban resilience team and are building healthy places. Team, but GREENPRINT specifically is focused on carbon emissions reduction. So decarbonization reducing carbon emissions, energy efficiency. All of that good stuff. And we do that through a cohort of about 45 members, company members, owners, investors, real estate owners and investors who. Collectively commit to a couple goals and we help them strive that way and push that way on their ESG and sustainability journey. And so those goals are 50% carbon emissions by 2030 carbon emissions reduction by 2030. And then we actually just added last year in honor of not only a 10 year anniversary for Green prank, Rembrandt was founded in 2009, but also with an acknowledgement that this is really where the market and the industry and. The country in the world are headed, and that's net zero carbon operations by 2050, and so you know, we've heard from Courtney about net zero, and you know, bringing that down home to Denver and we really wanted this this second goal, this this collective push to be an acknowledgement that you
know this is this,
is really where the industry is headed.
So this is just a quick snapshot of who green
part numbers are.
I wouldn't spend too much time here,
but what I really want you to take away is
just that greenprint spans a lot of different countries.
A lot of different asset types,
geographic regions, sizes, portfolio types,
really, you name it, and these you know.
4045 Plus real estate owners and investors have all
committed
and made that acknowledgement that they are pushing
ahead on
not only carbon emissions,
but now increasingly. At zero as well.
So what I'm here to talk to you today about
is is this whole electrification or electrifying commercial real
estate
writ large?
So we just put out a recent report on exactly
that.
It's actually called electrify. And and it really dives into
101,
maybe 201 of electrifying commercial real estate,
so this is. Not necessarily a new topic.
I mean, the electric technology is for a lot of
these building equipments and you know machinery have
been around
for some time and but as far as scaling it
as far as cities making it a priority as far
as commercial real estate owners pushing it out to their
portfolio.
That's what's the new part and understanding how this how
this fits into the bigger perspective.
I think Michael had a Greek Greek quote and I'm
totally going to steal this next time I'm talking about.
This topic about reading the tea leaves on on what's
coming and and it's so true because,
you know, electrification in and of itself is not new,
and but what it means for real estate is something
that for many companies and for many stakeholders,
you know whether or not in a designer or architect
that's what's new. So what this looks like for us is it was, you know, about a year or so long of research, analysis and interviews with stakeholders. All that good stuff. We boiled this down into really four points for what the business case for electrifying commercial real estate are. So so out of those records, we've got financial benefits. We've got impending regulations, technical benefits, and environmental benefits. And I could probably take the remaining hours so that we have here left on this event to really dive into every single one of these. But I'm not going to do that, and I I wouldn't do that to my fellow speakers or attendees to have to listen to that. So if you really want to dive into any of these Pacific bullets, I definitely encourage you to read the full report and you know it's an. It's an in depth report, but it's not meant to be super wonky. Super, super confusing. We meant it to be an introduction to the topic and but but while I'm on this item to give you a snapshot of of these pieces. And a few things I want to call out. So when you're looking at the financial benefits side. You know it right now that I guess the elephant in the room is that some electric technology and some electric you know, retrofits and construction are going to have a higher upfront premium. It's not necessarily a given. That's not, you know. When all is said and done, that that's what it is. But you know, in many cases there is a premium and what I will say is there there's been a number of studies done and one particularly out of Colorado is it was based out of Colorado study and it
looked at the cost of replacing or retrofitting a piece of equipment at the end of its useful life.

So taking a fossil fuel?

A piece of equipment and at the end of its life, replacing it with an electric alternative and what they found was there was actually only a 2% premium to do that versus swapping it out for, you know their fossil fuel.

So while there may still be some level of premium.

And at the end of the day, it's it's not huge and it's getting smaller and smaller as the technology grows.

So the other thing on the financial benefits side too, is that you have to look at this as an aggregate and as a long term so you know you've got the premium for the upfront that you may have to overcome. But when you look at it over over the long term and over the operational life of a building, the cost there are going to be significant for you as a building owner and investor.

Gas infrastructure is fluid and I no pun intended, uh, you know it. Gas utilities prices are fluctuating. That's a very unknown territory right now.

And when you think of the unknowns there, you have a much different scenario that you're looking at when you're looking at the longer term operating expenses and costs of an electric folding.

I'm on the regulation side so you know this is obviously Denver focused as specific conversation, and Courtney is obviously done a great job of teeing up all of that.

So I'm not gonna spend a whole ton of time here.

But you know, I would definitely encourage anybody who's on the line who has either clients.

If you're, you know, architect, designer, you know something on that level, or if you're an owner or investor and you have a portfolio in a lot of cities in California.
Increasingly in New England, these regulations. Whether they be gas bands, whether they be carbon emissions reductions, you know, however, a city or state is is structuring them. They're coming. They're already here, and they're definitely not going away. And while there are some cities that are kind of pushing against them, these regulations are are not going anywhere, and so you know matter if you sit on a design side or if you sit on an owner side, it's in your best interest to be factoring that in and analyzing that and how is this going to affect my bottom line, both now and down the line now? Versus having this debate and discussion internally when it's too late, frankly. Uh, so moving on to the technical side, the technical side of electric equipment versus fossil fuel equipment can get super wonky. Super detailed, so I I won't dive two too deeply into that. But one thing I do want to call out and this kind of segues into that last bullet here with the environmental benefits nicely is that it's been proven most recently by by NBI, the new Buildings Institute that, per unit of energy. Energy or per unit of energy energy produced by electricity versus fossil fuels is the more efficient choice. So not only do you have the technology options that are increasing, so you know I mentioned the heat pump that's sitting in the corner of my room here. I mean, that's not an option that necessarily would have been available. You know, in years past you have the technology that's improving. You had costs as supply and demand. Does you have the costs coming down?
But you also have the more efficient option when you're looking at.

Electric buildings versus fossil fuel combustion and this kind of segues into my last point here about the environmental benefits.

Frequently when you hear this conversation, or when you think about this, you might think about pure energy efficiency sustainability, that sort of type of debate and conversation.

And there are huge and tremendous benefits on that level.

But something to that I want to highlight, and especially in the last 18 months, is the health and Wellness conversation.

When you're thinking of fossil fuel combustion equipment is tremendous,
	http://this can be as simple as a gas stove in your apartment or in your.

Home or all the way up to commercial level?

You know, commercial scale kitchens where you have multiple gas stoves and commercial chefs who are having having to.

You know, juggle all of this.

The studies are increasingly showing that having those appliances or pieces of equipment,

so the gas stoves or or what have you.

Actually have a detriment on your help and there's plenty of anecdotal examples that I've I've heard from.

You know, various GREENPRINT members and others,

but there's also some very real statistics out there that they've done citywide analysis and shown that the incidence of asthma in those cities and areas that they have higher levels of fossil fuel combustion are higher.

So there's a very real health and Wellness consideration that needs to be factored in on top of the efficiency and environmental benefits of the.

Decarbonizing your building writ large.

And one last point, before I go on here to my next slide I I wanna make two,

you know, Courtney tied up the net zero conversation and you know my my fellow speakers gonna be talking a
lot about that as well.

But you know one thing I wanna make really, really clear too is that if you're having a net zero conversation and you haven't already had the electric conversation,
you haven't already had a conversation about electrifying your asset.

Whether or not you're in Denver,
or whether or not you're in a different city where they don't have any sort of,
you know regulations electric needs to come first before the net zero conversation.

Net zero I think, is getting a you know a sexy, attractive conversation appeal in the sustainability space as it absolutely should.

It's very difficult. It's very terrifying,
but it's kind of the new concept,
but electrification and energy efficiency or the the pillars and the building blocks of that conversation,
that we have to be talking about now versus versus later,
when it's too late. So just a couple more slides here for me and what I'm gonna what I'm gonna breakdown for.
You guys are both the challenges and then some of the successes.
Some of the ways to overcome those challenges on electrification

So the challenges that I have listed here are by and large only retrofit concerns when you think of new construction,
new construction, electrifying a new construction is easy.
I'm obviously using air quotes because everything is relative,
but electrifying a piece of new construction and asset that you're building from the ground up.
The technology is there. The costs have by and large come down,
you know, new construction? Electrification is is not.
Where we need to focus the bulk of our how do we overcome these barriers?
So a lot of these are specifically aimed at retrofits and you know Andy has a lot of anti Bush has a lot of experience with with retrofitting and you know very high energy, energy efficient buildings and so I won't. I won't steal his Thunder too much, but but this list right here are some of the biggest challenges that you're going to come across when you're thinking of a retrofit. Moving from a fossil fuel all the way to electrification. Which is unfortunately something or fortunately what we really need to be focused on, because all of our building stock is not going to be newly constructed in every city. Every city is going to have its own makeup of new construction or retrofit, so the timing is really important to consider when you think of how many occupants are in the building, how many tenants are in the building, when do their leases turn over? Is it single tenant? That's really hard. That's really something that you have to factor in. Much, much longer term. It's a much, much longer term discussion. So ensuring there's enough space and making sure that your electric equivalents to your fossil fuel so you've got a boiler, for example, and you're looking at a heat pump or or whatever your swap out is going to be. It can't be an apples to apples comparison. It's not. It's not a one to one when you think about the other nuts and bolts of what, what, the technology pieces need, it needs to be on a much larger scale. Apples to oranges, almost unfortunately because it might involve rearranging your central plan. It might involve you know duck work that wasn't there. You know there there's a lot of a lot of pieces that you have to factor in, so it can't just be a one to one footprint.
to footprint conversation,

it has to be a holistic building.

I'm on the weather consideration side,
you know I don't even tell you guys living
living in Denver.

Cold weather certainly has considerations.
Heat pump technology has significantly improved over the last decade.

You know it used to be that you couldn't really
go below.

35 or so degrees Fahrenheit with your heat pump technology
and that is no rapidly improving,
so those barriers are coming down as technology improves and

supply and demand and costs improve.

Uh, so upfront costs. I've already talked about that.

I'll kind of skip over that for the sake of
time and social equity is something that I I do
want to highlight.

It's not necessarily something that we have time to dive
into tonight about,

but social equity is something that's a very real consideration
when we look at electrification.

If you look at the number of gas utility customers
and you decrease that number of gas utility customers because

a subsection of that bucket has moved to an electric
building or their building has been rates of Class A
trophy asset,

and it's been renovated to electric,
suddenly the burden and the cost of gas utilities and
gas costs are spread out over a smaller group of
people and of residents and tenants.

I'm simplifying the social equity piece here.

There's many, many other facets of that conversation,
but it is a very real consideration,
not something that real estate can and should be the
only ones to be aware of and solving,
but at the bare minimum it's something that real estate

stakeholders,
no matter where you sit,
should at least be aware of.

And so occupant preference. Occupant preference is really
rapidly increasing

as far as their desires for sustainability.

So you know, that's not to say that you're going
to have a tenant come in.

That necessarily knows they want an electric building,
but they may be coming in and saying,
you know, we want to net zero building,
or we want to leave platinum building and it's up
to you as the real estate practitioner and stakeholder to
be able to say,
OK, this is how it's going to translate to to
an electric building versus a different type of building.
So utility infrastructure and you know The Dirty,
dirty little secret major always.
Unfortunately, you know electric utility infrastructure.
We can all go to electric buildings overnight.
I mean, I'm not. I'm not going to try to
argue otherwise.
You know, here this afternoon or or any other time.
But you know, we can't just snap our fingers and
go to 100%
electric buildings. There does need to be a much more
progressive Flo,
but this is really where the public private partnership is
going to have to come in.
It's not going to solely be up to the utilities.
It's not going to be.
Really, up to the real estate is going to be
solely up to any industry,
but just being aware of the of the progress of
it.
And also if you're a real estate developer owner,
I'm involving your utility. If that's not a conversation that
you're that you're used to having make sure you're having
conversations with the utility.
I it's always surprising for some folks what what their
utility has to say.
If they haven't, haven't chatted with them,
and what incentives they might be missing too.
OK, so this is this is my last real content
slide here,
but I did wanna want to kind of take some
of the you know that was a lot of negative
and I wanna I wanna take some of the negatives
and talk about where some of the solutions lie and
what the stakeholders that we interviewed for the electrify report
what what some of them shared with us are ways
to overcome those barriers. So making sure that you're optimizing
those vacancies and occupant turnover.
So even though occupancy can be a barrier to electrifying your building,
making sure that you're looking at it now long term
and you're optimizing those points of turnover versus kind of letting them pass by and not factoring in turnover from
the perspective of how am I electrifying my building and
and same?
You know the same thing as as far as scheduling
and planning for equipment turnover.
Those are plans, their schedules that happen now versus down
the line,
so making sure that you're that you're really on top
of it.
Perhaps before you would necessarily be thinking of what's going
to happen at that tenant turnover and and then you
know second to last point here is is really making
sure that that you've got the case for buy in.
Now is the time to be having those conversations that
only would see sweet,
making sure that communication is is sound and going,
and but also making sure you're communicating with your property
teams and again,
utility. You know I've I've brought up the utility.
He's a number of times,
but all of these stakeholders have to be involved in
the conversation,
even if it's not a group that you would necessarily
bring to the table.
For a typical retrofit or a typical tenant turnover.
And then lastly, you know really,
the only way that we're going to make net zero
goals or gas bans or electrification,
It's really great that we're hearing right now.
One off examples and. And that's that's fantastic.
And I think we should continue to do some of
that.
But we really need to be scaling this and thinking
of it as a as a wider solution for portfolios,
supply and demand, you know.
At the end of the day,
if you're starting to do it over a wider number
of assets,
it's going better off for everybody in the end,
and so just last.
Last point here. And if you want to take a
look at the full report,
I would definitely encourage you to.
It's it's free and openly available.
You can find it at ui.org/electrify.
It's also on utilized knowledge Finder platform or feel free
to reach out to me after this webinar if
you have any specific questions.
So Mary and I won't hit it back
over to you. Thank you so much,
Emily. And I'm going to turn it over to our
next speaker,
Ellen. Mccreadie with East West Partners.
See thank you Maryann, can you hear me?
Yep, one second while I mute myself before you take
control.
Thank you, OK? Alright, well I'm gonna guess that she's muted
so thank you for having me really great presentation so
far,
so I'm going to talk about our project here in
Snowmass called Electric Pass Lodge.
See. OK, so first for context,
for context. So Snowmass is one of the four ski
areas and the Aspen Snowmass collection.
Snowmass Base Village sits at the base of the resort,
There it's about 19 acres just over a million entitled
square feet,
residential, commercial and hotel across 17 buildings.
So it was originally approved back in 2004.
The first six buildings were completed around 2009,
but the project stalled as part of the recession,
and it sat essentially dormant and partially built for about
a decade.
Uhm, so it was acquired by the partner partnership of
KSL Capital Aspen Skiing company in East West Partners in
2016.
We focused on the core of the village 1st and
since then we've built,
sold or leased roughly 300,000 square feet in five buildings.
In addition to closing out real estate sales at the
Viceroy Snowmass,
so today the village includes more than 20 restaurants and
retail tenants expanded guest services.
Related to transit and skiers.
Public amenities. The ice rink you see here in this
screen,
a game lounge you see in the lower right and
a climbing wall,
the Limelight Hotel. So we've now turned our attention to
the future phases,
and so there's another 500,000 square feet still to be
developed on the remaining parcels.
Kind of what you see.
I don't know if you can see my cursor,
but the vacant land there and.
So the first of which is Electric path Lodge and
let's see.
Uh, and so this you can see on the map
there is the first building to expand the village from
the existing core on the right of the screen over
towards the Viceroy Snowmass on the site you can see
here is shown.
It's rounding out, sort of the most visible front facade.
If you're approaching the village by car up Brush Creek
Rd.
And So what is Electric pass lodge?
So the project is 52 for sale condominiums and one
It's ski in ski out the face of Snowmass. It has an adjacent village pool, so I'll touch a little bit more on that later, but that's an amenity that's open to the entire base village.

And then in terms of amenities, the building itself really the main amenity, is the village and everything surrounding it. But there's an owners lounge, both interior and interior and exterior as well as ski locker room and underground parking with this building, so it's about 101 total.

Gross square feet. So the mission when we set out this on this project is to offer approachable, responsible and healthy skin scale residences and the hardest comma space village. For seekers of adventure and an enlightened mountain living. So from the beginning really leading with responsibility and sustainability in all of our messaging.

So what does sustainability mean for this project? We've really tried to push the envelope here. We've used both passive strategies and technology. To do so, an energy efficient powered by 100% renewable energy both on site solar but also off site through Holy Cross is pure energy program. Uh, and also high performing. So what we found to be seemingly the biggest benefit of our design. Designing a building like this is that you end up with just again a really high performing and healthy building in terms of indoor air quality. So. These sorry, there's a little delay here, but these were the pillars that sort of drove our marketing and I won't dive into them fully. But as you can see, leading with responsible and sustainable healthy development from from the beginning.

So the building includes basically 3 unit types, split between two and three bedroom configurations,
and priced from just under $1.4 million to just over $3 million.

I've included a few renderings, all roll through them pretty quickly, but this is from looking at the building from the North looking South, so this is as you're approaching base village on Brush Creek Rd.

This is the other side of the building. The South side of the building, and to get back to the village pool.

A big caveat here of this building is that the pool is a separate, basically amenity. It again serves up Eudy requirement that serves the entire village and so it is actually not all electric.

It's heated and the snow melt around the pool deck itself is gas is provided by gas fired boiler. We just couldn't find a way to do that efficiently. Without incorporating geothermal into the project, which we couldn't do due to a number of constraints and so, then here's just an interior rendering to get an idea of the design. And so basically, you know we've had a lot of talking about. Sort of. Why did we go this path?

And one thing that kind of. Uh, anchors back to is Aspen skiing company. A couple years ago, had a really robust campaign. They called give a flake, and I think that really is applicable here. Our local economy depends on snow and therefore reducing carbon emissions. And so as developers in the ski resort, we feel like we have an obligation to care about what we're building. We also think that sustainability is a luxury value which is really evident in the automobile industry. Uhm, and we're probably and obviously really applicable to our
buyers here and then.
probably preaching to the choir here or definitely but that
net zero and electrification are not just a trend today,
but they're seemingly the future of real estate development.
So our approach for this building is a carbon free
strategy and it starts by building a really efficient building
past some strategies in orientation,
but also just in building a really robust envelope with
enhanced insulation,
insulation and triple pane windows,
and then using those things to control belodon the mechanical
systems.
And then from there installing really efficient systems.
So then and then taking that and powering it all
electrically and then sourcing that electricity through 100%
renewable energy. And again, that's through onsite solar panels,
but also through fully crossed here has a pure energy
program which is completely renewable power.
So sustainability features and I'll get into some of these
details in the following slides.
Again, it hinges on a really robust envelope,
so with enhanced insulation and triple pane windows,
and then I'll look at some of the other things
on the following slides.
So there's a lot of things that are hidden sort
of behind the scenes,
and what those things are,
or phase change materials. We have phase change material in
the living room,
ceilings and bedroom ceilings, and that's basically a passive material.
That absorbs and stores excess heat and then releases it
is space is cool,
so it's a passive way to maintain temperature in a
space.
We have 100% natural ventilation where preconditioned air comes through
an earth tube system and then goes to an RV
in each unit that provides both natural ventilation and also
bypass cooling. So I already spoke to the insulation and
then I guess it's visible,
but the but the. Rooftop solar.
So then there are the things that our buyers will
see,
touch and feel on a daily basis.
So one of those is an induction cook top.
A lot of people are used to cooking with gas,
so I'm getting buyers used to induction.
The other is a fireplace.
So up here in the mountains a fireplace sort of
a must have,
so we're using it's from dimplex there optimist technology and
I should have included a video of it's really cool.
If you have a chance to look it up.
But it's a steam technology.
Basically that dumb, but it's a,
but it's electric, so it's water vapor.
It's lights on water vapor instead of a gas fireplace.
We have electric heat. We have ceiling fans as part
of our passive cooling and high performance triple pane
European style windows.
And then another thing is that people can't have gas
grills and so we have.
We've been testing here. Some electric grills to try to
figure out something that's a good solution for those that
want to make use of of their out of outdoor
cooking. And so I'm going to circle back to this
only if there's a few minutes at the end.
But one key aspect was that we had to educate
our buyers and really just tell them why are we
doing what,
we're what we're doing, and what are we doing in
a way that that they would understand.
So if there's time we'll circle back to this video,
but on the sales and marketing front,
oh, ah, hold on. Go to the next slide.
There we go. So in the sales and marketing front
we let heavily with sustainability.
We did some test advertisements.
In fact when we lead with a sustainability message in
a lifestyle message and the sustainability message actually
resonated.

Most meaning it got the most kind of clicks in action.

But we also went to an all digital sales process, so our kind of discussion was at a next generation building deserves a next generation sales process, and that was driven by what you see with the automobile industry.

Meaning you can go online and put down a deposit for the next latest and greatest Tesla or electric Hummer or whatever it is.

And it's just a really seamless and easy purchasing process. So we had just really high level teaser type advertising last winter and then later in the winter we announced sort of our all digital sales campaign which turned out with COVID and having less kind of travelers and market turned to be how to be really effective.

So we had this process where you could make a reservation to purchase a unit with a fully refundable just $1000 down and then.

Uhm later, so you just simply kind of clicked forms online on the website and paid with a credit card and then so we had reservations.

So we open reservations January 26th.

We got 20 reservations in the first half hour and ended up with 75 total.

It was just $1000. It was fully refundable so we knew there would be a fair bit of fallout resulted in 16 contracts and so we would call that as success on our end. But once you made a reservation, you could go online, similar to picking the interior color of your car.

You could pick your residences that you liked and what you were, what you were looking for, and actually our sales team could kind of see what you were, what you were shopping for.

You could do your due diligence. Look at all of the finished books.

All of the purchase and sale agreement, and then you would convert to an actual contract.
We did that starting in March, so. Uhm, I can go, you know, deeper into that, but we would definitely call it a success. We've been out in the market since March and we now have 45 residences under contract, so only 7 units remaining in the building for sale, and see if the next slide shows where we are today.

So we started construction. On the 1st week of April we broke ground and so we're just in sort of site work and foundation work. Right now it's about a two year build, so projected to be done in the spring of 2023. Uhm, and so that's what I have.

An electric pass lodge in terms of what's next here in Batesville. Age render design on project called Cora, which we haven't released information on, but I'll say that we are carrying forward the electrification strategy and exploring even more enhanced, sustainable design that's being vetted as we speak. So that's all I have.

I don't know Marianne where we are with time for the video, but it's on our website if people want to check it out. That's exactly right, and we can actually play it after Q&A.

But thank you so much Emily. Really a pleasure to see what you've been working on. And now I'll turn it over to our next speaker, Andy Bush with Morgan Creek Ventures.

Hi Andy. Hi, how are you?

Can you hear me? Yes. So I'm going to talk.

You can go to the next slide just about kind of our focus.

We at the moment or about a little bit between the 3rd and halfway done with about a half million square feet of all electric buildings.
We built half a dozen.
We have another half dozen in the works and I would say that just for us as a company, we're essentially focused on all electric buildings I think is Ellen said.
It's really all about great building envelopes that make it work.
I'll talk a little bit about how we use PV, including vertical walls, but one of the cooler things we're doing right now is we're actually doing some testing. Some windows that actually just have a window film that is about right now.
6% efficient solar panels that are 24% efficient, but they're thinking these windows might get to 12 or 14%.
Think if every building could have windows that were half as efficient as solar panels, and you can still see through. And so it's really high performance design.
We're starting to look at all of our operations with a focus on sustainability in both new buildings as well as existing retrofits next time.
We're also starting to build for others because we're finding there's a demand by other people to have full electric buildings.
Kind of built to suit, so we just finished a modest sized North American headquarters for VHISOLA.
Manufacturer of environmental instruments, that's essentially.
Net there already, and that we haven't put the solar panels on yet, but it's all electric. Great building envelope there.
We actually did composite steel with CLT, cross laminated timber for the floors, actually becomes ceilings in this case, and so there's a growing demand for this kind of product.
Next slide. And for me it still has to be, you know, as good or better than the competition. I think Ellen talked about that it's got to be really great product.
Next slide. I mean for us whether it's office or next slide residential people really have to want to live in it. I mean, so for us, it's this kind of combination between design and sustainability that slide.

And we're also really focused on not just electrification, although that's a really big part of it. But this is a water treatment facility in one of the projects that we did, so all the water from the roof comes down, drains through this roof garden.

It was actually a condominium project in this unit was on the 1st floor, but it's sold for more than the units on the 4th floor because of the water garden.

So it's about blending all of this together in today's world.

Next slide. So for me I'm starting I'm kind of a reformed net zero energy person or the other way to say it is kind of.

Net Zero 1.0 is done and I think it's time for us to start breaking it down into the components.

And as Emily said, net zero energy is great, but really only a certain kind of building type can get to that on site and so it's also combining it with offsite power that's clean.

But the biggest thing for me is starting to break it into these. Component Parts 1st is how much energy do these buildings consume?

The second is what's reasonable to produce on the buildings on site and then how do we procure the right offsite power?

And then finally how do we manage these long term basis so that they stay sustainability sustainable and optimized.

So the first part is and this is a slide.

I spoke from someone else.

I'm not sure exactly who but the biggest point is you take the left hand side.
Which is existing buildings consumed somewhere between, let's say, 70 and 80 E wise per square foot per year and don't worry about what that really means, it's it's KB Btus per square foot per year. But just think of it in relative terms, they consume 80 new buildings and retrofit buildings. Need to consume somewhere between 25 and 35. If we're really going to make this work. So we need to go from 80 on the consumption side 70 to 80 to 25 or 35. So just think of it in those relative terms. Next fight. And this is one that nobody can see, and it's actually a piece of a much bigger spreadsheet. But the point that I would make is while this is inevitable and honestly, it's not rocket science, it's complicated. If you go to the next slide. I would say that in designing a net zero energy building or or really forgetting that their energy and high performance building a good building that consumes somewhere between 25 and 30 per year instead of 80, that there's probably 50 core decisions that you need to make and, and there's enough good professionals out there now. And the consulting side, whether it's architects or sustainability consultants, it's not that hard to do, but it's important that you think of it as a process. And don't just jump into electrifying building. You need to understand why you're doing it, what the components are, and the decisions you're making to go to the next slide. So here in the left is that kind of average new building which might be 57 and if you look at the slide on the right in the case of one of the first couple buildings we did, the 25 was what we thought we could produce in terms of on site power. So then those kind of graded pieces in the middle are the different decisions you make.
Really good windows mean a difference between out of that 25 May mean a difference of one when it comes down to a residential. Building about a little bit more than 1/3 of the energy gets used, producing hot water, so that's really big decision. As part of it, windows was a one. Hot water is a 7th. If you think of elevators in a commercial building, they're a .5. If you think of something like. Plug loads in a residential building at the very important decision. It's about a third or a little less. Same way in a commercial building. Plug loads or about a third of the load. There can be a lot more, so you start getting into these kind of little decisions that all add up to make it good building next slide. I think this one will play, so these are four buildings that we've done. All electric. You know they look like normal buildings. Hopefully they're good. Design the shade. Their structure is designed to provide additional area for solar, but it also creates a really cool outdoor deck. But I think that the point I'm trying to make is when we used to think about the early net zero buildings, they were these kind of chromatically sealed boxes. Now they're just really good buildings and they can be just about anything from a design standpoint. To kind of respect those core principles next line. So is element said building envelopes are kind of the key to all electric buildings we have to make sure that we have really good insulation and that we have really good windows that usually are crippled painter quad pain. They're filled with either argon or Krypton gas and then try didn't even know Krypton existed in reality. But it's a gas in our temperatures and and then we use things. We've used a product that everybody should know about
Aero Barrier. That's essentially released almost like a bug bomb and what it does is it goes out and it fills all the cracks and it can reduce air infiltration by 25 to 50%. So we do that for all our residential units. We also do it for the commercial and then it becomes kind of easy. Right? LED lighting makes all the sense in the world right now and it's pretty darn cheap. Commercial heat pumps are becoming more and more efficient as Emily talked about and Ellen talked about and they get it. More efficient by sometimes 5 to 10% a year, or at least with each generation every couple of years. So we're getting to where all the component parts are there. It's really just about how we put it together next time. So on the mechanical electrical side, once you've built a really good building envelope again, commercial heat pumps are kind of the way to go for both residential and office and indoor air quality. We really focus a lot, obviously given COVID on air infiltration as well as air filtration. Merv 13 filters and more hot water systems for commercial use all kind of instant hot out butter systems for residential use, period decentral. Plant as part of it and sometimes will capture the waste heat coming off of some of the sewer and other things to kind of pre warm the water and then electric. You know lead is kind of a no brainer. Similar to Ellen. We're doing induction ranges and we're educating people as part of that, but when we think about things like social justice and equity,
kind of the worst air quality component of any home is usually the gas range and they don't work very well.
The those and how water heaters tend to have leakage of gas and they fail.
But the other thing is when we look at gas ranges we think of the air quality or measure it.
Assuming people used events and they don't really use events unless it's smoking and you think you're going to say you're smart climbs off,
so there are starting to be some really important kind of air quality equity issues as we look at these conversions that point.
So then we get to production and for all of our projects we do solar analysis.
This is kind of an interesting one because we found that on that slide in the lower left hand side that was a SE facing wall,
but it's not really good sign.
And what happens is in Boulder it gets really good son early in the morning up until about noon or one where we lose this on east facing wall.
But that's the best son of the day.
So we ended up if you go to the next slide kind of looking at a little kind of draped solar side so we did all the.
Roof as well as the vertical side.
We go to the next slide.
What that's done is you can't be utility here in the sense that I can't charge for power,
the sense that I can't charge for power,
but what I can do is include power as part of it,
and what we found was if we were able to negotiate increased rents of a couple dollars of feet foot,
which was about the cost of utilities in that area,
we actually got a really good cash on cash return for solar before financing before tax credits.
There are demand rates here in Colorado because of Excel.
That anyone who goes over a certain level needs to pay,
and so that reduces the return a little bit.
But it's a pretty exciting way to start looking at solar next time.
The other thing that you find is it's a little complicated to attach when you build a vertical solar wall, as we found out next slide, but you have to put something on a wall and so when you actually take away the cost of a brick walls, about $40 a square foot metal panel might be $30 a square foot, and that it actually improves the return on investment because your siding it was something that spot.
And then finally we start looking at operations. You know for us, plug loads are a really big thing. How much do people use with things they plug in an average plug load in an office building? It's about 22. Again, EU eyes, but forget the the details. It's 22, we needed people to consume more like 7 so you really have to work on. How people use laptops. How people use monitors, how they do power strips with timers and sensors. All that is important. So it becomes an important part of how you design buildings, but it becomes more important in terms of how you manage with people. Next slide. So we've created a green lease for office. We're doing the same thing for residential. It has certain requirements, but it also gives certain incentives for tenants, and it allows people to kind of work together on that next time. So if you're a tenant, you know what you find is dependable, people are excited to work in. An increase productivity through everything from thermal comfort to just perception and and it really has paid off for both us and our tenants next slide.
We also look at renovating buildings, and that's gotten to be a big part of what we're starting to focus on. It's a little bit different, a little bit more difficult. Next slide. You know the problem with existing buildings is usually they don't have very good envelopes. Did you convert them to heat pump technology? It's really difficult sometimes to do with people in the space.

Now, things like LED lighting or converting hot water is pretty easy, and honestly single family residential is a pretty straightforward conversion. It's something you can do over a weekend, whereas offices have to be done over. You know, sometimes weeks. It's not just a weekend project, but. So the issue that I see when we look at these conversions is again, a typical office might utilize 80 USD per square foot per year. We need to get it down into the 30 or 35. Range if we're going to make these conversions and not create kind of clogging on the grid and deal with peak load problems, so that's our big challenge in terms of conversion. Next slide. So on the envelope side, I think Windows are the key we were doing. Some studies with Sandyland, Sandia Labs and we were working on north facing windows in Colorado to kind of keep the heat in. We've also worked on some window inserts and conversions to keep the heat out and and windows are going to be really big part of it. There's also some new technology that you can use on the inside of walls and you really only lose about half an inch and you can add it and you can get some really good additional insulated values on walls.
From the inside as part of it, and again as I said, it's pretty straightforward to convert water systems, LED lighting. It really comes down to converting the heating and cooling system, which is an issue in a fully occupied building where tenants have rights not to be disturbed next time. I think the other thing though is we have to remember that we get sometimes a little too technical on this and think of it as a process of electrification about EU eyes and about regulatory structure like this. Remember that buildings are really for people. People live in people working and people shopping and eating and it's really this is another slide I stole from somebody. But what we're finding is that really good buildings they improve. The health of people. They improve productivity for companies. They improve the way that people work and relate to each other and and buildings are really just something to create a cover around people. And let's not forget that as we go through this whole process. So do we wait for cities to do it? And we do it ourselves. You know, as I said, we've done half a dozen. We have another half a dozen to go, and it's really a process of where we have to come together. And I think we could create some problems, some unintended consequences if we create a regulatory structure that landlords put off upgrades as long as possible. If we don't have the right incentives. If we don't realize the fact that tenants in buildings have rights, whether it's a residential building or an office building, residential converts a little bit easier. And there's more of a turnover. Office is a little bit more difficult,
but we need to partner with cities and create some
really great examples.
Get great data and make sure that we know what
we're doing and we understand the potential unintended
consequences effects
So where do we go from here?
You know, just experiment. Take the things that we've done
that work and do them again.
And really, this isn't a question of should we do
it?
You know this is a can we do what we
must?
We don't have a choice.
We're in the process of electrification,
even British petroleum's in the process of electrification,
so we should be realistic about that.
And I was at a talk in Denver like a
year ago,
and I forget who actually said it.
But if you go to the next slide.
We were talking about these kinds of issues and we
were saying the comment was this is a great opportunity
disguised as an unstoppable problem,
and I think that's where we are right now.
This is a must do,
and it's something that's inevitable.
The question is really just how do we create an
opportunity from this both economically and in terms of
people's
livelihoods and well being.
So thank you very much.
Thank you so much Andy.
With that, we're going to start our Q&A.
Come I'm going to turn it over to John Burgee
who's the Chief Feldman officer of Urban Villages.
And he's also the Co chair of you like Colorado,
building Healthy Places Committee. And he's also on the
energized
Denver task Force.
Uhm, so John will be moderating the Q&A from the
chat box.
So if you have questions for the panelists,
please add them to the chat box and we'll try to address as many as we can.

Alright thanks, Mary Ann and thank you to all of our speakers that was fascinating and I loved how you all talked about it from a different angle and so I think it was really robust to be able to have each of you present.

So thank you. I'm going to go through and ask each of you one of the questions that were asked in the chat box and I will continue to monitor the chat box so anybody else that has extra questions, please ask them. I'd also ask if it feels comfortable with it to turn on your camera so we can have a little bit more of a dialogue with our guest speakers. Alright, so the first question is for Courtney Anderson in in order to achieve the long term goals that we've been talking about that you presented on, is there any risk of political change and future city officials undoing some of the work that you are doing that you're implementing today?

That's a great question, so you know everything. Just go through this City Council process and.

What really is critical before it gets to the City Council is it has the support of the community. So without the support of the Community it's it's hard to, you know, get something totally threw up, but once it once it, once it gets there and once City Council understands that this is what the vision is from the community, not just from city staff but for everybody, this is what we want. And if it gets past, it's already had that, you know that support behind it for so then.

And then it becomes policy. So for someone to come in. I would find it a little difficult because the Community is already spoken up. So I think that's why we're really, uhm, we really work hard to make sure we're engaging our stakeholders,
community participants, experts to really to build that vision.

So it's not. I said this, and you know, my manager said the so it's no. This is what the the committee is looking for. Great thank you, Courtney.

Next question is for Emily. You talked about how technology is leveling the playing field between fossil fuels and renewables. What are the areas you think will see the most change in technology over the coming decades? Right question? Uhm. Well. I think. I mean I think the first the first pieces we're gonna see the technologies that already exist continue to improve and thus the costs come down.

I mean I, I keep, I keep thinking of the heat pump example and perhaps the reason that my mind keeps going back there not only because of Courtney and Andy's presentations, but I just had to have my whole HV AC system replaced in my house yesterday. And and I live on. If anybody is familiar with the DC area.

I live, I live in Arlington which is just outside DC. A lot of old homes. My home is very very very old and there's no duct work that was that was built with it initially. And so heat pumps are really really fantastic option. I mean, I'm I'm sitting in the lower level of my house and you know my husband can be upstairs two floors and we can have completely different temperatures and so I think I think that wasn't possible a few years ago and it certainly questions it wasn't possible. It was possible, but the costs are coming down. The logistics. Are much easier and the technology is getting much more widespread, so I think the first you know the first answer to that question really is you're going to see some of the technologies that were niche before.
Be much more mainstream and I think on top of that I.

This is perhaps a little bit optimistic of me, but I'm gonna I'm gonna throw it out anyway.

I hope I think we're going to see some of the passive technologies at be more prevalent, and you know, when you there's some really cool net zero buildings across the country that have utilized passive technologies so you know passive technology being something as simple as operable windows that are, you know, situated at very strategic positions and and. Opening so that you can cool the building, cool or heat the building depending on the temperature. UM, by using that tech, not natural technology or that natural, those natural influences rather than having to lean on technology.

And I wouldn't necessarily say that you know Earth tubing and you know East West Partners has some awesome stuff there. Wouldn't necessarily say if that's totally, totally passive. I don't know what the terminology would be, but I think technology is like that. That's a little bit more cohesive with the natural environment. I really hope that's where we're going to see. More, uh, more of a focus. I don't know if that will be something that we'll see in everybody's home, you know, in five years, but I think you know two things we're going to see the the technologies that are niche right now, and that are more expensive. Come down and then I think some of those passive technologies are going to be. Utilized more.

Great, thank you. It's been fun to see how much the technology has changed over the last decade, so hopefully that momentum keeps up.

Next question is, for Alan, a lot of comments about how beautiful electric pass as a building is one of the questions was what was
embodied carbon emissions considered when materials were selected to create the structure.

So yeah, we did not study embodied carbon for this building, and but when I said in our next building, we're exploring sort of even more enhanced initiatives. We are exploring CLT as our primary structure. And that obviously has embodied carbon benefits. We also, though these are high-rise buildings, so and the building code here in Snowmass hasn't caught up to some of the things that you see in Denver that allow for CLT in a high rise application. But we have worked with the fire department and so we're able to potentially explore that here for our next building, and that's just obviously a portion of embodied carbon, but. Giving us a little bit down that that path.

Thanks, I love the branding and how you brought it into such a big part of the sales of the units. I'm curious if you think that it obviously resonated and asked in a market like Aspen and Snowmass does that same type of branding? Do you think resonate in other markets that are maybe not be as high end luxury markets? Uhm, you know, I think so. We we also we had some concerns about going heavy. You know, in the all electric branding, because we have a huge Texas contingency here. And you know, I mean not to say that there aren't people there that really like appreciate this type of responsible development. But it's probably not for some of those buyers their top priority.

I think one thing that made it successful here was we were at the right intersection of. Uhm, sort of. Uh, the market and price point, and sort of where we were trying to land and so I think we hit a market in terms of the product that you know. I mean, you can sell a lot of things in
a really good market and you know,
we've we've definitely had people who have.
We had a person that made a reservation only so
that they could tell us that the future of buildings
is gas and so that they could have like a
venue to do so. But I think it really has
resonated with buyers from,
you know, from all over and.
We're definitely interested. I mean,
our next project will be even more luxury than this
and that,
to me, seems like a bigger potential stretch.
Just you know, people used to their gas fireplaces and
things like that,
but so far it's been,
you know, really good feedback on the marketing side.
Yeah I would. I would imagine gas ranges and gas
fireplaces would probably be some of the more difficult ones
to get
buyers around and we've actually had the most questions about
you.
We've had very few questions about that,
but we've had the most questions just about the cooling
passive cooling and earth tube in the RV's.
Alright,
thank you on next question is for Andy.
Have you had any difficult difficulty financing both from debt
and equity?
Your portfolio as you move towards all electric and start
to implement a lot of these technologies that maybe are
a little less widespread,
less known. Yeah,
I mean, I was honestly pretty frightened about it two
or three years ago,
and what we've actually found is there's competition for it.
I'm guardian. Life Insurance Company has been one of our
bigger lenders and what we're finding is lenders wanna high
performance portfolio and I think I used to think the
change in this industry was going to come from little
people on the fringes like us and I think the
change is really going to come from institutional lenders and
developers who are. Focused on ESG requirements and who also
look at the fact that I just had a conversation
with Guardian last week and so it's kind of fresh
in my mind. We have a 12 year loan.
It's a construction firm and they were saying we used
to not think about the value of a building at
the end of that 12 years and who was going
to refinance it and whether there was a risk at
the end of the term for us and all of
a sudden 12 years from now,
it's starting to be a little frightening for lenders to
think about a fossil fuel.
Our building versus an all electric building,
so I think we're at this really interesting kind of
cusp of change in the lending world.
In the institutional world where you can already see
owners and lenders kind of day,
risking from a resiliency and environmental risk from floods and
hurricanes,
I think you start to see the same thing in
terms of buildings that are fossil fuel powered.
It's going to happen over the next 5 to 10
years.
That's me, that's music to my ears,
and probably most of us on the call,
you know, ESG investing was something that was of lesser
known and even a couple of years ago.
Can you explain that nomenclature and and why?
Potentially there are more investors,
more lenders that are focused on it.
Yeah, I think
I mean I've been around long enough to have conversations
with lenders where as we talked about solar panels,
or you know an electric building.
They were pretty frightened about it.
I think that investors now have,
you know, environmental and social responsibilities and
goals as part
of their investing portfolios,
so they have a requirement to do that the same
way that utilities have a requirement to start converting
certain
percentages to clean power.
So these are kind of the under the hood.
things that are happening in the institutional world.
And then I think you also see institutional investors.
There's a fear factor. One side is the good to
do good factor.
The other side is what if we get holding the
bag on a lot of buildings that are impacted by
hurricanes or sea level change.
So there's both positive and negative forces that are
impacting
both institutional lenders and institutional investors.
And and as I said,
I used to think you know change would come from
the fringe,
but the big change. I think it's going to come
from the center here in the next 10 years.
Very encouraging. Thank you. I'm gonna go back to
Courtney
now.
Courtney, as as you are implementing the cities
implementing these
different programs,
how are you ensuring that the real estate industry and
other various experts are being consulted and so that the
policies are are well set up for success?
Yeah, that's a great question and I don't need to
repeat myself from my first answer.
UM, but really we have a lot of stakeholder engagement.
UM, for making sure there's really everybody that that cares
about this or so affected by this is has the
ability to be on these task force.
You know, John sound like you just came from the
energize Denver task force,
so you're pretty familiar with that involvement level.
But really, before we develop policy,
even as we're going through the code adoption process,
we are asking everybody and anyone that wants to
participate
in the working groups to come and give us their
ideas,
you know, or their ideas that let us know what ideas you don't like and we're reaching out to all communities that we can really have like an equity focus. So every every step of the way we're using a racial equity loan fund. And and evaluating it from really every perspective that that we can bring in the people to help guide us do that, but from the stakeholder standpoint, yeah, everyone has an opportunity to be involved and we always encourage that. And the more support we get from. From everyone, I mean we're heavily involved with working with XLS well, so we're not just developing policy and hoping that they come along with us. It's really, you know, it's not just a two way St. It's like a 1001 St so. Yeah, thanks Cortana and I will confer or agree with you. I think that it's been incredible to see how actively the city has really been reaching out to various stakeholders and experts in different fields just to continue to make sure that the policies are implementable and that they try to understand how the market will respond to it. Question for Emily, how do you address energy resiliency? We see you know the power outages in Texas and in various things as we move to fully electric. How do you address that when you're going to 1 energy source? Yeah, it's it's $1,000,000 question right now. Uh, we actually do. Have we have a break out a piece in the report that I would definitely encourage. Encourage whoever asked this question to go and and read in more depth that I can do. And you know 60 seconds here. But you know right now, utility infrastructure is, you know, a serious consideration. I don't know that it's a real
estate problem to solve,

it's it's not a real estate problem to solve.

It's a real estate problem to be aware to be

Cognizant.

Of you know where the potential breakdown is and you

know electric utilities are not are not risky.

You know you don't need to be concerned as a

real estate practitioner for or you know,

hooking your building up to an electric utility.

That's not, you know, we're we're many,

many, many decades past that,

and so as far as you know,

the utility perspective. I think it's just a matter of

being Cognizant right now and and you know,

being aware of your building and engaging in a conversation

with the utility.

Unfortunately, I know it's a little bit of a cop

out.

Answer, But I think it's.

You know, not not a real estate problem to tackle,

just quite yet.

Yeah, great thank you. I will.

I know we are running out of time or we

are out of time.

One of the questions that was asked is can we

get the speakers contact information.

So I would suggest maybe that Mary Ann or somebody

can maybe send out your all contact information if you're

OK with it to the attendees rather than trying to

put in the chat box right now.

Will share the recording and will circulate with the panelists

later to see if they're comfortable with that.

Alright, I'll hand it back to you.

Mary

Ann great well, thank you so much before you all

leave.

I wanted to play ellens video if you have to

jump off.

Thank you so much for joining us today.

But if you can say for I think the video

is only a couple minutes raelyn if you can stay

for this.
Yeah I think it's like a minute and a half great.
OK, well I'll go ahead and play it.
I don't hear the volume though.
Did you know that inefficient buildings powered by fossil fuels, including szumski homes, contribute up to 40% of the carbon emissions that are causing climate change and shrinking our winters, but not this one? Electric Pass Lodge is powered by 100% renewable electricity with no ongoing carbon footprint.
We started by orienting the building to maximize solar exposure. Then we designed an incredibly efficient shell with state of the art insulation, triple pane windows and phase change material that traps heat or cold to use it when you need it. Everything in the building runs on electricity through a combination of rooftop solar and off site renewable power. It's an extremely healthy building for the planet and for you, thanks to plenty of natural light and operable windows. No toxic materials, no gas being burned inside the home, and our continuous airflow system, which circulates fresh air throughout each residence which is preheated or precooled by a series of. Underground earth tubes. It's a ski home. You can feel good about owning that's doing everything in its power to protect the snow you love to play on.
The future is here at Electric Pass Lodge. Pure responsible mountain living for your family. With that I would just like to thank all of you for participating in the event today and a huge thank you to our panelists for these excellent presentations, which we hope to share after the event via recording and then also with the slides. With that, I'll turn it over to my boss,
Michael.

Just adding my thanks. It was an excellent program.

He got some of the best people in ULIA on our panel and fantastic information.

So please catch up with the recording if you couldn't catch the whole session and we will see you at one of our live events very soon.

And thank you Maryann for organizing a great program.

Thank you guys, hope you have a great evening and will see you soon.

Yeah,

Thank you.