# 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
**00:01:17 --> 00:01:19:** this quite a bit in the last year.
**00:01:19 --> 00:01:21:** It's become a number one priority.
**00:01:21 --> 00:01:24:** Our guest leader of this program is Doctor Kyra Banks,
**00:01:24 --> 00:01:27:** who is a nationally known expert on Addyi prominent African
**00:01:27 --> 00:01:29:** American scholar as well.
**00:01:29 --> 00:01:32:** So there's still opportunity to sign up for that.
**00:01:32 --> 00:01:34:** I hope you'll be able to do that.
**00:01:34 --> 00:01:38:** It's a virtual in two parts on July 21st and
**00:01:38 --> 00:01:38:** 22nd.
**00:01:38 --> 00:01:41:** Also related to DI, we've been doing book groups on
**00:01:41 --> 00:01:44:** line in virtual for Massive in very successful,
**00:01:44 --> 00:01:48:** very well attended person we did with the color of
**00:01:48 --> 00:01:48:** law.
**00:01:48 --> 00:01:52:** The notable book about the history of zoning and how
**00:01:52 --> 00:01:53:** it's discrimina Tori.
**00:01:53 --> 00:01:57:** Next one is about access to capital for people of
**00:01:57 --> 00:01:57:** color,
**00:01:57 --> 00:02:00:** and there is an opportunity to read to watch a
**00:02:00 --> 00:02:04:** video and to inform yourself before joining that discussion.
**00:02:04 --> 00:02:06:** So that's coming up on August 5th,
**00:02:06 --> 00:02:09:** a combination virtual live event.
**00:02:09 --> 00:02:10:** Is on Thursday, August 19th,
**00:02:10 --> 00:02:14:** it's called Unmasked economic recovery in real estate in Colorado.
**00:02:14 --> 00:02:17:** Will start with a panel in the morning that will
**00:02:17 --> 00:02:20:** cover various the whole state and economic trends in the
**00:02:20 --> 00:02:21:** post pandemic era,
**00:02:21 --> 00:02:25:** including the mountain regions, and that'll be a morning 8:30
**00:02:25 --> 00:02:29:** to 9:30 and then the afternoon there was the option
**00:02:29 --> 00:02:31:** to do a live tour of one of two prominent
**00:02:31 --> 00:02:34:** new projects. When is the 9th and Colorado redevelopment by
**00:02:34 --> 00:02:35:** Continuum Partners?
**00:02:35 --> 00:02:37:** Which is pretty well done.
**00:02:37 --> 00:02:39:** Another is more in progress.
**00:02:39 --> 00:02:41:** 100 acre redevelopment of downtown Westminster,
**00:02:41 --> 00:02:44:** which is a former dying mall re being redone as
**00:02:44 --> 00:02:45:** a high density todds.
**00:02:45 --> 00:02:47:** So hope you'll be able to join that.
**00:02:47 --> 00:02:50:** Both tours will be led by experts who worked on

**00:02:50 --> 00:02:51:** those projects.
**00:02:51 --> 00:02:54:** You'll learn all about them and will follow them up
**00:02:54 --> 00:02:54:** with networking.
**00:02:54 --> 00:02:57:** Happy hour. We're going back to live new member copies,
**00:02:57 --> 00:03:00:** so it's been virtual for the last year and a
**00:03:00 --> 00:03:01:** half.
**00:03:01 --> 00:03:02:** If you're new to you,
**00:03:02 --> 00:03:05:** lie and want to learn what it means to be
**00:03:05 --> 00:03:06:** a member,
**00:03:06 --> 00:03:07:** how it can benefit you,
**00:03:07 --> 00:03:09:** how you can get involved.
**00:03:09 --> 00:03:13:** Personally, you should be attending this my colleague Atlanta pageant
**00:03:13 --> 00:03:16:** is posting links to registering for these events in the
**00:03:16 --> 00:03:19:** chat box as we go along and then super excited
**00:03:19 --> 00:03:22:** about the impact awards. It's our big banquet that we
**00:03:22 --> 00:03:26:** put off for six months and the hope we could
**00:03:26 --> 00:03:28:** do it as a live event and we are.
**00:03:28 --> 00:03:30:** It'll be held on Thursday,
**00:03:30 --> 00:03:33:** September 23rd at the Super Ballroom at the Denver Center
**00:03:33 --> 00:03:34:** for the Performing Arts.
**00:03:34 --> 00:03:36:** We've got 15 fantastic finalists.
**00:03:36 --> 00:03:39:** You can read about him in a blog on our
**00:03:39 --> 00:03:39:** website.
**00:03:39 --> 00:03:43:** Will also be. Published in several real estate publications and
**00:03:43 --> 00:03:46:** really excited that this year's entries were incredibly robust and
**00:03:46 --> 00:03:49:** a lot of them did address the most pressing social
**00:03:49 --> 00:03:52:** and environmental issues that, in addition to being really interesting
**00:03:53 --> 00:03:55:** examples of real estate projects fall meeting this year,
**00:03:55 --> 00:03:58:** is in Chicago, and that will also be a live
**00:03:58 --> 00:04:01:** event will be the first time that you alliance hosted
**00:04:02 --> 00:04:04:** a live national meeting in almost two years.
**00:04:04 --> 00:04:06:** We hope to see you there.
**00:04:06 --> 00:04:09:** You can follow us on our website as well,
**00:04:09 --> 00:04:12:** and if you missed. Any of the virtual events in
**00:04:12 --> 00:04:15:** the last year and a half they are posted for
**00:04:15 --> 00:04:19:** members on the knowledge Finder website and you lie and
**00:04:19 --> 00:04:22:** you can you see the link there in your box.
**00:04:22 --> 00:04:26:** So next slide please. Annual sponsors or how?
**00:04:26 --> 00:04:28:** Mainly how we support ourselves.
**00:04:28 --> 00:04:30:** We do support ourselves in Colorado.

**00:04:30 --> 00:04:32:** We are part of the global organization.
**00:04:32 --> 00:04:34:** We have more than 50 this year.
**00:04:34 --> 00:04:37:** Very grateful for that. We're about to add a new
**00:04:37 --> 00:04:41:** summit level sponsor a Norwood development of Colorado Springs,
**00:04:41 --> 00:04:43:** so we're grateful for their support.
**00:04:43 --> 00:04:46:** And if you'd like to know more about sponsoring an
**00:04:46 --> 00:04:49:** event or becoming an annual sponsor of you like Colorado,
**00:04:49 --> 00:04:52:** please contact me. I want to thank my colleague,
**00:04:52 --> 00:04:55:** my colleague Mary and Epic who took the lead in
**00:04:55 --> 00:04:56:** this program.
**00:04:56 --> 00:04:58:** Our new colleague Madeline Groin and Atlanta Paget,
**00:04:58 --> 00:05:01:** who just do a great job of getting these programs
**00:05:01 --> 00:05:02:** organized for our Members.
**00:05:02 --> 00:05:05:** So I think I'm going to turn it back to
**00:05:05 --> 00:05:07:** Mary Ann and listen along with rescue.
**00:05:07 --> 00:05:10:** Have a fantastic panel today and we look forward to
**00:05:10 --> 00:05:12:** going about their projects and their insights.
**00:05:13 --> 00:05:14:** Thank you so much Michael.
**00:05:14 --> 00:05:17:** Everyone here so excited for the panel.
**00:05:17 --> 00:05:20:** We have lined up for you today and we're starting
**00:05:20 --> 00:05:23:** out with Courtney Anderson with the city and County of
**00:05:23 --> 00:05:26:** Denver who will discuss their new code,
**00:05:26 --> 00:05:29:** regulations coming and building electrification requirements that are related to
**00:05:29 --> 00:05:30:** their climate change goals.
**00:05:30 --> 00:05:32:** We're really excited about that.
**00:05:32 --> 00:05:35:** She'll be followed by Emily Pierce of utilized Green Print
**00:05:35 --> 00:05:38:** Center for building performance and they're going to be talking
**00:05:38 --> 00:05:42:** about lessons learned from their new report on building electrification.
**00:05:42 --> 00:05:46:** And then we're going to hear it from two different
**00:05:46 --> 00:05:46:** case studies.
**00:05:46 --> 00:05:50:** In Colorado, one is going to be spoken about by
**00:05:50 --> 00:05:51:** Elin McCready,
**00:05:51 --> 00:05:54:** of East West Partners. She'll be talking about Electric Pass
**00:05:54 --> 00:05:57:** Lodge in Snowmass and Andy Bush of Morgan Creek Ventures
**00:05:57 --> 00:06:01:** will discuss both new development and retrofits for building electrification
**00:06:01 --> 00:06:03:** and then at the end,
**00:06:03 --> 00:06:06:** we'll have your questions that you put in the chat

**00:06:06 --> 00:06:09:** box moderated by John Berkey of Urban Villages.
**00:06:09 --> 00:06:14:** So with that, let's get started by Courtney.
**00:06:14 --> 00:06:16:** Hi, thank you Maryann UM so
**00:06:16 --> 00:06:20:** I'm just gonna briefly walk us through some of these
**00:06:20 --> 00:06:24:** pieces today so the first one being the net zero
**00:06:24 --> 00:06:25:** energy plan.
**00:06:25 --> 00:06:29:** The code adoption process and electrification within the city and
**00:06:29 --> 00:06:30:** County of Denver.
**00:06:36 --> 00:06:39:** So to put it in context,
**00:06:39 --> 00:06:42:** Denver Denver's greenhouse gas emissions are 64%
**00:06:42 --> 00:06:44:** come from homes and buildings,
**00:06:44 --> 00:06:47:** so 15% of that is from homes and then the
**00:06:47 --> 00:06:51:** 49 percent is from multifamily commercial industrial.
**00:06:51 --> 00:06:54:** So just it really helps to kind of get in
**00:06:54 --> 00:06:59:** context what we're talking about and what our work does
**00:06:59 --> 00:07:01:** and what are the facts.
**00:07:04 --> 00:07:09:** So our goal for new construction is to beat that
**00:07:09 --> 00:07:10:** zero energy by 2030,
**00:07:10 --> 00:07:13:** and that's because by 20 fifty 40%
**00:07:13 --> 00:07:17:** of our building stock will be new construction.
**00:07:22 --> 00:07:24:** And taking all of that into consideration,
**00:07:24 --> 00:07:27:** we developed with a net zero energy implementation plan.
**00:07:28 --> 00:07:32:** So I'll step through some some pieces of that.
**00:07:32 --> 00:07:36:** The definition for net zero in Denver is a new
**00:07:36 --> 00:07:40:** building or home that is highly energy efficient,
**00:07:40 --> 00:07:44:** fully powered from on site or and or offsite renewable
**00:07:44 --> 00:07:44:** energy.
**00:07:44 --> 00:07:48:** And there's four foundation so that the first one being
**00:07:48 --> 00:07:51:** having a highly energy efficient building.
**00:07:51 --> 00:07:53:** Second one is all electric,
**00:07:53 --> 00:07:57:** so no gas third is powered by renewable energy and
**00:07:57 --> 00:08:01:** electricity and the 4th one is being providers.
**00:08:01 --> 00:08:03:** Captain man flexibility for the grid.
**00:08:03 --> 00:08:06:** So all four of those make up the definition for.
**00:08:06 --> 00:08:08:** Net zero Energy and Denver.
**00:08:11 --> 00:08:15:** The principles we use to develop the net zero energy
**00:08:15 --> 00:08:19:** plan is we made sure there were looking at incentives
**00:08:19 --> 00:08:24:** to equitably support construction and that we're achieving net zero
**00:08:24 --> 00:08:28:** energy as a whole community because we know it might
**00:08:28 --> 00:08:32:** be unfair to ask them buildings to all due meds.
**00:08:32 --> 00:08:37:** 0 So we're looking at it from a community perspective.

**00:08:37 --> 00:08:39:** Similar item, you know, different solutions.
**00:08:39 --> 00:08:42:** So different building types, every building is different,
**00:08:42 --> 00:08:46:** so uhm, how does how does each building get as
**00:08:46 --> 00:08:47:** far as they can?
**00:08:47 --> 00:08:52:** And I'm using stakeholders and their expertise to advise us
**00:08:52 --> 00:08:54:** as we go through this process.
**00:08:57 --> 00:09:00:** The support for net zero energy,
**00:09:00 --> 00:09:04:** UM, definitely include resources and staff within the City of
**00:09:04 --> 00:09:05:** Denver,
**00:09:05 --> 00:09:07:** but also for community support.
**00:09:07 --> 00:09:11:** You know, including marketing, training incentives and financing educations,
**00:09:11 --> 00:09:16:** huge programs, advocacy so that you know there's a lot
**00:09:16 --> 00:09:20:** to get to that step of supporting the community and
**00:09:20 --> 00:09:25:** and having Denver being able to support what they need.
**00:09:28 --> 00:09:30:** Uhm, so as I mentioned,
**00:09:30 --> 00:09:33:** this is the net zero energy newbuildings implementation plan,
**00:09:33 --> 00:09:35:** so you can find that on our website and it's
**00:09:36 --> 00:09:38:** it's a fairly lengthy document,
**00:09:38 --> 00:09:41:** but there's a lot of good items in there and
**00:09:41 --> 00:09:44:** so it was in collaboration with come.
**00:09:44 --> 00:09:47:** Kassirer, which is the office I work for so climb
**00:09:47 --> 00:09:48:** in action,
**00:09:48 --> 00:09:52:** sustainability and resiliency and CPD which is community planning and
**00:09:52 --> 00:09:55:** development and it's a plan for getting new buildings and
**00:09:55 --> 00:09:58:** homes to net zero by building type and looking at
**00:09:58 --> 00:10:02:** each code cycle to determine those appropriate targets to get
**00:10:02 --> 00:10:05:** there and then also looking at the cost of net,
**00:10:05 --> 00:10:07:** zero energy and all electric.
**00:10:10 --> 00:10:14:** It's really helpful to see you know where where we're
**00:10:14 --> 00:10:14:** at,
**00:10:14 --> 00:10:17:** so you can see the Denver Energy Code in Denver
**00:10:18 --> 00:10:18:** Green Code,
**00:10:18 --> 00:10:22:** and then that green dashed line for both commercial.
**00:10:22 --> 00:10:25:** I'm also family in residential to see where we need
**00:10:25 --> 00:10:28:** to go and those steps we need to take to
**00:10:29 --> 00:10:29:** get there,
**00:10:29 --> 00:10:35:** pretty. Pretty steep. Thanks also we need to break that
**00:10:35 --> 00:10:38:** out between our code cycles.
**00:10:38 --> 00:10:42:** And that's what brings me into the 2021 code adoption
**00:10:42 --> 00:10:44:** process that I'll just touch on.

**00:10:44 --> 00:10:47:** So we're currently, UM, working through that.
**00:10:47 --> 00:10:51:** Right now we just completed our code working groups in
**00:10:51 --> 00:10:52:** June,
**00:10:52 --> 00:10:55:** and those were a series of six meetings,
**00:10:55 --> 00:10:58:** a focus around energy efficiency and sustainability.
**00:10:58 --> 00:11:02:** So they were meetings to bring concepts and ideas to
**00:11:02 --> 00:11:04:** the table from community members,
**00:11:04 --> 00:11:10:** stakeholders, subject matter experts to really help define what the
**00:11:10 --> 00:11:11:** vision for Denver is.
**00:11:11 --> 00:11:13:** Currently we're accepting public proposal.
**00:11:13 --> 00:11:17:** Also, if you have a really good idea that you
**00:11:17 --> 00:11:18:** wanted to submit,
**00:11:18 --> 00:11:22:** we're extremely happy to review that and bring it to
**00:11:22 --> 00:11:25:** the code committees and then the code committees will be
**00:11:26 --> 00:11:27:** starting in January 2020,
**00:11:27 --> 00:11:31:** so anyone can apply to Unicode Committee as well,
**00:11:31 --> 00:11:35:** and those will review the concepts that were helping out
**00:11:35 --> 00:11:40:** a formal proposals as well as the public proposals that
**00:11:40 --> 00:11:41:** will be submitted.
**00:11:41 --> 00:11:45:** So this is kind of that typical timeline of,
**00:11:45 --> 00:11:47:** UM, what the code adoption process is.
**00:11:47 --> 00:11:51:** So as I mentioned, you know we're we are developing
**00:11:51 --> 00:11:53:** public proposals right now,
**00:11:53 --> 00:11:57:** or I'm sorry. Developing proposals from the working group idea
**00:11:57 --> 00:12:02:** is right now we're also collecting those public proposal amendments
**00:12:02 --> 00:12:04:** from July 23rd to that deadline.
**00:12:04 --> 00:12:08:** So next Friday, and then those go to the Technical
**00:12:08 --> 00:12:12:** Advisory Committee and anything that proceeds forward from the.
**00:12:12 --> 00:12:17:** The committees will then go forward to City Council.
**00:12:17 --> 00:12:20:** But, uh. And this is the same for,
**00:12:20 --> 00:12:22:** UM, all the I codes as well as the Denver
**00:12:22 --> 00:12:23:** for income.
**00:12:26 --> 00:12:29:** So this is, uhm, you know,
**00:12:29 --> 00:12:33:** a pretty pretty dense chart of the different code cycle.
**00:12:33 --> 00:12:37:** So the code cycles every three years.
**00:12:37 --> 00:12:39:** So you can see that across the top and then
**00:12:40 --> 00:12:44:** it's broken down by highly energy efficient electric renewable energy
**00:12:44 --> 00:12:46:** and grid grid flexibility.

**00:12:46 --> 00:12:49:** And those are the the four pillars for net zero
**00:12:49 --> 00:12:51:** energy and and Denver,
**00:12:51 --> 00:12:56:** so you can see the targets for this Commercial Code
**00:12:56 --> 00:12:58:** timeline as well as.
**00:12:58 --> 00:13:02:** The residential code timeline, so these are from the implementation
**00:13:02 --> 00:13:02:** plan,
**00:13:02 --> 00:13:05:** and that plan is is that it's a plan.
**00:13:05 --> 00:13:09:** So now we're going through the code adoption process with
**00:13:09 --> 00:13:13:** these targets in mind and developing proposals to meet those
**00:13:13 --> 00:13:14:** those targets.
**00:13:14 --> 00:13:17:** So if you know you can see in here,
**00:13:17 --> 00:13:21:** for example 2024, we're targeting that all electric for residential,
**00:13:21 --> 00:13:24:** so all abstract equipment. And this can be found in
**00:13:25 --> 00:13:27:** that cereal energy implementation plan.
**00:13:27 --> 00:13:29:** A few words like to look a little further.
**00:13:32 --> 00:13:35:** So I'll touch again on the renewable heating and cooling
**00:13:35 --> 00:13:35:** plan.
**00:13:35 --> 00:13:38:** It just came out in June of this year and
**00:13:38 --> 00:13:41:** it's four existing building things,
**00:13:41 --> 00:13:43:** so it's electrification for existing buildings,
**00:13:43 --> 00:13:47:** and I'll I'll go through some some peas here.
**00:13:47 --> 00:13:51:** So gas, uhm, it's helpful to see what where gas
**00:13:51 --> 00:13:52:** is actually utilized.
**00:13:52 --> 00:13:55:** You know, space heating accounts for 67%
**00:13:55 --> 00:13:58:** water heating 30. I'm cooking clothes,
**00:13:58 --> 00:14:06:** drying is only 3%. So electrification has high impact climate
**00:14:06 --> 00:14:07:** benefits,
**00:14:07 --> 00:14:12:** so methane, which is the main component in natural gas,
**00:14:12 --> 00:14:16:** causes 80 times the amount of climate change as standard
**00:14:16 --> 00:14:18:** carbon dioxide emissions does.
**00:14:18 --> 00:14:22:** So it's a group grade is moving to 100%
**00:14:22 --> 00:14:26:** renewable power. Electric heating and cooling is that path to
**00:14:26 --> 00:14:31:** reduce the emissions generated by buildings and homes.
**00:14:31 --> 00:14:34:** And the Denver target is to be 80%
**00:14:34 --> 00:14:36:** renewal on renewable grid by 2030,
**00:14:36 --> 00:14:38:** so that kind of, you know,
**00:14:38 --> 00:14:42:** it helps us put into perspective why it's so important
**00:14:42 --> 00:14:46:** to go electric because the grid is also going to
**00:14:46 --> 00:14:47:** be targeting renewable.
**00:14:50 --> 00:14:54:** Heat pumps are certainly a great way to get there,

**00:14:54 --> 00:14:58:** so he comes move heat instead of creating it.
**00:14:58 --> 00:15:00:** So there are 2200 to 300%
**00:15:00 --> 00:15:05:** efficient and. To kind of help understand why that seems
**00:15:05 --> 00:15:06:** almost magical,
**00:15:06 --> 00:15:09:** 100% efficiency is based on a source creating heat,
**00:15:09 --> 00:15:11:** so heat pumps are moving heat,
**00:15:11 --> 00:15:15:** not necessarily creating it, which is why they're so efficient.
**00:15:18 --> 00:15:22:** Uh, he uh going out electric two promotes equity,
**00:15:22 --> 00:15:24:** so especially for AC, UM,
**00:15:24 --> 00:15:27:** for homes that don't have it today,
**00:15:27 --> 00:15:31:** so about 30% of Denver homes do not have air
**00:15:31 --> 00:15:32:** conditioning,
**00:15:32 --> 00:15:35:** which is really critical as temperatures are rising.
**00:15:38 --> 00:15:40:** Can improve equity and safety,
**00:15:40 --> 00:15:44:** so electrification, certainly. That is one of our main main
**00:15:44 --> 00:15:44:** factors.
**00:15:44 --> 00:15:46:** Uhm, you know. Like 30%
**00:15:46 --> 00:15:50:** of low income homes in Denver today the gas equipment
**00:15:50 --> 00:15:51:** fails.
**00:15:51 --> 00:15:55:** The carbon monoxide test. And that's comparing to the market
**00:15:55 --> 00:15:57:** rate homes that only 5%
**00:15:57 --> 00:16:00:** do so, making sure we improve that safety in all
**00:16:00 --> 00:16:01:** columns.
**00:16:05 --> 00:16:08:** There is electrification. It has lower exposure to indoor air
**00:16:08 --> 00:16:09:** pollutants,
**00:16:09 --> 00:16:12:** so residents of homes with gas have nearly three times
**00:16:12 --> 00:16:15:** the rate of asthma compared to the ones with all
**00:16:15 --> 00:16:16:** electric homes.
**00:16:20 --> 00:16:24:** Other better outcomes based on everything that we just went
**00:16:24 --> 00:16:24:** through,
**00:16:24 --> 00:16:28:** but they have the same or similar cost,
**00:16:28 --> 00:16:31:** so especially for this this portion here we're talking about
**00:16:31 --> 00:16:32:** existing buildings,
**00:16:32 --> 00:16:36:** so we wouldn't recommend someone to take their new gas
**00:16:36 --> 00:16:36:** furnace.
**00:16:36 --> 00:16:40:** I got yesterday and go replace it today with electric.
**00:16:40 --> 00:16:43:** We're looking at when that life cycle of the the
**00:16:44 --> 00:16:44:** furnace,
**00:16:44 --> 00:16:46:** the hot water, he your end.
**00:16:46 --> 00:16:49:** So when that ends most buildings.
**00:16:49 --> 00:16:52:** At homes can replace it with electric clip equivalent at

**00:16:52 --> 00:16:55:** a similar cost as they would pay for that new
**00:16:55 --> 00:16:56:** gas system.
**00:17:00 --> 00:17:05:** It increases credit utilization. Umso Denver SIS electric system already
**00:17:06 --> 00:17:10:** built for the summer loan for the air conditioning,
**00:17:10 --> 00:17:14:** so winter heating needs can shift to renewable electricity without
**00:17:14 --> 00:17:16:** significant infrastructure buildout.
**00:17:20 --> 00:17:24:** And this is all within the Danvers of renewable heating
**00:17:24 --> 00:17:25:** and cooling plan.
**00:17:25 --> 00:17:28:** Again, that was published last month,
**00:17:28 --> 00:17:32:** so that's online or on site and it goes through
**00:17:32 --> 00:17:34:** how we engage the community.
**00:17:34 --> 00:17:36:** Why look at renewable heating?
**00:17:36 --> 00:17:39:** Cooling the electric grid? Those major.
**00:17:39 --> 00:17:41:** There's major plans for the parts?
**00:17:41 --> 00:17:45:** Are there plans for the major heating technologies so it
**00:17:45 --> 00:17:49:** breaks down your your typical systems and what those approaches
**00:17:49 --> 00:17:51:** are for electrification?
**00:17:51 --> 00:17:54:** And also goes through the implementation strategy.
**00:17:56 --> 00:18:00:** So the energized Denver task Force is taking what we've
**00:18:00 --> 00:18:04:** learned from the renewable heating cooling plan and helping the
**00:18:04 --> 00:18:09:** city design a building performance policy for existing buildings,
**00:18:09 --> 00:18:11:** and that will improve health inequity,
**00:18:11 --> 00:18:14:** create jobs, and drive climate solutions.
**00:18:14 --> 00:18:18:** To achieve net zero energy in existing buildings by 2040.
**00:18:21 --> 00:18:24:** So this is the road map for the energize Denver
**00:18:24 --> 00:18:24:** task force.
**00:18:24 --> 00:18:27:** UM, the green in the meeting six and seven.
**00:18:27 --> 00:18:29:** It's where we're at right now,
**00:18:29 --> 00:18:32:** and they're actually currently in their meeting 7 right now,
**00:18:32 --> 00:18:35:** so they're getting close to.
**00:18:35 --> 00:18:39:** Having recommendations that will move forward to to City Council
**00:18:39 --> 00:18:40:** shortly.
**00:18:43 --> 00:18:52:** That's it, thank you. Thank you,
**00:18:52 --> 00:18:53:** Courtney. Not
**00:18:53 --> 00:18:56:** with that. We're going to introduce our next speaker,
**00:18:56 --> 00:18:59:** Emily Pierce. Hi Emily, thanks Mary
**00:18:59 --> 00:19:05:** Anne thank you everybody. Me.

**00:19:05 --> 00:19:08:** So, uh, my name is Emily Pearson,
**00:19:08 --> 00:19:11:** director on utilise Greenprint Center for building performance,
**00:19:11 --> 00:19:14:** and I don't know how many of you all are
**00:19:14 --> 00:19:17:** familiar with green print.
**00:19:19 --> 00:19:21:** I don't know how many of you all are,
**00:19:21 --> 00:19:21:** I am.
**00:19:24 --> 00:19:27:** Oh geez, I had to do some zoom controls.
**00:19:27 --> 00:19:27:** Go
**00:19:27 --> 00:19:30:** ahead, Emily. Thank you so I don't know how many
**00:19:30 --> 00:19:34:** of you guys are familiar with utilized greenprint center.
**00:19:34 --> 00:19:36:** But Greenprint lives at UI headquarters.
**00:19:36 --> 00:19:39:** I am based in Washington DC name actually sitting here
**00:19:39 --> 00:19:42:** in my in in my house outside of Washington DC.
**00:19:42 --> 00:19:46:** Actually looking at a heat pump at my house so
**00:19:46 --> 00:19:50:** I appreciate Courtney kind of teeing up all of that.
**00:19:50 --> 00:19:53:** And green print is one of the three arms of
**00:19:53 --> 00:19:56:** sustainability work at US headquarters.
**00:19:56 --> 00:20:00:** So the other teams are the Urban resilience team and
**00:20:00 --> 00:20:02:** are building healthy places.
**00:20:02 --> 00:20:06:** Team, but GREENPRINT specifically is focused on carbon emissions reduction.
**00:20:06 --> 00:20:08:** So decarbonization reducing carbon emissions,
**00:20:08 --> 00:20:11:** energy efficiency. All of that good stuff.
**00:20:11 --> 00:20:15:** And we do that through a cohort of about 45
**00:20:15 --> 00:20:15:** members,
**00:20:15 --> 00:20:20:** company members, owners, investors, real estate owners and investors who.
**00:20:20 --> 00:20:24:** Collectively commit to a couple goals and we we help
**00:20:24 --> 00:20:27:** them strive that way and push that way on their
**00:20:27 --> 00:20:29:** ESG and sustainability journey.
**00:20:29 --> 00:20:31:** And so those goals are 50%
**00:20:31 --> 00:20:35:** carbon emissions by 2030 carbon emissions reduction by 2030.
**00:20:35 --> 00:20:39:** And then we actually just added last year in honor
**00:20:39 --> 00:20:42:** of not only a 10 year anniversary for Green prank,
**00:20:42 --> 00:20:44:** Rembrandt was founded in 2009,
**00:20:44 --> 00:20:48:** but also with an acknowledgement that this is really where
**00:20:48 --> 00:20:50:** the market and the industry and.
**00:20:50 --> 00:20:52:** The country in the world are headed,
**00:20:52 --> 00:20:55:** and that's net zero carbon operations by 2050,
**00:20:55 --> 00:20:58:** and so you know, we've heard from Courtney about net
**00:20:58 --> 00:20:58:** zero,
**00:20:58 --> 00:21:01:** and you know, bringing that down home to Denver and

**00:21:01 --> 00:21:03:** we really wanted this this second goal,
**00:21:03 --> 00:21:06:** this this collective push to be an acknowledgement that you
**00:21:06 --> 00:21:07:** know this is this,
**00:21:07 --> 00:21:10:** is really where the industry is headed.
**00:21:10 --> 00:21:14:** So this is just a quick snapshot of who green
**00:21:14 --> 00:21:15:** part numbers are.
**00:21:15 --> 00:21:17:** I wouldn't spend too much time here,
**00:21:17 --> 00:21:20:** but what I really want you to take away is
**00:21:20 --> 00:21:24:** just that greenprint spans a lot of different countries.
**00:21:24 --> 00:21:26:** A lot of different asset types,
**00:21:26 --> 00:21:28:** geographic regions, sizes, portfolio types,
**00:21:28 --> 00:21:31:** really, you name it, and these you know.
**00:21:31 --> 00:21:34:** 4045 Plus real estate owners and investors have all committed
**00:21:34 --> 00:21:38:** and made that acknowledgement that they are pushing ahead on
**00:21:38 --> 00:21:39:** not only carbon emissions,
**00:21:39 --> 00:21:41:** but now increasingly. At zero as well.
**00:21:44 --> 00:21:47:** So what I'm here to talk to you today about
**00:21:47 --> 00:21:53:** is is this whole electrification or electrifying commercial real estate
**00:21:53 --> 00:21:54:** writ large?
**00:21:54 --> 00:21:58:** So we just put out a recent report on exactly
**00:21:58 --> 00:21:59:** that.
**00:21:59 --> 00:22:03:** It's actually called electrify. And and it really dives into
**00:22:03 --> 00:22:03:** 101,
**00:22:03 --> 00:22:07:** maybe 201 of electrifying commercial real estate,
**00:22:07 --> 00:22:10:** so this is. Not necessarily a new topic.
**00:22:10 --> 00:22:13:** I mean, the electric technology is for a lot of
**00:22:13 --> 00:22:17:** these building equipments and you know machinery have been around
**00:22:17 --> 00:22:20:** for some time and but as far as scaling it
**00:22:20 --> 00:22:23:** as far as cities making it a priority as far
**00:22:23 --> 00:22:26:** as commercial real estate owners pushing it out to their
**00:22:26 --> 00:22:27:** portfolio.
**00:22:27 --> 00:22:30:** That's what's the new part and understanding how this how
**00:22:30 --> 00:22:32:** this fits into the bigger perspective.
**00:22:32 --> 00:22:35:** I think Michael had a Greek Greek quote and I'm
**00:22:35 --> 00:22:39:** totally going to steal this next time I'm talking about.
**00:22:39 --> 00:22:42:** This topic about reading the tea leaves on on what's
**00:22:42 --> 00:22:44:** coming and and it's so true because,
**00:22:44 --> 00:22:47:** you know, electrification in and of itself is not new,
**00:22:47 --> 00:22:49:** and but what it means for real estate is something

**00:22:49 --> 00:22:52:** that for many companies and for many stakeholders,
**00:22:52 --> 00:22:54:** you know whether or not in a designer or architect
**00:22:54 --> 00:22:55:** engineer,
**00:22:55 --> 00:22:59:** that's what's new. So what this looks like for us
**00:22:59 --> 00:23:00:** is it was,
**00:23:00 --> 00:23:03:** you know, about a year or so long of research,
**00:23:03 --> 00:23:05:** analysis and interviews with stakeholders.
**00:23:05 --> 00:23:08:** All that good stuff. We boiled this down into really
**00:23:08 --> 00:23:12:** four points for what the business case for electrifying commercial
**00:23:12 --> 00:23:13:** real estate are.
**00:23:13 --> 00:23:14:** So so out of those records,
**00:23:14 --> 00:23:17:** we've got financial benefits. We've got impending regulations,
**00:23:17 --> 00:23:18:** technical benefits, and environmental benefits.
**00:23:18 --> 00:23:22:** And I could probably take the remaining hours so that
**00:23:22 --> 00:23:24:** we have here left on this event to really dive
**00:23:24 --> 00:23:26:** into every single one of these.
**00:23:26 --> 00:23:28:** But I'm not going to do that,
**00:23:28 --> 00:23:31:** and I I wouldn't do that to my fellow speakers
**00:23:31 --> 00:23:34:** or attendees to have to listen to that.
**00:23:34 --> 00:23:36:** So if you really want to dive into any of
**00:23:37 --> 00:23:38:** these Pacific bullets,
**00:23:38 --> 00:23:41:** I definitely encourage you to read the full report and
**00:23:41 --> 00:23:42:** you know it's an.
**00:23:42 --> 00:23:44:** It's an in depth report,
**00:23:44 --> 00:23:46:** but it's not meant to be super wonky.
**00:23:46 --> 00:23:50:** Super, super confusing. We meant it to be an introduction
**00:23:50 --> 00:23:53:** to the topic and but but while I'm on this
**00:23:53 --> 00:23:56:** item to give you a snapshot of of these pieces.
**00:23:56 --> 00:23:58:** And a few things I want to call out.
**00:23:58 --> 00:24:02:** So when you're looking at the financial benefits side.
**00:24:02 --> 00:24:05:** You know it right now that I guess the elephant
**00:24:05 --> 00:24:09:** in the room is that some electric technology and some
**00:24:09 --> 00:24:10:** electric you know,
**00:24:10 --> 00:24:14:** retrofits and construction are going to have a higher upfront
**00:24:14 --> 00:24:15:** premium.
**00:24:15 --> 00:24:17:** It's not necessarily a given.
**00:24:17 --> 00:24:21:** That's not, you know. When all is said and done,
**00:24:21 --> 00:24:23:** that that's what it is.
**00:24:23 --> 00:24:26:** But you know, in many cases there is a premium
**00:24:26 --> 00:24:28:** and what I will say is there there's been a

**00:24:28 --> 00:24:32:** number of studies done and one particularly out of Colorado
**00:24:32 --> 00:24:35:** is it was based out of Colorado study and it
**00:24:35 --> 00:24:38:** looked at the cost of replacing or retrofitting a piece
**00:24:38 --> 00:24:41:** of equipment at the end of its useful life.
**00:24:41 --> 00:24:43:** So taking a fossil fuel?
**00:24:43 --> 00:24:46:** A piece of equipment and at the end of its
**00:24:46 --> 00:24:46:** life,
**00:24:46 --> 00:24:49:** replacing it with an electric alternative and what they found
**00:24:49 --> 00:24:51:** was there was actually only a 2%
**00:24:51 --> 00:24:54:** premium to do that versus swapping it out for,
**00:24:54 --> 00:24:55:** you know their fossil fuel.
**00:24:55 --> 00:24:59:** So while there may still be some level of premium.
**00:24:59 --> 00:25:01:** And at the end of the day,
**00:25:01 --> 00:25:05:** it's it's not huge and it's getting smaller and smaller
**00:25:05 --> 00:25:06:** as the technology grows.
**00:25:06 --> 00:25:09:** So the other thing on the financial benefits side too,
**00:25:09 --> 00:25:12:** is that you have to look at this as an
**00:25:12 --> 00:25:15:** aggregate and as a long term so you know you've
**00:25:15 --> 00:25:18:** got the premium for the upfront that you may have
**00:25:18 --> 00:25:21:** to overcome. But when you look at it over over
**00:25:21 --> 00:25:24:** the long term and over the operational life of a
**00:25:24 --> 00:25:24:** building,
**00:25:24 --> 00:25:28:** the cost there are going to be significant for you
**00:25:28 --> 00:25:30:** as a building owner and investor.
**00:25:30 --> 00:25:33:** Gas infrastructure is fluid and I no pun intended,
**00:25:33 --> 00:25:37:** uh, you know it. Gas utilities prices are fluctuating.
**00:25:37 --> 00:25:40:** That's a very unknown territory right now.
**00:25:40 --> 00:25:43:** And when you think of the unknowns there,
**00:25:43 --> 00:25:47:** you have a much different scenario that you're looking at
**00:25:47 --> 00:25:51:** when you're looking at the longer term operating expenses and
**00:25:52 --> 00:25:54:** costs of an electric folding.
**00:25:54 --> 00:25:56:** I'm on the regulation side so you know this is
**00:25:56 --> 00:25:59:** obviously Denver focused as specific conversation,
**00:25:59 --> 00:26:02:** and Courtney is obviously done a great job of teeing
**00:26:02 --> 00:26:03:** up all of that.
**00:26:03 --> 00:26:06:** So I'm not gonna spend a whole ton of time
**00:26:06 --> 00:26:07:** here.
**00:26:07 --> 00:26:10:** But you know, I would definitely encourage anybody who's on
**00:26:10 --> 00:26:12:** the line who has either clients.
**00:26:12 --> 00:26:13:** If you're, you know, architect,
**00:26:13 --> 00:26:15:** designer, you know something on that level,

**00:26:15 --> 00:26:18:** or if you're an owner or investor and you have
**00:26:18 --> 00:26:21:** a portfolio in a lot of cities in California.
**00:26:21 --> 00:26:23:** Increasingly in New England, these regulations.
**00:26:23 --> 00:26:25:** Whether they be gas bands,
**00:26:25 --> 00:26:27:** whether they be carbon emissions reductions,
**00:26:27 --> 00:26:29:** you know, however, a city or state is is structuring
**00:26:29 --> 00:26:30:** them.
**00:26:30 --> 00:26:31:** They're coming. They're already here,
**00:26:31 --> 00:26:33:** and they're definitely not going away.
**00:26:33 --> 00:26:36:** And while there are some cities that are kind of
**00:26:36 --> 00:26:37:** pushing against them,
**00:26:37 --> 00:26:39:** these regulations are are not going anywhere,
**00:26:39 --> 00:26:41:** and so you know matter if you sit on a
**00:26:42 --> 00:26:45:** design side or if you sit on an owner side,
**00:26:45 --> 00:26:47:** it's in your best interest to be factoring that in
**00:26:48 --> 00:26:50:** and analyzing that and how is this going to affect
**00:26:50 --> 00:26:51:** my bottom line,
**00:26:51 --> 00:26:54:** both now and down the line now?
**00:26:54 --> 00:26:58:** Versus having this debate and discussion internally when it's too
**00:26:58 --> 00:26:58:** late,
**00:26:58 --> 00:27:02:** frankly. Uh, so moving on to the technical side,
**00:27:02 --> 00:27:07:** the technical side of electric equipment versus fossil fuel equipment
**00:27:07 --> 00:27:08:** can get super wonky.
**00:27:08 --> 00:27:12:** Super detailed, so I I won't dive two too deeply
**00:27:12 --> 00:27:13:** into that.
**00:27:13 --> 00:27:15:** But one thing I do want to call out and
**00:27:16 --> 00:27:19:** this kind of segues into that last bullet here with
**00:27:19 --> 00:27:24:** the environmental benefits nicely is that it's been proven most
**00:27:24 --> 00:27:28:** recently by by NBI, the new Buildings Institute that,
**00:27:28 --> 00:27:31:** per unit of energy. Energy or per unit of energy
**00:27:31 --> 00:27:34:** energy produced by electricity versus fossil fuels is the more
**00:27:34 --> 00:27:35:** efficient choice.
**00:27:35 --> 00:27:38:** So not only do you have the technology options that
**00:27:38 --> 00:27:39:** are increasing,
**00:27:39 --> 00:27:42:** so you know I mentioned the heat pump that's sitting
**00:27:43 --> 00:27:44:** in the corner of my room here.
**00:27:44 --> 00:27:47:** I mean, that's not an option that necessarily would have
**00:27:47 --> 00:27:48:** been available.
**00:27:48 --> 00:27:51:** You know, in years past you have the technology that's
**00:27:51 --> 00:27:52:** improving.

**00:27:52 --> 00:27:54:** You had costs as supply and demand.
**00:27:54 --> 00:27:56:** Does you have the costs coming down?
**00:27:56 --> 00:27:59:** But you also have the more efficient option when you're
**00:27:59 --> 00:28:00:** looking at.
**00:28:00 --> 00:28:04:** Electric buildings versus fossil fuel combustion and this kind of
**00:28:05 --> 00:28:09:** segues into my last point here about the environmental benefits.
**00:28:09 --> 00:28:11:** Frequently when you hear this conversation,
**00:28:11 --> 00:28:13:** or when you think about this,
**00:28:13 --> 00:28:16:** you might think about pure energy efficiency sustainability,
**00:28:16 --> 00:28:19:** that sort of type of debate and conversation.
**00:28:19 --> 00:28:23:** And there are huge and tremendous benefits on that level.
**00:28:23 --> 00:28:26:** But something to that I want to highlight,
**00:28:26 --> 00:28:28:** and especially in the last 18 months,
**00:28:28 --> 00:28:30:** is the health and Wellness conversation.
**00:28:30 --> 00:28:34:** When you're thinking of fossil fuel combustion equipment is tremendous,
**00:28:34 --> 00:28:37:** this can be as simple as a gas stove in
**00:28:37 --> 00:28:40:** your apartment or in your.
**00:28:40 --> 00:28:43:** Home or all the way up to commercial level?
**00:28:43 --> 00:28:48:** You know, commercial scale kitchens where you have multiple gas
**00:28:48 --> 00:28:51:** stoves and commercial chefs who are having having to.
**00:28:51 --> 00:28:55:** You know, juggle all of this.
**00:28:55 --> 00:28:59:** The studies are increasingly showing that having those appliances or
**00:28:59 --> 00:29:00:** pieces of equipment,
**00:29:00 --> 00:29:05:** so the gas stoves or or what have you.
**00:29:05 --> 00:29:08:** Actually have a detriment on your help and there's plenty
**00:29:08 --> 00:29:11:** of anecdotal examples that I've I've heard from.
**00:29:11 --> 00:29:13:** You know, various GREENPRINT members and others,
**00:29:13 --> 00:29:16:** but there's also some very real statistics out there that
**00:29:16 --> 00:29:20:** they've done citywide analysis and shown that the incidence of
**00:29:20 --> 00:29:23:** asthma in those cities and areas that they have higher
**00:29:23 --> 00:29:26:** levels of fossil fuel combustion are higher.
**00:29:26 --> 00:29:29:** So there's a very real health and Wellness consideration that
**00:29:29 --> 00:29:32:** that needs to be factored in on top of the
**00:29:32 --> 00:29:35:** efficiency and environmental benefits of the.
**00:29:35 --> 00:29:38:** Decarbonizing your building writ large.
**00:29:38 --> 00:29:41:** And one last point, before I go on here to
**00:29:41 --> 00:29:43:** my next slide I I wanna make two,

**00:29:43 --> 00:29:46:** you know, Courtney tied up the net zero conversation and
**00:29:46 --> 00:29:48:** you know my my fellow speakers gonna be talking a
**00:29:48 --> 00:29:50:** lot about that as well.
**00:29:50 --> 00:29:52:** But you know one thing I wanna make really,
**00:29:52 --> 00:29:55:** really clear too is that if you're having a net
**00:29:55 --> 00:29:59:** zero conversation and you haven't already had the electric conversation,
**00:29:59 --> 00:30:02:** you haven't already had a conversation about electrifying your asset.
**00:30:02 --> 00:30:04:** Whether or not you're in Denver,
**00:30:04 --> 00:30:07:** or whether or not you're in a different city where
**00:30:07 --> 00:30:09:** they don't have any sort of,
**00:30:09 --> 00:30:12:** you know regulations electric needs to come first before the
**00:30:12 --> 00:30:13:** net zero conversation.
**00:30:13 --> 00:30:16:** Net zero I think, is getting a you know a
**00:30:16 --> 00:30:16:** sexy,
**00:30:16 --> 00:30:20:** attractive conversation appeal in the sustainability space as it absolutely
**00:30:20 --> 00:30:20:** should.
**00:30:20 --> 00:30:22:** It's very difficult. It's very terrifying,
**00:30:22 --> 00:30:24:** but it's kind of the new concept,
**00:30:24 --> 00:30:27:** but electrification and energy efficiency or the the pillars and
**00:30:27 --> 00:30:29:** the building blocks of that conversation,
**00:30:29 --> 00:30:32:** that we have to be talking about now versus versus
**00:30:32 --> 00:30:33:** later,
**00:30:33 --> 00:30:36:** when it's too late. So just a couple more slides
**00:30:37 --> 00:30:40:** here for me and what I'm gonna what I'm gonna
**00:30:40 --> 00:30:41:** breakdown for.
**00:30:41 --> 00:30:44:** You guys are both the challenges and then some of
**00:30:44 --> 00:30:45:** the successes.
**00:30:45 --> 00:30:50:** Some of the ways to overcome those challenges on electrification
**00:30:50 --> 00:30:50:** writ large.
**00:30:50 --> 00:30:54:** So the challenges that I have listed here are by
**00:30:54 --> 00:30:58:** and large only retrofit concerns when you think of new
**00:30:58 --> 00:30:59:** construction,
**00:30:59 --> 00:31:02:** new construction, electrifying a new construction is easy.
**00:31:02 --> 00:31:06:** I'm obviously using air quotes because everything is relative,
**00:31:06 --> 00:31:10:** but electrifying a piece of new construction and asset that
**00:31:10 --> 00:31:12:** you're building from the ground up.
**00:31:12 --> 00:31:16:** The technology is there. The costs have by and large
**00:31:16 --> 00:31:17:** come down,
**00:31:17 --> 00:31:21:** you know, new construction? Electrification is is not.

**00:31:21 --> 00:31:23:** Where we need to focus the bulk of our how
**00:31:23 --> 00:31:25:** do we overcome these barriers?
**00:31:25 --> 00:31:28:** So a lot of these are specifically aimed at retrofits
**00:31:28 --> 00:31:31:** and you know Andy Andy has a lot of anti
**00:31:31 --> 00:31:34:** Bush has a lot of experience with with retrofitting and
**00:31:34 --> 00:31:36:** you know very high energy,
**00:31:36 --> 00:31:38:** energy efficient buildings and so I won't.
**00:31:38 --> 00:31:40:** I won't steal his Thunder too much,
**00:31:40 --> 00:31:42:** but but this list right here are some of the
**00:31:42 --> 00:31:46:** biggest challenges that you're going to come across when you're
**00:31:46 --> 00:31:47:** thinking of a retrofit.
**00:31:47 --> 00:31:51:** Moving from a fossil fuel all the way to electrification.
**00:31:51 --> 00:31:54:** Which is unfortunately something or fortunately what we really need
**00:31:54 --> 00:31:55:** to be focused on,
**00:31:55 --> 00:31:58:** because all of our building stock is not going to
**00:31:58 --> 00:32:00:** be newly constructed in every city.
**00:32:00 --> 00:32:03:** Every city is going to have its own makeup of
**00:32:03 --> 00:32:05:** new construction or retrofit,
**00:32:05 --> 00:32:08:** so the timing is really important to consider when you
**00:32:08 --> 00:32:11:** think of how many occupants are in the building,
**00:32:11 --> 00:32:13:** how many tenants are in the building,
**00:32:13 --> 00:32:15:** when do their leases turn over?
**00:32:15 --> 00:32:17:** Is it single tenant? That's really hard.
**00:32:17 --> 00:32:20:** That's really something that you have to factor in.
**00:32:22 --> 00:32:25:** Much, much longer term. It's a much,
**00:32:25 --> 00:32:29:** much longer term discussion. So ensuring there's enough space and
**00:32:29 --> 00:32:33:** making sure that your electric equivalents to your fossil fuel
**00:32:33 --> 00:32:34:** so you've got a boiler,
**00:32:34 --> 00:32:37:** for example, and you're looking at a heat pump or
**00:32:37 --> 00:32:40:** or whatever your swap out is going to be.
**00:32:40 --> 00:32:42:** It can't be an apples to apples comparison.
**00:32:42 --> 00:32:45:** It's not. It's not a one to one when you
**00:32:45 --> 00:32:48:** think about the other nuts and bolts of what,
**00:32:48 --> 00:32:49:** what, the technology pieces need,
**00:32:49 --> 00:32:53:** it needs to be on a much larger scale.
**00:32:53 --> 00:32:56:** Apples to oranges, almost unfortunately because it might involve rearranging
**00:32:56 --> 00:32:57:** your central plan.
**00:32:57 --> 00:33:00:** It might involve you know duck work that wasn't there.
**00:33:00 --> 00:33:03:** You know there there's a lot of a lot of

**00:33:03 --> 00:33:05:** pieces that you have to factor in,
**00:33:05 --> 00:33:07:** so it can't just be a one to one footprint
**00:33:07 --> 00:33:09:** to footprint conversation,
**00:33:09 --> 00:33:12:** it has to be a holistic building.
**00:33:12 --> 00:33:14:** I'm on the weather consideration side,
**00:33:14 --> 00:33:17:** you know I I don't even tell you guys living
**00:33:17 --> 00:33:18:** living in Denver.
**00:33:18 --> 00:33:20:** Cold weather certainly has considerations.
**00:33:20 --> 00:33:23:** Heat pump technology has significantly improved over the last decade.
**00:33:23 --> 00:33:26:** You know it used to be that you couldn't really
**00:33:27 --> 00:33:27:** go below.
**00:33:27 --> 00:33:31:** 35 or so degrees Fahrenheit with your heat pump technology
**00:33:31 --> 00:33:33:** and that is no rapidly improving,
**00:33:33 --> 00:33:37:** so those barriers are coming down as technology improves and
**00:33:38 --> 00:33:40:** supply and demand and costs improve.
**00:33:40 --> 00:33:43:** Uh, so upfront costs. I've already talked about that.
**00:33:43 --> 00:33:46:** I'll kind of skip over that for the sake of
**00:33:46 --> 00:33:50:** time and social equity is something that I I do
**00:33:50 --> 00:33:51:** want to highlight.
**00:33:51 --> 00:33:55:** It's not necessarily something that we have time to dive
**00:33:55 --> 00:33:56:** into tonight about,
**00:33:56 --> 00:33:59:** but social equity is something that's a very real consideration
**00:34:00 --> 00:34:01:** when we look at electrification.
**00:34:01 --> 00:34:05:** If you look at the number of gas utility customers
**00:34:05 --> 00:34:09:** and you decrease that number of gas utility customers because
**00:34:09 --> 00:34:12:** a subsection of that bucket has moved to an electric
**00:34:12 --> 00:34:16:** building or their building has been rates of Class A
**00:34:16 --> 00:34:17:** trophy asset,
**00:34:17 --> 00:34:20:** and it's been renovated to electric,
**00:34:20 --> 00:34:24:** suddenly the burden and the cost of gas utilities and
**00:34:24 --> 00:34:28:** gas costs are spread out over a smaller group of
**00:34:28 --> 00:34:31:** people and of residents and tenants.
**00:34:31 --> 00:34:34:** I'm simplifying the social equity piece here.
**00:34:34 --> 00:34:36:** There's many, many other facets of that conversation,
**00:34:36 --> 00:34:39:** but it is a very real consideration,
**00:34:39 --> 00:34:42:** not something that real estate can and should be the
**00:34:42 --> 00:34:45:** only ones to be aware of and solving,
**00:34:45 --> 00:34:48:** but at the bare minimum it's something that real estate
**00:34:48 --> 00:34:49:** stakeholders,
**00:34:49 --> 00:34:50:** no matter where you sit,

**00:34:50 --> 00:34:54:** should at least be aware of.
**00:34:54 --> 00:35:01:** And so occupant preference. Occupant preference is really rapidly increasing
**00:35:01 --> 00:35:05:** as far as their desires for sustainability.
**00:35:05 --> 00:35:08:** So you know, that's not to say that you're going
**00:35:08 --> 00:35:09:** to have a tenant come in.
**00:35:09 --> 00:35:12:** That necessarily knows they want an electric building,
**00:35:12 --> 00:35:14:** but they may be coming in and saying,
**00:35:14 --> 00:35:16:** you know, we want to net zero building,
**00:35:16 --> 00:35:19:** or we want to leave platinum building and it's up
**00:35:19 --> 00:35:22:** to you as the real estate practitioner and stakeholder to
**00:35:22 --> 00:35:23:** be able to say,
**00:35:23 --> 00:35:26:** OK, this is how it's going to translate to to
**00:35:26 --> 00:35:30:** an electric building versus a different type of building.
**00:35:30 --> 00:35:32:** So utility infrastructure and you know The Dirty,
**00:35:32 --> 00:35:33:** dirty little secret major always.
**00:35:33 --> 00:35:35:** Unfortunately, you know electric utility infrastructure.
**00:35:35 --> 00:35:37:** We can all go to electric buildings overnight.
**00:35:37 --> 00:35:40:** I mean, I'm not. I'm not going to try to
**00:35:40 --> 00:35:41:** argue otherwise.
**00:35:41 --> 00:35:44:** You know, here this afternoon or or any other time.
**00:35:44 --> 00:35:47:** But you know, we can't just snap our fingers and
**00:35:47 --> 00:35:48:** go to 100%
**00:35:48 --> 00:35:50:** electric buildings. There does need to be a much more
**00:35:50 --> 00:35:51:** progressive Flo,
**00:35:51 --> 00:35:54:** but this is really where the public private partnership is
**00:35:54 --> 00:35:56:** going to have to come in.
**00:35:56 --> 00:35:58:** It's not going to solely be up to the utilities.
**00:35:58 --> 00:36:00:** It's not going to be.
**00:36:00 --> 00:36:03:** Really, up to the real estate is going to be
**00:36:03 --> 00:36:04:** solely up to any industry,
**00:36:04 --> 00:36:07:** but just being aware of the of the progress of
**00:36:07 --> 00:36:07:** it.
**00:36:07 --> 00:36:10:** And also if you're a real estate developer owner,
**00:36:10 --> 00:36:12:** I'm involving your utility. If that's not a conversation that
**00:36:12 --> 00:36:15:** you're that you're used to having make sure you're having
**00:36:15 --> 00:36:16:** conversations with the utility.
**00:36:16 --> 00:36:19:** I it's always surprising for some folks what what their
**00:36:19 --> 00:36:20:** utility has to say.
**00:36:20 --> 00:36:22:** If they haven't, haven't chatted with them,
**00:36:22 --> 00:36:25:** and what incentives they might be missing too.
**00:36:25 --> 00:36:28:** OK, so this is this is my last real content

**00:36:28 --> 00:36:28:** slide here,
**00:36:28 --> 00:36:31:** but I did wanna want to kind of take some
**00:36:31 --> 00:36:34:** of the you know that was a lot of negative
**00:36:34 --> 00:36:37:** and I wanna I wanna take some of the negatives
**00:36:37 --> 00:36:39:** and talk about where some of the solutions lie and
**00:36:39 --> 00:36:42:** what the stakeholders that we interviewed for the electrify report
**00:36:43 --> 00:36:45:** what what some of them shared with us are ways
**00:36:45 --> 00:36:49:** to overcome those barriers. So making sure that you're optimizing
**00:36:49 --> 00:36:51:** those vacancies and occupant turnover.
**00:36:51 --> 00:36:54:** So even though occupancy can be a barrier to electrifying
**00:36:55 --> 00:36:55:** your building,
**00:36:55 --> 00:36:59:** making sure that you're looking at it now long term
**00:36:59 --> 00:37:03:** and you're optimizing those points of turnover versus kind of
**00:37:03 --> 00:37:07:** letting them pass by and not factoring in turnover from
**00:37:07 --> 00:37:10:** the perspective of how am I electrifying my building and
**00:37:11 --> 00:37:11:** and same?
**00:37:11 --> 00:37:14:** You know the same thing as as far as scheduling
**00:37:14 --> 00:37:17:** and planning for equipment turnover.
**00:37:17 --> 00:37:20:** Those are plans, their schedules that happen now versus down
**00:37:20 --> 00:37:20:** the line,
**00:37:20 --> 00:37:23:** so making sure that you're that you're really on top
**00:37:23 --> 00:37:24:** of it.
**00:37:24 --> 00:37:27:** Perhaps before you would necessarily be thinking of what's going
**00:37:27 --> 00:37:29:** to happen at that tenant turnover and and then you
**00:37:30 --> 00:37:32:** know second to last point here is is really making
**00:37:32 --> 00:37:35:** sure that that you've got the case for buy in.
**00:37:35 --> 00:37:38:** Now is the time to be having those conversations that
**00:37:38 --> 00:37:39:** only would see sweet,
**00:37:39 --> 00:37:41:** making sure that communication is is sound and going,
**00:37:41 --> 00:37:44:** and but also making sure you're communicating with your property
**00:37:44 --> 00:37:45:** teams and again,
**00:37:45 --> 00:37:48:** utility. You know I've I've brought up the utility.
**00:37:48 --> 00:37:49:** He's a number of times,
**00:37:49 --> 00:37:52:** but all of these stakeholders have to be involved in
**00:37:52 --> 00:37:53:** the conversation,
**00:37:53 --> 00:37:56:** even if it's not a group that you would necessarily
**00:37:56 --> 00:37:57:** bring to the table.
**00:37:57 --> 00:38:01:** For a typical retrofit or a typical tenant turnover.

**00:38:01 --> 00:38:03:** And then lastly, you know really,
**00:38:03 --> 00:38:06:** the only way that we're going to make net zero
**00:38:06 --> 00:38:08:** goals or gas bans or electrification,
**00:38:08 --> 00:38:10:** or carbon emissions, whatever it is,
**00:38:10 --> 00:38:12:** is to scale this across portfolios.
**00:38:12 --> 00:38:15:** It's really great that we're hearing right now.
**00:38:15 --> 00:38:18:** One off examples and. And that's that's fantastic.
**00:38:18 --> 00:38:21:** And I think we should continue to do some of
**00:38:21 --> 00:38:22:** that.
**00:38:22 --> 00:38:25:** But we really need to be scaling this and thinking
**00:38:26 --> 00:38:29:** of it as a as a wider solution for portfolios,
**00:38:29 --> 00:38:31:** supply and demand, you know.
**00:38:31 --> 00:38:33:** At the end of the day,
**00:38:33 --> 00:38:36:** if you're starting to do it over a wider number
**00:38:36 --> 00:38:37:** of of a assets,
**00:38:37 --> 00:38:39:** it's going better off for everybody in the end,
**00:38:39 --> 00:38:41:** and so so just last.
**00:38:41 --> 00:38:44:** Last point here. And if you want to take a
**00:38:44 --> 00:38:45:** look at the full report,
**00:38:45 --> 00:38:47:** I would definitely encourage you to.
**00:38:47 --> 00:38:49:** It's it's free and openly available.
**00:38:49 --> 00:38:51:** You can find it at ui.org/electrify.
**00:38:51 --> 00:38:54:** It's also on utilized knowledge Finder platform or feel free
**00:38:54 --> 00:38:57:** to to reach out to me after this webinar if
**00:38:57 --> 00:38:59:** you have any specific questions.
**00:38:59 --> 00:39:01:** So Mary and I won't hit it back
**00:39:01 --> 00:39:02:** over to you. Thank you so much,
**00:39:02 --> 00:39:05:** Emily. And I'm going to turn it over to our
**00:39:05 --> 00:39:06:** next speaker,
**00:39:06 --> 00:39:09:** Ellen. Mccreadie with East West Partners.
**00:39:13 --> 00:39:16:** See thank you Maryann, can you can you hear me?
**00:39:16 --> 00:39:19:** Yep, one second while I mute myself before you take
**00:39:19 --> 00:39:19:** control.
**00:39:19 --> 00:39:20:** Thank
**00:39:20 --> 00:39:25:** you, OK? Alright, well I'm gonna guess that she's muted
**00:39:25 --> 00:39:31:** so thank you for having me really great presentation so
**00:39:31 --> 00:39:31:** far,
**00:39:31 --> 00:39:34:** so I'm going to talk about our project here in
**00:39:35 --> 00:39:37:** Snowmass called Electric Pass Lodge.
**00:39:37 --> 00:39:42:** See. OK, so first for context,
**00:39:42 --> 00:39:46:** for context. So Snowmass is one of the four ski
**00:39:46 --> 00:39:49:** areas and the Aspen Snowmass collection.

**00:39:49 --> 00:39:53:** Snowmass Base Village sits at the base of the resort,
**00:39:53 --> 00:39:56:** you can see it highlighted in yellow.
**00:39:56 --> 00:40:00:** There it's about 19 acres just over a million entitled
**00:40:00 --> 00:40:01:** square feet,
**00:40:01 --> 00:40:05:** residential, commercial and hotel across 17 buildings.
**00:40:05 --> 00:40:08:** So it was originally approved back in 2004.
**00:40:08 --> 00:40:11:** The first six buildings were completed around 2009,
**00:40:11 --> 00:40:14:** but the project stalled as part of the recession,
**00:40:14 --> 00:40:18:** and it sat essentially dormant and partially built for about
**00:40:18 --> 00:40:19:** a decade.
**00:40:19 --> 00:40:23:** Uhm, so it was acquired by the partner partnership of
**00:40:23 --> 00:40:28:** KSL Capital Aspen Skiing company in East West Partners in
**00:40:28 --> 00:40:28:** 2016.
**00:40:28 --> 00:40:32:** We focused on the core of the village 1st and
**00:40:32 --> 00:40:34:** since then we've built,
**00:40:34 --> 00:40:38:** sold or leased roughly 300,000 square feet in five buildings.
**00:40:38 --> 00:40:42:** In addition to closing out real estate sales at the
**00:40:42 --> 00:40:43:** Viceroy Snowmass,
**00:40:43 --> 00:40:47:** so today the village includes more than 20 restaurants and
**00:40:47 --> 00:40:50:** retail tenants expanded guest services.
**00:40:50 --> 00:40:52:** Related to transit and skiers.
**00:40:52 --> 00:40:55:** Public amenities. The ice rink you see here in this
**00:40:55 --> 00:40:56:** screen,
**00:40:56 --> 00:40:59:** a game lounge you see in the lower right and
**00:40:59 --> 00:41:01:** a climbing wall,
**00:41:01 --> 00:41:04:** the Limelight Hotel. So we've now turned our attention to
**00:41:04 --> 00:41:06:** the future phases,
**00:41:06 --> 00:41:09:** and so there's another 500,000 square feet still to be
**00:41:09 --> 00:41:11:** developed on the remaining parcels.
**00:41:11 --> 00:41:13:** Kind of what you see.
**00:41:13 --> 00:41:16:** I don't know if you can see my cursor,
**00:41:16 --> 00:41:20:** but the vacant land there and.
**00:41:20 --> 00:41:26:** So the first of which is Electric path Lodge and
**00:41:26 --> 00:41:28:** let's see.
**00:41:28 --> 00:41:31:** Uh, and so this you can see on the map
**00:41:31 --> 00:41:35:** there is the first building to expand the village from
**00:41:35 --> 00:41:38:** the existing core on the right of the screen over
**00:41:38 --> 00:41:42:** towards the Viceroy Snowmass on the site you can see
**00:41:42 --> 00:41:43:** here is shown.
**00:41:43 --> 00:41:47:** It's rounding out, sort of the most visible front facade.
**00:41:47 --> 00:41:50:** If you're approaching the village by car up Brush Creek
**00:41:50 --> 00:41:51:** Rd.

**00:41:51 --> 00:41:53:** And So what is Electric pass lodge?
**00:41:53 --> 00:41:56:** So the project is 52 for sale condominiums and one
**00:41:56 --> 00:41:58:** employee housing unit.
**00:41:58 --> 00:42:01:** It's ski in ski out the face of Snowmass.
**00:42:01 --> 00:42:03:** It has an adjacent village pool,
**00:42:03 --> 00:42:07:** so I'll touch a little bit more on that later,
**00:42:07 --> 00:42:10:** but that's an amenity that's open to the entire base
**00:42:10 --> 00:42:11:** village.
**00:42:11 --> 00:42:13:** And then in terms of amenities,
**00:42:13 --> 00:42:15:** the building itself really the main amenity,
**00:42:15 --> 00:42:18:** is the village and everything surrounding it.
**00:42:18 --> 00:42:20:** But there's an owners lounge,
**00:42:20 --> 00:42:23:** both interior and interior and exterior as well as ski
**00:42:23 --> 00:42:26:** locker room and underground parking with this building,
**00:42:26 --> 00:42:29:** so it's about 101 total.
**00:42:29 --> 00:42:33:** Gross square feet. So the mission when we set out
**00:42:33 --> 00:42:37:** this on this project is to offer approachable,
**00:42:37 --> 00:42:41:** responsible and healthy skin scale residences and the hardest comma
**00:42:41 --> 00:42:42:** space village.
**00:42:42 --> 00:42:46:** For seekers of adventure and an enlightened mountain living.
**00:42:46 --> 00:42:50:** So from the beginning really leading with responsibility and sustainability
**00:42:50 --> 00:42:52:** in all of our messaging.
**00:42:52 --> 00:42:55:** So what does sustainability mean for this project?
**00:42:55 --> 00:42:58:** We've really tried to push the envelope here.
**00:42:58 --> 00:43:01:** We've used both passive strategies and technology.
**00:43:01 --> 00:43:06:** To do so, an energy efficient powered by 100%
**00:43:06 --> 00:43:12:** renewable energy both on site solar but also off site
**00:43:12 --> 00:43:16:** through Holy Cross is pure energy program.
**00:43:16 --> 00:43:18:** Uh, and also high performing.
**00:43:18 --> 00:43:21:** So what we found to be seemingly the biggest benefit
**00:43:21 --> 00:43:22:** of our design.
**00:43:22 --> 00:43:25:** Designing a building like this is that you end up
**00:43:25 --> 00:43:29:** with just again a really high performing and healthy building
**00:43:29 --> 00:43:31:** in terms of indoor air quality.
**00:43:31 --> 00:43:35:** So. These sorry, there's a little delay here,
**00:43:35 --> 00:43:39:** but these were the pillars that sort of drove our
**00:43:39 --> 00:43:42:** marketing and I won't dive into them fully.
**00:43:42 --> 00:43:43:** But as you can see,
**00:43:43 --> 00:43:48:** leading with responsible and sustainable healthy development from from the
**00:43:48 --> 00:43:49:** beginning.

**00:43:49 --> 00:43:53:** So the building includes basically 3 unit types,
**00:43:53 --> 00:43:57:** split between two and three bedroom configurations,
**00:43:57 --> 00:44:04:** and priced from just under $1.4 million to just over
**00:44:04 --> 00:44:05:** $3 million.
**00:44:05 --> 00:44:07:** I've included a few renderings,
**00:44:07 --> 00:44:09:** all roll through them pretty quickly,
**00:44:09 --> 00:44:12:** but this is from looking at the building from the
**00:44:12 --> 00:44:13:** North looking South,
**00:44:13 --> 00:44:18:** so this is as you're approaching base village on Brush
**00:44:18 --> 00:44:18:** Creek Rd.
**00:44:18 --> 00:44:21:** This is the other side of the building.
**00:44:21 --> 00:44:23:** The South side of the building,
**00:44:23 --> 00:44:26:** and to get back to the village pool.
**00:44:26 --> 00:44:30:** A big caveat here of this building is that the
**00:44:30 --> 00:44:31:** pool is a separate,
**00:44:31 --> 00:44:35:** basically amenity. It again serves up Eudy requirement that serves
**00:44:35 --> 00:44:38:** the entire village and so it is actually not all
**00:44:38 --> 00:44:39:** electric.
**00:44:39 --> 00:44:42:** It's heated and the snow melt around the pool deck
**00:44:42 --> 00:44:45:** itself is gas is provided by gas fired boiler.
**00:44:45 --> 00:44:49:** We just couldn't find a way to do that efficiently.
**00:44:49 --> 00:44:51:** Without incorporating geothermal into the project,
**00:44:51 --> 00:44:55:** which we couldn't do due to a number of constraints
**00:44:55 --> 00:44:56:** and so,
**00:44:56 --> 00:45:01:** then here's just an interior rendering to get an idea
**00:45:01 --> 00:45:02:** of the design.
**00:45:02 --> 00:45:05:** And so basically, you know we've had a lot of
**00:45:05 --> 00:45:06:** talking about.
**00:45:06 --> 00:45:08:** Sort of. Why did we go this path?
**00:45:08 --> 00:45:11:** And one thing that kind of.
**00:45:11 --> 00:45:14:** Uh, anchors back to is Aspen skiing company.
**00:45:14 --> 00:45:18:** A couple years ago, had a really robust campaign.
**00:45:18 --> 00:45:20:** They called give a flake,
**00:45:20 --> 00:45:23:** and I think that really is applicable here.
**00:45:23 --> 00:45:26:** Our local economy depends on snow and therefore reducing carbon
**00:45:27 --> 00:45:27:** emissions.
**00:45:27 --> 00:45:30:** And so as developers in the ski resort,
**00:45:30 --> 00:45:34:** we feel like we have an obligation to care about
**00:45:34 --> 00:45:35:** what we're building.
**00:45:35 --> 00:45:39:** We also think that sustainability is a luxury value which

**00:45:39 --> 00:45:42:** is really evident in the automobile industry.
**00:45:42 --> 00:45:47:** Uhm, and we're probably and obviously really applicable to our
**00:45:47 --> 00:45:48:** buyers here and then.
**00:45:48 --> 00:45:53:** Probably preaching to the choir here or definitely but that
**00:45:53 --> 00:45:57:** net zero and electrification are not just a trend today,
**00:45:57 --> 00:46:02:** but they're seemingly the future of real estate development.
**00:46:02 --> 00:46:06:** So our approach for this building is a carbon free
**00:46:06 --> 00:46:11:** strategy and it starts by building a really efficient building
**00:46:11 --> 00:46:14:** past some strategies in orientation,
**00:46:14 --> 00:46:19:** but also just in building a really robust envelope with
**00:46:19 --> 00:46:20:** enhanced insulation,
**00:46:20 --> 00:46:23:** insulation and triple pane windows,
**00:46:23 --> 00:46:28:** and then using those things to control belodon the mechanical
**00:46:28 --> 00:46:28:** systems.
**00:46:28 --> 00:46:33:** And then from there installing really efficient systems.
**00:46:33 --> 00:46:36:** So then and then taking that and powering it all
**00:46:36 --> 00:46:41:** electrically and then sourcing that electricity through 100%
**00:46:41 --> 00:46:45:** renewable energy. And again, that's through onsite solar panels,
**00:46:45 --> 00:46:48:** but also through fully crossed here has a pure energy
**00:46:48 --> 00:46:52:** program which is completely renewable power.
**00:46:54 --> 00:46:58:** So sustainability features and I'll get into some of these
**00:46:58 --> 00:47:00:** details in the following slides.
**00:47:00 --> 00:47:02:** Again, it hinges on a really robust envelope,
**00:47:02 --> 00:47:05:** so with enhanced insulation and triple pane windows,
**00:47:05 --> 00:47:09:** and then I'll look at some of the other things
**00:47:09 --> 00:47:10:** on the following slides.
**00:47:10 --> 00:47:14:** So there's a lot of things that are hidden sort
**00:47:14 --> 00:47:15:** of behind the scenes,
**00:47:15 --> 00:47:17:** and what those things are,
**00:47:17 --> 00:47:21:** or phase change materials. We have phase change material in
**00:47:21 --> 00:47:22:** the living room,
**00:47:22 --> 00:47:26:** ceilings and bedroom ceilings, and that's basically a passive material.
**00:47:26 --> 00:47:30:** That absorbs and stores excess heat and then releases it
**00:47:30 --> 00:47:31:** is space is cool,
**00:47:31 --> 00:47:35:** so it's a passive way to maintain temperature in a
**00:47:35 --> 00:47:36:** space.
**00:47:36 --> 00:47:41:** We have 100% natural ventilation where preconditioned air comes through

**00:47:41 --> 00:47:44:** an earth tube system and then goes to an RV
**00:47:44 --> 00:47:48:** in each unit that provides both natural ventilation and also
**00:47:48 --> 00:47:52:** bypass cooling. So I already spoke to the insulation and
**00:47:52 --> 00:47:54:** then I guess it's visible,
**00:47:54 --> 00:47:57:** but the but the. Rooftop solar.
**00:47:57 --> 00:48:00:** So then there are the things that our buyers will
**00:48:00 --> 00:48:00:** see,
**00:48:00 --> 00:48:02:** touch and feel on a daily basis.
**00:48:02 --> 00:48:05:** So one of those is an induction cook top.
**00:48:05 --> 00:48:09:** A lot of people are used to cooking with gas,
**00:48:09 --> 00:48:11:** so I'm getting buyers used to induction.
**00:48:11 --> 00:48:13:** The other is a fireplace.
**00:48:13 --> 00:48:16:** So up here in the mountains a fireplace sort of
**00:48:16 --> 00:48:17:** a must have,
**00:48:17 --> 00:48:21:** so we're using it's from dimplex there optimist technology and
**00:48:21 --> 00:48:24:** I should have included a video of it's really cool.
**00:48:24 --> 00:48:27:** If you have a chance to look it up.
**00:48:27 --> 00:48:29:** But it's a steam technology.
**00:48:29 --> 00:48:31:** Basically that dumb, but it's a,
**00:48:31 --> 00:48:34:** but it's electric, so it's water vapor.
**00:48:34 --> 00:48:39:** It's lights on water vapor instead of a gas fireplace.
**00:48:39 --> 00:48:42:** We have electric heat. We have ceiling fans as part
**00:48:42 --> 00:48:47:** of our passive cooling and high performance triple pane European
**00:48:47 --> 00:48:48:** style windows.
**00:48:48 --> 00:48:53:** And then another thing is that people can't have gas
**00:48:53 --> 00:48:55:** grills and so we have.
**00:48:55 --> 00:48:58:** We've been testing here. Some electric grills to try to
**00:48:58 --> 00:49:02:** figure out something that's a good solution for those that
**00:49:02 --> 00:49:05:** want to make use of of their out of outdoor
**00:49:05 --> 00:49:08:** cooking. And so I'm going to circle back to this
**00:49:09 --> 00:49:12:** only if there's a few minutes at the end.
**00:49:12 --> 00:49:14:** But one key aspect was that we had to educate
**00:49:15 --> 00:49:17:** our buyers and really just tell them why are we
**00:49:17 --> 00:49:18:** doing what,
**00:49:18 --> 00:49:21:** we're what we're doing, and what are we doing in
**00:49:21 --> 00:49:23:** a way that that they would understand.
**00:49:23 --> 00:49:26:** So if there's time we'll circle back to this video,
**00:49:26 --> 00:49:28:** but on the sales and marketing front,
**00:49:28 --> 00:49:31:** oh, ah, hold on. Go to the next slide.
**00:49:31 --> 00:49:35:** There we go. So in the sales and marketing front
**00:49:35 --> 00:49:38:** we let heavily with sustainability.

**00:49:38 --> 00:49:39:** We did some test advertisements.
**00:49:39 --> 00:49:42:** In fact when we lead with a sustainability message in
**00:49:42 --> 00:49:46:** a lifestyle message and the sustainability message actually resonated.
**00:49:46 --> 00:49:51:** Most meaning it got the most kind of clicks in
**00:49:51 --> 00:49:51:** action.
**00:49:51 --> 00:49:55:** But we also went to an all digital sales process,
**00:49:55 --> 00:49:59:** so our kind of discussion was at a next generation
**00:49:59 --> 00:50:02:** building deserves a next generation sales process,
**00:50:02 --> 00:50:06:** and that was driven by what you see with the
**00:50:06 --> 00:50:07:** automobile industry.
**00:50:07 --> 00:50:11:** Meaning you can go online and put down a deposit
**00:50:11 --> 00:50:16:** for the next latest and greatest Tesla or electric Hummer
**00:50:16 --> 00:50:17:** or whatever it is.
**00:50:17 --> 00:50:22:** And it's just a really seamless and easy purchasing process.
**00:50:22 --> 00:50:26:** So we had just really high level teaser type advertising
**00:50:26 --> 00:50:30:** last winter and then later in the winter we announced
**00:50:30 --> 00:50:34:** sort of our all digital sales campaign which turned out
**00:50:34 --> 00:50:38:** with COVID and having less kind of travelers and market
**00:50:39 --> 00:50:42:** turned to be how to be really effective.
**00:50:42 --> 00:50:46:** So we had this process where you could make a
**00:50:46 --> 00:50:51:** reservation to purchase a unit with a fully refundable just
**00:50:51 --> 00:50:53:** $1000 down and then.
**00:50:53 --> 00:50:56:** Uhm later, so you just simply kind of clicked forms
**00:50:56 --> 00:51:00:** online on the website and paid with a credit card
**00:51:00 --> 00:51:02:** and then so we had reservations.
**00:51:02 --> 00:51:04:** So we open reservations January 26th.
**00:51:04 --> 00:51:08:** We got 20 reservations in the first half hour and
**00:51:08 --> 00:51:10:** ended up with 75 total.
**00:51:10 --> 00:51:13:** It was just $1000. It was fully refundable so we
**00:51:14 --> 00:51:17:** knew there would be a fair bit of fallout resulted
**00:51:17 --> 00:51:21:** in 16 contracts and so we would call that as
**00:51:21 --> 00:51:24:** success on our end. But once you made a reservation,
**00:51:24 --> 00:51:28:** you could go online, similar to picking the interior color
**00:51:28 --> 00:51:29:** of your car.
**00:51:29 --> 00:51:32:** You could pick your residences that you liked and what
**00:51:32 --> 00:51:33:** you were,
**00:51:33 --> 00:51:35:** what you were looking for,
**00:51:35 --> 00:51:38:** and actually our sales team could kind of see what
**00:51:38 --> 00:51:39:** you were,
**00:51:39 --> 00:51:40:** what you were shopping for.
**00:51:40 --> 00:51:42:** You could do your due diligence.

**00:51:42 --> 00:51:45:** Look at all of the finished books.
**00:51:45 --> 00:51:47:** All of the purchase and sale agreement,
**00:51:47 --> 00:51:50:** and then you would convert to an actual contract.
**00:51:50 --> 00:51:52:** We did that starting in March,
**00:51:52 --> 00:51:54:** so. Uhm, I can go,
**00:51:54 --> 00:51:56:** you know, deeper into that,
**00:51:56 --> 00:51:59:** but we would definitely call it a success.
**00:51:59 --> 00:52:02:** We've been out in the market since March and we
**00:52:03 --> 00:52:05:** now have 45 residences under contract,
**00:52:05 --> 00:52:09:** so only 7 units remaining in the building for sale
**00:52:09 --> 00:52:12:** and see if the next slide shows where we are
**00:52:12 --> 00:52:13:** today.
**00:52:13 --> 00:52:17:** So we started construction. On the 1st week of April
**00:52:17 --> 00:52:21:** we broke ground and so we're just in sort of
**00:52:21 --> 00:52:24:** site work and foundation work.
**00:52:24 --> 00:52:27:** Right now it's about a two year build,
**00:52:27 --> 00:52:32:** so projected to be done in the spring of 2023.
**00:52:32 --> 00:52:34:** Uhm, and so that's what I have.
**00:52:34 --> 00:52:37:** An electric pass lodge in terms of what's next here
**00:52:37 --> 00:52:38:** in Batesville.
**00:52:38 --> 00:52:40:** Age render design on project called Cora,
**00:52:40 --> 00:52:42:** which we haven't released information on,
**00:52:42 --> 00:52:45:** but I'll say that we are carrying forward the electrification
**00:52:45 --> 00:52:47:** strategy and exploring even more enhanced,
**00:52:47 --> 00:52:49:** sustainable design that's being vetted as we speak.
**00:52:49 --> 00:52:51:** So that's all I have.
**00:52:51 --> 00:52:54:** I don't know Marianne where we are with time for
**00:52:54 --> 00:52:54:** the video,
**00:52:54 --> 00:52:57:** I think we might be out of it,
**00:52:57 --> 00:53:00:** but it's on our website if people want to check
**00:53:00 --> 00:53:01:** it out.
**00:53:01 --> 00:53:05:** That's exactly right, and we can actually play it after
**00:53:05 --> 00:53:05:** Q&A.
**00:53:05 --> 00:53:07:** But thank you so much Emily.
**00:53:07 --> 00:53:11:** Really a pleasure to see what you've been working on.
**00:53:11 --> 00:53:15:** And now I'll turn it over to our next speaker,
**00:53:15 --> 00:53:16:** Andy Bush with Morgan Creek Ventures.
**00:53:16 --> 00:53:18:** Hi Andy. Hi, how are you?
**00:53:18 --> 00:53:20:** Can you hear me? Yes.
**00:53:23 --> 00:53:24:** So I'm going to talk.
**00:53:24 --> 00:53:27:** You can go to the next slide just about kind
**00:53:27 --> 00:53:28:** of our focus.

**00:53:28 --> 00:53:31:** We at the moment or about a little bit between
**00:53:31 --> 00:53:34:** the 3rd and halfway done with about a half million
**00:53:34 --> 00:53:36:** square feet of all electric buildings.
**00:53:36 --> 00:53:38:** We built half a dozen.
**00:53:38 --> 00:53:41:** We have another half dozen in the works and I
**00:53:41 --> 00:53:44:** would say that just for us as a company,
**00:53:44 --> 00:53:47:** we're essentially focused on all electric buildings I think is
**00:53:47 --> 00:53:48:** Ellen said.
**00:53:48 --> 00:53:51:** It's really all about great building envelopes that make it
**00:53:52 --> 00:53:52:** work.
**00:53:52 --> 00:53:55:** I'll talk a little bit about how we use PV,
**00:53:55 --> 00:53:58:** including vertical walls, but one of the cooler things we're
**00:53:58 --> 00:54:01:** doing right now is we're actually doing some testing.
**00:54:01 --> 00:54:04:** Some windows that actually just have a window film that
**00:54:04 --> 00:54:06:** is about right now.
**00:54:06 --> 00:54:08:** 6% efficient solar panels that are 24%
**00:54:08 --> 00:54:11:** efficient, but they're thinking these windows might get to 12
**00:54:11 --> 00:54:12:** or 14%.
**00:54:12 --> 00:54:15:** Think if every building could have windows that were half
**00:54:15 --> 00:54:17:** as efficient as solar panels,
**00:54:17 --> 00:54:20:** and you can still see through.
**00:54:20 --> 00:54:22:** And so it's really high performance design.
**00:54:22 --> 00:54:25:** We're starting to look at all of our operations with
**00:54:25 --> 00:54:29:** a focus on sustainability in both new buildings as well
**00:54:29 --> 00:54:31:** as existing retrofits next time.
**00:54:34 --> 00:54:37:** We're also starting to build for others because we're finding
**00:54:37 --> 00:54:40:** there's a demand by other people to have full electric
**00:54:40 --> 00:54:40:** buildings.
**00:54:40 --> 00:54:42:** Kind of built to suit,
**00:54:42 --> 00:54:46:** so we just finished a modest sized North American headquarters
**00:54:46 --> 00:54:47:** for VHISOLA.
**00:54:47 --> 00:54:49:** Manufacturer of environmental instruments, that's essentially.
**00:54:49 --> 00:54:53:** Net there already, and that we haven't put the solar
**00:54:53 --> 00:54:54:** panels on yet,
**00:54:54 --> 00:54:57:** but it's all electric. Great building envelope there.
**00:54:57 --> 00:54:59:** We actually did composite steel with CLT,
**00:54:59 --> 00:55:01:** cross laminated timber for the floors,
**00:55:01 --> 00:55:04:** actually becomes ceilings in this case,
**00:55:04 --> 00:55:07:** and so there's a growing demand for this kind of
**00:55:07 --> 00:55:08:** product.
**00:55:08 --> 00:55:13:** Next slide. And for me it still has to be,

**00:55:13 --> 00:55:16:** you know, as good or better than the competition.
**00:55:16 --> 00:55:19:** I think Ellen talked about that it's got to be
**00:55:19 --> 00:55:21:** really great product.
**00:55:21 --> 00:55:24:** Next slide. I mean for us whether it's office or
**00:55:24 --> 00:55:28:** next slide residential people really have to want to live
**00:55:28 --> 00:55:28:** in it.
**00:55:28 --> 00:55:30:** I mean, so for us,
**00:55:30 --> 00:55:35:** it's this kind of combination between design and sustainability that
**00:55:35 --> 00:55:35:** slide.
**00:55:35 --> 00:55:38:** And we're also really focused on not just electrification,
**00:55:38 --> 00:55:40:** although that's a really big part of it.
**00:55:40 --> 00:55:43:** But this is a water treatment facility in one of
**00:55:43 --> 00:55:45:** the projects that we did,
**00:55:45 --> 00:55:48:** so all the water from the roof comes down,
**00:55:48 --> 00:55:49:** drains through this roof garden.
**00:55:49 --> 00:55:52:** It was actually a condominium project in this unit was
**00:55:52 --> 00:55:54:** on the 1st floor,
**00:55:54 --> 00:55:56:** but it's sold for more than the units on the
**00:55:56 --> 00:55:59:** 4th floor because of the water garden.
**00:55:59 --> 00:56:02:** So it's about blending all of this together in today's
**00:56:02 --> 00:56:02:** world.
**00:56:02 --> 00:56:07:** Next slide. So for me I'm starting I'm I'm kind
**00:56:07 --> 00:56:07:** of.
**00:56:07 --> 00:56:11:** I would say I'm a reformed net zero energy person
**00:56:11 --> 00:56:13:** or the other way to say it is kind of.
**00:56:13 --> 00:56:16:** Net Zero 1.0 is done and I think it's time
**00:56:16 --> 00:56:19:** for us to start breaking it down into the components.
**00:56:19 --> 00:56:22:** And as Emily said, net zero energy is great,
**00:56:22 --> 00:56:25:** but really only a certain kind of building type can
**00:56:25 --> 00:56:28:** get to that on site and so it's also combining
**00:56:28 --> 00:56:30:** it with offsite power that's clean.
**00:56:30 --> 00:56:33:** But the biggest thing for me is starting to break
**00:56:33 --> 00:56:34:** it into these.
**00:56:34 --> 00:56:37:** Component Parts 1st is how much energy do these buildings
**00:56:37 --> 00:56:38:** consume?
**00:56:38 --> 00:56:42:** The second is what's reasonable to produce on the buildings
**00:56:42 --> 00:56:45:** on site and then how do we procure the right
**00:56:45 --> 00:56:46:** offsite power?
**00:56:46 --> 00:56:49:** And then finally how do we manage these long term
**00:56:49 --> 00:56:53:** basis so that they stay sustainability sustainable and optimized.
**00:56:53 --> 00:56:56:** So the first part is and this is a slide.

**00:56:56 --> 00:56:58:** I spoke from someone else.
**00:56:58 --> 00:57:02:** I'm not sure exactly who but the biggest point is
**00:57:02 --> 00:57:04:** you take the left hand side.
**00:57:04 --> 00:57:06:** Which is existing buildings consumed somewhere between,
**00:57:06 --> 00:57:10:** let's say, 70 and 80 E wise per square foot
**00:57:10 --> 00:57:14:** per year and don't worry about what that really means,
**00:57:14 --> 00:57:17:** it's it's KB Btus per square foot per year.
**00:57:17 --> 00:57:20:** But just think of it in relative terms,
**00:57:20 --> 00:57:23:** they consume 80 new buildings and retrofit buildings.
**00:57:23 --> 00:57:25:** Need to consume somewhere between 25 and 35.
**00:57:25 --> 00:57:28:** If we're really going to make this work.
**00:57:28 --> 00:57:32:** So we need to go from 80 on the consumption
**00:57:32 --> 00:57:35:** side 70 to 80 to 25 or 35.
**00:57:35 --> 00:57:37:** So just think of it in those relative terms.
**00:57:37 --> 00:57:42:** Next fight. And this is one that nobody can see,
**00:57:42 --> 00:57:45:** and it's actually a piece of a much bigger spreadsheet.
**00:57:45 --> 00:57:48:** But the point that I would make is while this
**00:57:48 --> 00:57:50:** is inevitable and honestly,
**00:57:50 --> 00:57:52:** it's not rocket science, it's complicated.
**00:57:52 --> 00:57:55:** If you go to the next slide.
**00:57:55 --> 00:57:58:** I would say that in designing a net zero energy
**00:57:58 --> 00:58:02:** building or or really forgetting that their energy and high
**00:58:02 --> 00:58:06:** performance building a good building that consumes somewhere between 25
**00:58:06 --> 00:58:09:** and 30 per year instead of 80,
**00:58:09 --> 00:58:12:** that there's probably 50 core decisions that you need to
**00:58:13 --> 00:58:13:** make and,
**00:58:13 --> 00:58:16:** and there's enough good professionals out there now.
**00:58:16 --> 00:58:20:** And the consulting side, whether it's architects or sustainability consultants,
**00:58:20 --> 00:58:22:** it's not that hard to do,
**00:58:22 --> 00:58:25:** but it's important that you think of it as a
**00:58:26 --> 00:58:26:** process.
**00:58:26 --> 00:58:29:** And don't just jump into electrifying building.
**00:58:29 --> 00:58:31:** You need to understand why you're doing it,
**00:58:31 --> 00:58:36:** what the components are, and the decisions you're making to
**00:58:36 --> 00:58:38:** go to the next slide.
**00:58:38 --> 00:58:41:** So here in the left is that kind of average
**00:58:42 --> 00:58:45:** new building which might be 57 and if you look
**00:58:45 --> 00:58:48:** at the slide on the right in the case of
**00:58:48 --> 00:58:51:** one of the first couple buildings we did,
**00:58:51 --> 00:58:54:** the 25 was what we thought we could produce in

**00:58:54 --> 00:58:56:** terms of on site power.
**00:58:56 --> 00:58:59:** So then those kind of graded pieces in the middle
**00:58:59 --> 00:59:01:** are the different decisions you make.
**00:59:01 --> 00:59:05:** Really good windows mean a difference between out of that
**00:59:05 --> 00:59:08:** 25 May mean a difference of one when it comes
**00:59:08 --> 00:59:10:** down to a residential.
**00:59:10 --> 00:59:13:** Building about a little bit more than 1/3 of the
**00:59:13 --> 00:59:14:** energy gets used,
**00:59:14 --> 00:59:17:** producing hot water, so that's really big decision.
**00:59:17 --> 00:59:20:** As part of it, windows was a one.
**00:59:20 --> 00:59:22:** Hot water is a 7th.
**00:59:22 --> 00:59:25:** If you think of elevators in a commercial building,
**00:59:25 --> 00:59:30:** they're a .5. If you think of something like.
**00:59:30 --> 00:59:33:** Plug loads in a residential building at the very important
**00:59:33 --> 00:59:33:** decision.
**00:59:33 --> 00:59:36:** It's about a third or a little less.
**00:59:36 --> 00:59:37:** Same way in a commercial building.
**00:59:37 --> 00:59:40:** Plug loads or about a third of the load.
**00:59:40 --> 00:59:42:** There can be a lot more,
**00:59:42 --> 00:59:45:** so you start getting into these kind of little decisions
**00:59:45 --> 00:59:48:** that all add up to make it good building next
**00:59:48 --> 00:59:48:** slide.
**00:59:51 --> 00:59:53:** I think this one will play,
**00:59:53 --> 00:59:55:** so these are four buildings that we've done.
**00:59:55 --> 00:59:58:** All electric. You know they look like normal buildings.
**00:59:58 --> 01:00:00:** Hopefully they're good. Design the shade.
**01:00:00 --> 01:00:04:** Their structure is designed to provide additional area for solar,
**01:00:04 --> 01:00:06:** but it also creates a really cool outdoor deck.
**01:00:06 --> 01:00:09:** But I think that the point I'm trying to make
**01:00:10 --> 01:00:12:** is when we used to think about the early net
**01:00:13 --> 01:00:14:** zero buildings,
**01:00:14 --> 01:00:16:** they were these kind of chromatically sealed boxes.
**01:00:16 --> 01:00:19:** Now they're just really good buildings and they can be
**01:00:19 --> 01:00:22:** just about anything from a design standpoint.
**01:00:22 --> 01:00:25:** To kind of respect those core principles next line.
**01:00:28 --> 01:00:32:** So is element said building envelopes are kind of the
**01:00:32 --> 01:00:35:** key to all electric buildings we have to make sure
**01:00:35 --> 01:00:39:** that we have really good insulation and that we have
**01:00:39 --> 01:00:43:** really good windows that usually are crippled painter quad pain.
**01:00:43 --> 01:00:46:** They're filled with either argon or Krypton gas and then
**01:00:46 --> 01:00:49:** try didn't even know Krypton existed in reality.

**01:00:49 --> 01:00:53:** But it's a gas in our temperatures and and then
**01:00:53 --> 01:00:54:** we use things.
**01:00:54 --> 01:00:58:** We've used a product that everybody should know about called
**01:00:58 --> 01:00:58:** Aero Barrier.
**01:00:58 --> 01:01:02:** That's essentially released almost like a bug bomb and what
**01:01:02 --> 01:01:05:** it does is it goes out and it fills all
**01:01:05 --> 01:01:08:** the cracks and it can reduce air infiltration by 25
**01:01:08 --> 01:01:11:** to 50%. So we do that for all our residential
**01:01:11 --> 01:01:12:** units.
**01:01:12 --> 01:01:15:** We also do it for the commercial and then it
**01:01:15 --> 01:01:16:** becomes kind of easy.
**01:01:16 --> 01:01:19:** Right? LED lighting makes all the sense in the world
**01:01:20 --> 01:01:22:** right now and it's pretty darn cheap.
**01:01:22 --> 01:01:25:** Commercial heat pumps are becoming more and more efficient as
**01:01:25 --> 01:01:29:** Emily talked about and Ellen talked about and they get
**01:01:29 --> 01:01:29:** it.
**01:01:29 --> 01:01:31:** More efficient by sometimes 5 to 10%
**01:01:31 --> 01:01:34:** a year, or at least with each generation every couple
**01:01:34 --> 01:01:34:** of years.
**01:01:34 --> 01:01:37:** So we're getting to where all the component parts are
**01:01:37 --> 01:01:38:** there.
**01:01:38 --> 01:01:41:** It's really just about how we put it together next
**01:01:41 --> 01:01:41:** time.
**01:01:44 --> 01:01:46:** So on the mechanical electrical side,
**01:01:46 --> 01:01:50:** once you've built a really good building envelope again,
**01:01:50 --> 01:01:53:** commercial heat pumps are kind of the way to go
**01:01:54 --> 01:01:58:** for both residential and office and indoor air quality.
**01:01:58 --> 01:02:00:** We really focus a lot,
**01:02:00 --> 01:02:04:** obviously given COVID on air infiltration as well as air
**01:02:04 --> 01:02:05:** filtration.
**01:02:05 --> 01:02:09:** Merv 13 filters and more hot water systems for commercial
**01:02:09 --> 01:02:12:** use all kind of instant hot out butter systems for
**01:02:13 --> 01:02:14:** residential use,
**01:02:14 --> 01:02:18:** period decentral. Plant as part of it and sometimes will
**01:02:18 --> 01:02:21:** capture the waste heat coming off of some of the
**01:02:21 --> 01:02:24:** sewer and other things to kind of pre warm the
**01:02:24 --> 01:02:28:** water and then electric. You know lead is kind of
**01:02:28 --> 01:02:29:** a no brainer.
**01:02:29 --> 01:02:32:** Similar to Ellen. We're doing induction ranges and we're educating

**01:02:32 --> 01:02:34:** people as part of that,
**01:02:34 --> 01:02:37:** but when we think about things like social justice and
**01:02:37 --> 01:02:37:** equity,
**01:02:37 --> 01:02:41:** kind of the the worst air quality component of any
**01:02:41 --> 01:02:44:** home is usually the gas range and they don't work
**01:02:44 --> 01:02:45:** very well.
**01:02:45 --> 01:02:48:** The those and how water heaters tend to have leakage
**01:02:48 --> 01:02:49:** of gas and they fail.
**01:02:49 --> 01:02:52:** But the other thing is when we look at gas
**01:02:52 --> 01:02:56:** ranges we think of the air quality or measure it.
**01:02:56 --> 01:02:59:** Assuming people used events and they don't really use events
**01:02:59 --> 01:03:02:** unless it's smoking and you think you're going to say
**01:03:02 --> 01:03:03:** you're smart climbs off,
**01:03:03 --> 01:03:06:** so there are starting to be some really important kind
**01:03:06 --> 01:03:09:** of air quality equity issues as we look at these
**01:03:09 --> 01:03:10:** conversions that point.
**01:03:13 --> 01:03:15:** So then we get to production and for all of
**01:03:15 --> 01:03:17:** our projects we do solar analysis.
**01:03:17 --> 01:03:20:** This is kind of an interesting one because we found
**01:03:20 --> 01:03:23:** that on that slide in the lower left hand side
**01:03:23 --> 01:03:25:** that was a SE facing wall,
**01:03:25 --> 01:03:26:** but it's not really good sign.
**01:03:26 --> 01:03:29:** And what happens is in Boulder it gets really good
**01:03:29 --> 01:03:32:** son early in the morning up until about noon or
**01:03:32 --> 01:03:34:** one where we lose this on east facing wall.
**01:03:34 --> 01:03:37:** But that's the best son of the day.
**01:03:37 --> 01:03:39:** So we ended up if you go to the next
**01:03:39 --> 01:03:42:** slide kind of looking at a little kind of draped
**01:03:42 --> 01:03:44:** solar side so we did all the.
**01:03:44 --> 01:03:46:** Roof as well as the vertical side.
**01:03:46 --> 01:03:49:** We go to the next slide.
**01:03:49 --> 01:03:53:** What that's done is you can't be utility here in
**01:03:53 --> 01:03:56:** the sense that I can't charge for power,
**01:03:56 --> 01:03:59:** but what I can do is include power as part
**01:03:59 --> 01:04:00:** of it,
**01:04:00 --> 01:04:03:** and what we found was if we were able to
**01:04:03 --> 01:04:07:** negotiate increased rents of a couple dollars of feet foot,
**01:04:07 --> 01:04:10:** which was about the cost of utilities in that area,
**01:04:10 --> 01:04:13:** we actually got a really good cash on cash return
**01:04:14 --> 01:04:16:** for solar before financing before tax credits.
**01:04:16 --> 01:04:20:** There are demand rates here in Colorado because of Excel.

**01:04:20 --> 01:04:23:** That anyone who goes over a certain level needs to
**01:04:23 --> 01:04:23:** pay,
**01:04:23 --> 01:04:26:** and so that reduces the return a little bit.
**01:04:26 --> 01:04:28:** But it's a pretty exciting way to start looking at
**01:04:28 --> 01:04:29:** solar next time.
**01:04:32 --> 01:04:34:** The other thing that you find is it's a little
**01:04:34 --> 01:04:38:** complicated to attach when you build a vertical solar wall,
**01:04:38 --> 01:04:40:** as we found out next slide,
**01:04:40 --> 01:04:43:** but you have to put something on a wall and
**01:04:43 --> 01:04:46:** so when you actually take away the cost of a
**01:04:46 --> 01:04:47:** brick walls,
**01:04:47 --> 01:04:50:** about $40 a square foot metal panel might be $30
**01:04:50 --> 01:04:51:** a square foot,
**01:04:51 --> 01:04:54:** and that it actually improves the return on investment because
**01:04:54 --> 01:04:56:** your siding it was something that spot.
**01:04:59 --> 01:05:01:** And then finally we start looking at operations.
**01:05:01 --> 01:05:04:** You know for us, plug loads are a really big
**01:05:04 --> 01:05:04:** thing.
**01:05:04 --> 01:05:07:** How much do people use with things they plug in
**01:05:07 --> 01:05:10:** an average plug load in an office building?
**01:05:10 --> 01:05:13:** It's about 22. Again, EU eyes,
**01:05:13 --> 01:05:15:** but forget the the details.
**01:05:15 --> 01:05:20:** It's 22, we needed people to consume more like 7
**01:05:20 --> 01:05:23:** so you really have to work on.
**01:05:23 --> 01:05:26:** How people use laptops. How people use monitors,
**01:05:26 --> 01:05:30:** how they do power strips with timers and sensors.
**01:05:30 --> 01:05:34:** All that is important. So it becomes an important part
**01:05:34 --> 01:05:36:** of how you design buildings,
**01:05:36 --> 01:05:38:** but it becomes more important in terms of how you
**01:05:38 --> 01:05:39:** manage with people.
**01:05:39 --> 01:05:44:** Next slide. So we've created a green lease for office.
**01:05:44 --> 01:05:47:** We're doing the same thing for residential.
**01:05:47 --> 01:05:50:** It has certain requirements, but it also gives certain incentives
**01:05:50 --> 01:05:50:** for tenants,
**01:05:50 --> 01:05:53:** and it allows people to kind of work together on
**01:05:53 --> 01:05:54:** that next time.
**01:05:57 --> 01:05:59:** So if you're a tenant,
**01:05:59 --> 01:06:01:** you know what you find is dependable,
**01:06:01 --> 01:06:05:** and energy costs you are part of a place that
**01:06:05 --> 01:06:07:** people are excited to work in.
**01:06:07 --> 01:06:12:** An increase productivity through everything from thermal

comfort to just
**01:06:12 --> 01:06:15:** perception and and it really has paid off for both
**01:06:15 --> 01:06:17:** us and our tenants next slide.
**01:06:20 --> 01:06:22:** We also look at renovating buildings,
**01:06:22 --> 01:06:24:** and that's gotten to be a big part of what
**01:06:24 --> 01:06:26:** we're starting to focus on,
**01:06:26 --> 01:06:28:** and so on. The renovation side.
**01:06:28 --> 01:06:29:** It's a little bit different,
**01:06:29 --> 01:06:30:** a little bit more difficult.
**01:06:30 --> 01:06:35:** Next slide. You know the problem with existing buildings is
**01:06:35 --> 01:06:39:** usually they don't have very good envelopes.
**01:06:39 --> 01:06:42:** Did you convert them to heat pump technology?
**01:06:42 --> 01:06:45:** It's really difficult sometimes to do with people in the
**01:06:45 --> 01:06:46:** space.
**01:06:46 --> 01:06:49:** Now, things like LED lighting or converting hot water is
**01:06:49 --> 01:06:50:** pretty easy,
**01:06:50 --> 01:06:53:** and honestly single family residential is a pretty straightforward conversion.
**01:06:53 --> 01:06:56:** It's something you can do over a weekend,
**01:06:56 --> 01:06:58:** whereas offices have to be done over.
**01:06:58 --> 01:07:02:** You know, sometimes weeks. It's not just a weekend project,
**01:07:02 --> 01:07:07:** but. So the issue that I see when we look
**01:07:07 --> 01:07:10:** at these conversions is again,
**01:07:10 --> 01:07:14:** a typical office might utilize 80 USD per square foot
**01:07:14 --> 01:07:14:** per year.
**01:07:14 --> 01:07:18:** We need to get it down into the 30 or
**01:07:18 --> 01:07:19:** 35.
**01:07:19 --> 01:07:22:** Range if we're going to make these conversions and not
**01:07:22 --> 01:07:25:** create kind of clogging on the grid and deal with
**01:07:25 --> 01:07:26:** peak load problems,
**01:07:26 --> 01:07:29:** so that's our big challenge in terms of conversion.
**01:07:29 --> 01:07:35:** Next slide. So on the envelope side,
**01:07:35 --> 01:07:37:** I think Windows are the key we were doing.
**01:07:37 --> 01:07:41:** Some studies with Sandyland, Sandia Labs and we were working
**01:07:41 --> 01:07:43:** on north facing windows in Colorado to kind of keep
**01:07:43 --> 01:07:44:** the heat in.
**01:07:44 --> 01:07:47:** We've also worked on some window inserts and conversions to
**01:07:48 --> 01:07:50:** keep the heat out and and windows are going to
**01:07:50 --> 01:07:52:** be really big part of it.
**01:07:52 --> 01:07:55:** There's also some new technology that you can use on
**01:07:55 --> 01:07:58:** the inside of walls and you really only lose about

**01:07:58 --> 01:08:00:** half an inch and you can add it and you
**01:08:00 --> 01:08:03:** can get some really good additional insulated values on walls.
**01:08:03 --> 01:08:06:** From the inside as part of it,
**01:08:06 --> 01:08:08:** and again as I said,
**01:08:08 --> 01:08:11:** it's pretty straightforward to convert water systems,
**01:08:11 --> 01:08:14:** LED lighting. It really comes down to converting the heating
**01:08:14 --> 01:08:16:** and cooling system,
**01:08:16 --> 01:08:19:** which is an issue in a fully occupied building where
**01:08:19 --> 01:08:23:** tenants have rights not to be disturbed next time.
**01:08:26 --> 01:08:29:** I think the other thing though is we have to
**01:08:29 --> 01:08:33:** remember that we get sometimes a little too technical on
**01:08:33 --> 01:08:37:** this and think of it as a process of electrification
**01:08:37 --> 01:08:41:** about EU eyes and about regulatory structure like this.
**01:08:41 --> 01:08:43:** Remember that buildings are really for people.
**01:08:43 --> 01:08:47:** People live in people working and people shopping and eating
**01:08:47 --> 01:08:51:** and and it's really this is another slide I stole
**01:08:51 --> 01:08:52:** from somebody.
**01:08:52 --> 01:08:56:** But what we're finding is that really good buildings they
**01:08:56 --> 01:08:57:** improve.
**01:08:57 --> 01:09:00:** The health of people. They improve productivity for companies.
**01:09:00 --> 01:09:03:** They improve the way that people work and relate to
**01:09:03 --> 01:09:07:** each other and and buildings are really just something to
**01:09:07 --> 01:09:09:** create a cover around people.
**01:09:09 --> 01:09:12:** And let's not forget that as we go through this
**01:09:12 --> 01:09:13:** whole process.
**01:09:17 --> 01:09:19:** So do we wait for cities to do it?
**01:09:19 --> 01:09:21:** And we do it ourselves.
**01:09:21 --> 01:09:22:** You know, as I said,
**01:09:22 --> 01:09:24:** we've done half a dozen.
**01:09:24 --> 01:09:26:** We have another half a dozen to go,
**01:09:26 --> 01:09:28:** and it's really a process of where we have to
**01:09:28 --> 01:09:29:** come together.
**01:09:29 --> 01:09:32:** And I think we could create some problems,
**01:09:32 --> 01:09:35:** some unintended consequences if we create a regulatory structure that
**01:09:35 --> 01:09:37:** landlords put off upgrades as long as possible.
**01:09:37 --> 01:09:39:** If we don't have the right incentives.
**01:09:39 --> 01:09:41:** If we don't realize the fact that tenants in buildings
**01:09:41 --> 01:09:42:** have rights,
**01:09:42 --> 01:09:45:** whether it's a residential building or an office building,

**01:09:45 --> 01:09:46:** residential converts a little bit easier.
**01:09:46 --> 01:09:48:** And there's more of a turnover.
**01:09:48 --> 01:09:50:** Office is a little bit more difficult,
**01:09:50 --> 01:09:53:** but we need to partner with cities and create some
**01:09:53 --> 01:09:54:** really great examples.
**01:09:54 --> 01:09:57:** Get great data and make sure that we know what
**01:09:57 --> 01:10:01:** we're doing and we understand the potential unintended consequences effects
**01:10:01 --> 01:10:01:** side.
**01:10:03 --> 01:10:05:** So where do we go from here?
**01:10:05 --> 01:10:09:** You know, just experiment. Take the things that we've done
**01:10:09 --> 01:10:10:** that work and do them again.
**01:10:10 --> 01:10:13:** And really, this isn't a question of should we do
**01:10:13 --> 01:10:13:** it?
**01:10:13 --> 01:10:16:** You know this is a can we do what we
**01:10:16 --> 01:10:17:** must?
**01:10:17 --> 01:10:18:** We don't have a choice.
**01:10:18 --> 01:10:20:** We're in the process of electrification,
**01:10:20 --> 01:10:22:** even British petroleum's in the process of electrification,
**01:10:22 --> 01:10:24:** so we should be realistic about that.
**01:10:24 --> 01:10:27:** And I was at a talk in Denver like a
**01:10:27 --> 01:10:28:** year ago,
**01:10:28 --> 01:10:30:** and I forget who actually said it.
**01:10:30 --> 01:10:33:** But if you go to the next slide.
**01:10:33 --> 01:10:36:** We were talking about these kinds of issues and we
**01:10:36 --> 01:10:39:** were saying the comment was this is a great opportunity
**01:10:40 --> 01:10:42:** disguised as an unstoppable problem,
**01:10:42 --> 01:10:45:** and I think that's where we are right now.
**01:10:45 --> 01:10:46:** This is a must do,
**01:10:46 --> 01:10:48:** and it's something that's inevitable.
**01:10:48 --> 01:10:50:** The question is really just how do we create an
**01:10:51 --> 01:10:54:** opportunity from this both economically and in terms of people's
**01:10:54 --> 01:10:56:** livelihoods and well being.
**01:10:56 --> 01:10:57:** So thank you very much.
**01:11:00 --> 01:11:02:** Thank you so much Andy.
**01:11:02 --> 01:11:04:** With that, we're going to start our Q&A.
**01:11:04 --> 01:11:07:** Come I'm going to turn it over to John Burgee
**01:11:07 --> 01:11:10:** who's the Chief Feldman officer of Urban Villages.
**01:11:10 --> 01:11:13:** And he's also the Co chair of you like Colorado,
**01:11:13 --> 01:11:16:** building Healthy Places Committee. And he's also on the energized
**01:11:16 --> 01:11:17:** Denver task Force.

**01:11:17 --> 01:11:20:** Uhm, so John will be moderating the Q&A from the
**01:11:20 --> 01:11:21:** chat box.
**01:11:21 --> 01:11:23:** So if you have questions for the panelists,
**01:11:23 --> 01:11:26:** please add them to the chat box and we'll try
**01:11:26 --> 01:11:28:** to address as many as we can.
**01:11:30 --> 01:11:32:** Alright thanks, Mary Ann and thank you to all of
**01:11:32 --> 01:11:35:** our speakers that was fascinating and I loved how you
**01:11:35 --> 01:11:37:** all talked about it from a different angle and so
**01:11:37 --> 01:11:39:** I think it was really robust to be able to
**01:11:39 --> 01:11:41:** have each of you present.
**01:11:41 --> 01:11:43:** So thank you. I'm going to go through and ask
**01:11:43 --> 01:11:46:** each of you one of the questions that were asked
**01:11:46 --> 01:11:48:** in the chat box and I will continue to monitor
**01:11:48 --> 01:11:50:** the chat box so anybody else that has extra questions,
**01:11:50 --> 01:11:53:** please ask them. I'd also ask if it feels comfortable
**01:11:53 --> 01:11:55:** with it to turn on your camera so we can
**01:11:55 --> 01:11:57:** have a little bit more of a dialogue with our
**01:11:57 --> 01:12:01:** guest speakers. Alright, so the first question is for Courtney
**01:12:02 --> 01:12:05:** Anderson in in order to achieve the long term goals
**01:12:05 --> 01:12:08:** that we've been talking about that you presented on,
**01:12:08 --> 01:12:11:** is there any risk of political change and future city
**01:12:11 --> 01:12:14:** officials undoing some of the work that you are doing
**01:12:14 --> 01:12:16:** that you're implementing today?
**01:12:18 --> 01:12:22:** That's a great question, so you know everything.
**01:12:22 --> 01:12:26:** Just go through this City Council process and.
**01:12:26 --> 01:12:30:** What really is critical before it gets to the City
**01:12:30 --> 01:12:33:** Council is it has the support of the community.
**01:12:33 --> 01:12:36:** So without the support of the Community it's it's hard
**01:12:36 --> 01:12:36:** to,
**01:12:36 --> 01:12:38:** you know, get something totally threw up,
**01:12:38 --> 01:12:40:** but once it once it,
**01:12:40 --> 01:12:43:** once it gets there and once City Council understands that
**01:12:43 --> 01:12:46:** this is what the vision is from the community,
**01:12:46 --> 01:12:48:** not just from city staff but for everybody,
**01:12:48 --> 01:12:50:** this is what we want.
**01:12:50 --> 01:12:52:** And if it gets past,
**01:12:52 --> 01:12:56:** it's already had that, you know that support behind it
**01:12:56 --> 01:12:57:** for so then.
**01:12:57 --> 01:12:59:** And then it becomes policy.
**01:12:59 --> 01:13:02:** So for someone to come in.
**01:13:02 --> 01:13:07:** I would find it a little difficult because the Community
**01:13:07 --> 01:13:09:** is already spoken up.

**01:13:09 --> 01:13:11:** So I think that's why we're really,
**01:13:11 --> 01:13:15:** uhm, we really work hard to make sure we're engaging
**01:13:15 --> 01:13:16:** our stakeholders,
**01:13:16 --> 01:13:20:** community participants, experts to really to build that vision.
**01:13:20 --> 01:13:22:** So it's not. I said this,
**01:13:22 --> 01:13:26:** and you know, my manager said the so it's no.
**01:13:26 --> 01:13:29:** This is what the the committee is looking
**01:13:29 --> 01:13:32:** for. Great thank you, Courtney.
**01:13:32 --> 01:13:34:** Next question is for Emily.
**01:13:34 --> 01:13:37:** You talked about how technology is leveling the playing field
**01:13:37 --> 01:13:39:** between fossil fuels and renewables.
**01:13:39 --> 01:13:42:** What are the areas you think will see the most
**01:13:42 --> 01:13:46:** change in technology over the coming decades?
**01:13:46 --> 01:13:47:** Right
**01:13:47 --> 01:13:48:** question? Uhm. Well
**01:13:48 --> 01:13:50:** I think. I mean I think the first the first
**01:13:50 --> 01:13:54:** pieces we're gonna see the technologies that already exist continue
**01:13:54 --> 01:13:57:** to improve and thus the costs come down.
**01:13:57 --> 01:13:59:** I mean I, I keep,
**01:13:59 --> 01:14:02:** I keep thinking of the heat pump example and perhaps
**01:14:02 --> 01:14:05:** the reason that my mind keeps going back there not
**01:14:05 --> 01:14:07:** only because of Courtney and Andy's presentations,
**01:14:07 --> 01:14:10:** but I just had to have my whole HV AC
**01:14:10 --> 01:14:13:** system replaced in my house yesterday.
**01:14:13 --> 01:14:14:** And and I live on.
**01:14:14 --> 01:14:17:** If anybody is familiar with the DC area.
**01:14:17 --> 01:14:20:** I live, I live in Arlington which is just outside
**01:14:20 --> 01:14:20:** DC.
**01:14:20 --> 01:14:22:** A lot of old homes.
**01:14:22 --> 01:14:25:** My home is very very very old and there's no
**01:14:25 --> 01:14:28:** duct work that was that was built with it initially.
**01:14:28 --> 01:14:30:** And so heat pumps are really really fantastic option.
**01:14:30 --> 01:14:33:** I mean, I'm I'm sitting in the lower level of
**01:14:33 --> 01:14:36:** my house and you know my husband can be upstairs
**01:14:36 --> 01:14:39:** two floors and we can have completely different temperatures and
**01:14:39 --> 01:14:42:** so I think I think that wasn't possible a few
**01:14:42 --> 01:14:45:** years ago and it certainly questions it wasn't possible.
**01:14:45 --> 01:14:48:** It was possible, but the costs are coming down.
**01:14:48 --> 01:14:51:** The logistics. Are much easier and the technology is getting
**01:14:51 --> 01:14:52:** much more widespread,

**01:14:52 --> 01:14:55:** so I think the first you know the first answer
**01:14:56 --> 01:14:59:** to that question really is you're going to see some
**01:14:59 --> 01:15:02:** of the technologies that were niche before.
**01:15:02 --> 01:15:06:** Be much more mainstream and and I think on top
**01:15:07 --> 01:15:07:** of that I.
**01:15:07 --> 01:15:11:** This is perhaps a little bit optimistic of me,
**01:15:11 --> 01:15:14:** but I'm gonna I'm gonna throw it out anyway.
**01:15:14 --> 01:15:18:** I I hope I think we're going to see some
**01:15:18 --> 01:15:21:** of the passive technologies at be more prevalent,
**01:15:21 --> 01:15:25:** and you know, when you there's some really cool net
**01:15:25 --> 01:15:29:** zero buildings across the country that have utilized passive technologies
**01:15:29 --> 01:15:33:** so you know passive technology being something as simple as
**01:15:33 --> 01:15:35:** operable windows that are, you know,
**01:15:35 --> 01:15:38:** situated at very strategic positions and and.
**01:15:38 --> 01:15:41:** Opening so that you can cool the building,
**01:15:41 --> 01:15:43:** cool or heat the building depending on the temperature.
**01:15:43 --> 01:15:45:** UM, by using that tech,
**01:15:45 --> 01:15:47:** not natural technology or that natural,
**01:15:47 --> 01:15:50:** those natural influences rather than having to lean on technology.
**01:15:50 --> 01:15:53:** And I wouldn't necessarily say that you know Earth tubing
**01:15:53 --> 01:15:56:** and you know East West Partners has some awesome stuff
**01:15:56 --> 01:15:56:** there.
**01:15:56 --> 01:15:58:** Wouldn't necessarily say if that's totally,
**01:15:58 --> 01:16:01:** totally passive. I don't know what the terminology would be,
**01:16:01 --> 01:16:03:** but I think technology is like that.
**01:16:03 --> 01:16:06:** That's a little bit more cohesive with the natural environment.
**01:16:06 --> 01:16:09:** I really hope that's where we're going to see.
**01:16:09 --> 01:16:10:** More, uh, more of a focus.
**01:16:10 --> 01:16:13:** I don't know if that will be something that we'll
**01:16:13 --> 01:16:14:** see in everybody's home,
**01:16:14 --> 01:16:15:** you know, in five years,
**01:16:15 --> 01:16:18:** but I think you know two things we're going to
**01:16:18 --> 01:16:20:** see the the technologies that are niche right now,
**01:16:20 --> 01:16:21:** and that are more expensive.
**01:16:21 --> 01:16:25:** Come down and then I think some of those passive
**01:16:25 --> 01:16:27:** technologies are going to be.
**01:16:27 --> 01:16:27:** Utilized more.
**01:16:29 --> 01:16:32:** Great, thank you. It's been fun to see how much
**01:16:32 --> 01:16:35:** the technology has changed over the last decade,
**01:16:35 --> 01:16:37:** so hopefully that momentum keeps up.

**01:16:37 --> 01:16:39:** Next question is, for Alan,
**01:16:39 --> 01:16:42:** a lot of comments about how beautiful electric pass as
**01:16:42 --> 01:16:45:** a building is one of the questions was what was
**01:16:45 --> 01:16:49:** embodied carbon emissions considered when materials were selected to create
**01:16:49 --> 01:16:50:** the structure.
**01:16:52 --> 01:16:56:** So yeah, we did not study embodied carbon for this
**01:16:56 --> 01:16:57:** building,
**01:16:57 --> 01:17:01:** and but when I said in our next building,
**01:17:01 --> 01:17:05:** we're exploring sort of even more enhanced initiatives.
**01:17:05 --> 01:17:11:** We are exploring CLT as our primary structure.
**01:17:11 --> 01:17:13:** And that obviously has embodied carbon benefits.
**01:17:13 --> 01:17:16:** We also, though these are high-rise buildings,
**01:17:16 --> 01:17:21:** so and the building code here in Snowmass hasn't caught
**01:17:21 --> 01:17:24:** up to some of the things that you see in
**01:17:24 --> 01:17:28:** Denver that allow for CLT in a high rise application.
**01:17:28 --> 01:17:32:** But we have worked with the fire department and so
**01:17:32 --> 01:17:36:** we're able to potentially explore that here for our next
**01:17:36 --> 01:17:36:** building,
**01:17:36 --> 01:17:40:** and that's just obviously a portion of embodied carbon,
**01:17:40 --> 01:17:43:** but. Giving us a little bit down that that path.
**01:17:44 --> 01:17:48:** Thanks, I love the branding and how you brought it
**01:17:48 --> 01:17:50:** into such a big part of the sales of the
**01:17:50 --> 01:17:51:** units.
**01:17:51 --> 01:17:54:** I'm curious if you think that it obviously resonated and
**01:17:54 --> 01:17:57:** asked in a market like Aspen and Snowmass does that
**01:17:57 --> 01:17:58:** same type of branding?
**01:17:58 --> 01:18:01:** Do you think resonate in other markets that are maybe
**01:18:01 --> 01:18:03:** not be as high end luxury markets?
**01:18:05 --> 01:18:07:** Uhm, you know, I think so.
**01:18:07 --> 01:18:11:** We we also we had some concerns about going heavy.
**01:18:11 --> 01:18:14:** You know, in the all electric branding,
**01:18:14 --> 01:18:17:** because we have a huge Texas contingency here.
**01:18:17 --> 01:18:19:** And you know, I mean not to say that there
**01:18:19 --> 01:18:23:** aren't people there that really like appreciate this type of
**01:18:23 --> 01:18:25:** responsible development.
**01:18:25 --> 01:18:28:** But it's probably not for some of those buyers their
**01:18:28 --> 01:18:29:** top priority.
**01:18:29 --> 01:18:33:** I think one thing that made it successful here was
**01:18:33 --> 01:18:36:** we were at the right intersection of.
**01:18:36 --> 01:18:40:** Uhm, sort of. Uh, the market and price point,
**01:18:40 --> 01:18:43:** and sort of where we were trying to land and

**01:18:43 --> 01:18:45:** so I think we hit a market in terms of
**01:18:45 --> 01:18:47:** the product that you know.
**01:18:47 --> 01:18:50:** I mean, you can sell a lot of things in
**01:18:50 --> 01:18:52:** a really good market and you know,
**01:18:52 --> 01:18:54:** we've we've definitely had people who have.
**01:18:54 --> 01:18:57:** We had a person that made a reservation only so
**01:18:57 --> 01:19:01:** that they could tell us that the future of buildings
**01:19:01 --> 01:19:03:** is gas and so that they could have like a
**01:19:03 --> 01:19:06:** venue to do so. But I think it really has
**01:19:06 --> 01:19:07:** resonated with buyers from,
**01:19:07 --> 01:19:10:** you know, from all over and.
**01:19:10 --> 01:19:12:** We're definitely interested. I mean,
**01:19:12 --> 01:19:16:** our next project will be even more luxury than this
**01:19:16 --> 01:19:17:** and that,
**01:19:17 --> 01:19:20:** to me, seems like a bigger potential stretch.
**01:19:20 --> 01:19:24:** Just you know, people used to their gas fireplaces and
**01:19:24 --> 01:19:25:** things like that,
**01:19:25 --> 01:19:27:** but so far it's been,
**01:19:27 --> 01:19:31:** you know, really good feedback on the marketing side.
**01:19:31 --> 01:19:35:** Yeah I would. I would imagine gas ranges and gas
**01:19:35 --> 01:19:39:** fireplaces would probably be some of the more difficult ones
**01:19:39 --> 01:19:40:** to get
**01:19:40 --> 01:19:43:** buyers around and we've actually had the most questions about
**01:19:43 --> 01:19:44:** you.
**01:19:44 --> 01:19:46:** We've had very few questions about that,
**01:19:46 --> 01:19:51:** but we've had the most questions just about the cooling
**01:19:51 --> 01:19:54:** passive cooling and earth tube in the RV's.
**01:19:54 --> 01:19:55:** Alright,
**01:19:55 --> 01:19:59:** thank you on next question is for Andy.
**01:19:59 --> 01:20:02:** Have you had any difficult difficulty financing both from debt
**01:20:02 --> 01:20:03:** and equity?
**01:20:03 --> 01:20:06:** Your portfolio as you move towards all electric and start
**01:20:06 --> 01:20:09:** to implement a lot of these technologies that maybe are
**01:20:09 --> 01:20:11:** a little less widespread,
**01:20:11 --> 01:20:13:** less known. Yeah,
**01:20:13 --> 01:20:16:** I mean, I was honestly pretty frightened about it two
**01:20:16 --> 01:20:18:** or three years ago,
**01:20:18 --> 01:20:21:** and what we've actually found is there's competition for it.
**01:20:21 --> 01:20:24:** I'm guardian. Life Insurance Company has been one of our
**01:20:24 --> 01:20:28:** bigger lenders and what we're finding is lenders wanna high
**01:20:28 --> 01:20:31:** performance portfolio and I think I used to think the

**01:20:31 --> 01:20:34:** change in this industry was going to come from little
**01:20:34 --> 01:20:37:** people on the fringes like us and I think the
**01:20:37 --> 01:20:41:** change is really going to come from institutional lenders and
**01:20:41 --> 01:20:44:** developers who are. Focused on ESG requirements and who also
**01:20:44 --> 01:20:47:** look at the fact that I just had a conversation
**01:20:47 --> 01:20:50:** with Guardian last week and so it's kind of fresh
**01:20:50 --> 01:20:52:** in my mind. We have a 12 year loan.
**01:20:52 --> 01:20:56:** It's a construction firm and they were saying we used
**01:20:56 --> 01:20:59:** to not think about the value of a building at
**01:20:59 --> 01:21:01:** the end of that 12 years and who was going
**01:21:01 --> 01:21:04:** to refinance it and whether there was a risk at
**01:21:04 --> 01:21:07:** the end of the term for us and all of
**01:21:07 --> 01:21:09:** a sudden 12 years from now,
**01:21:09 --> 01:21:12:** it's starting to be a little frightening for lenders to
**01:21:12 --> 01:21:13:** think about a fossil fuel.
**01:21:13 --> 01:21:16:** Our building versus an all electric building,
**01:21:16 --> 01:21:19:** so I think we're at this really interesting kind of
**01:21:19 --> 01:21:21:** cusp of change in the lending world.
**01:21:21 --> 01:21:25:** In the institutional world where you can already see institutional
**01:21:25 --> 01:21:27:** owners and lenders kind of day,
**01:21:27 --> 01:21:30:** risking from a resiliency and environmental risk from floods and
**01:21:30 --> 01:21:31:** hurricanes,
**01:21:31 --> 01:21:33:** I think you start to see the same thing in
**01:21:33 --> 01:21:37:** terms of buildings that are fossil fuel powered.
**01:21:37 --> 01:21:40:** It's going to happen over the next 5 to 10
**01:21:40 --> 01:21:40:** years.
**01:21:42 --> 01:21:44:** That's me, that's music to my ears,
**01:21:44 --> 01:21:47:** and probably most of us on the call,
**01:21:47 --> 01:21:50:** you know, ESG investing was something that was of lesser
**01:21:50 --> 01:21:52:** known and even a couple of years ago.
**01:21:52 --> 01:21:55:** Can you explain that nomenclature and and why?
**01:21:55 --> 01:21:56:** Potentially there are more investors,
**01:21:56 --> 01:21:59:** more lenders that are focused on it.
**01:22:00 --> 01:22:01:** Yeah, I think
**01:22:01 --> 01:22:04:** I mean I've been around long enough to have conversations
**01:22:04 --> 01:22:07:** with lenders where as we talked about solar panels,
**01:22:07 --> 01:22:09:** or you know an electric building.
**01:22:09 --> 01:22:11:** They were pretty frightened about it.
**01:22:11 --> 01:22:14:** I think that investors now have,
**01:22:14 --> 01:22:17:** you know, environmental and social responsibilities and

goals as part
**01:22:17 --> 01:22:18:** of their investing portfolios,
**01:22:18 --> 01:22:21:** so they have a requirement to do that the same
**01:22:21 --> 01:22:25:** way that utilities have a requirement to start converting certain
**01:22:25 --> 01:22:27:** percentages to clean power.
**01:22:27 --> 01:22:30:** So these are kind of the under the hood.
**01:22:30 --> 01:22:33:** Things that are happening in the institutional world.
**01:22:33 --> 01:22:36:** And then I think you also see institutional investors.
**01:22:36 --> 01:22:39:** There's a fear factor. One side is the good to
**01:22:39 --> 01:22:40:** do good factor.
**01:22:40 --> 01:22:43:** The other side is what if we get holding the
**01:22:43 --> 01:22:46:** bag on a lot of buildings that are impacted by
**01:22:46 --> 01:22:48:** hurricanes or sea level change.
**01:22:48 --> 01:22:51:** So there's both positive and negative forces that are impacting
**01:22:51 --> 01:22:54:** both institutional lenders and institutional investors.
**01:22:54 --> 01:22:55:** And and as I said,
**01:22:55 --> 01:22:59:** I used to think you know change would come from
**01:22:59 --> 01:22:59:** the fringe,
**01:22:59 --> 01:23:01:** but the big change. I think it's going to come
**01:23:01 --> 01:23:03:** from the center here in the next 10 years.
**01:23:05 --> 01:23:08:** Very encouraging. Thank you. I'm gonna go back to Courtney
**01:23:08 --> 01:23:08:** now.
**01:23:08 --> 01:23:11:** Courtney, as as you are implementing the cities implementing these
**01:23:11 --> 01:23:12:** different programs,
**01:23:12 --> 01:23:16:** how are you ensuring that the real estate industry and
**01:23:16 --> 01:23:19:** other various experts are being consulted and so that the
**01:23:19 --> 01:23:22:** policies are are well set up for success?
**01:23:23 --> 01:23:27:** Yeah, that's a great question and I don't need to
**01:23:27 --> 01:23:30:** repeat myself from my first answer.
**01:23:30 --> 01:23:34:** UM, but really we have a lot of stakeholder engagement.
**01:23:34 --> 01:23:38:** UM, for making sure there's really everybody that that cares
**01:23:38 --> 01:23:42:** about this or so affected by this is has the
**01:23:42 --> 01:23:44:** ability to be on these task force.
**01:23:44 --> 01:23:48:** You know, John sound like you just came from the
**01:23:48 --> 01:23:50:** energize Denver task force,
**01:23:50 --> 01:23:54:** so you're pretty familiar with that involvement level.
**01:23:54 --> 01:23:56:** But really, before we develop policy,
**01:23:56 --> 01:23:59:** even as we're going through the code adoption process,
**01:23:59 --> 01:24:03:** we are asking everybody and anyone that wants to

participate
**01:24:03 --> 01:24:06:** in the working groups to come and give us their
**01:24:06 --> 01:24:07:** ideas,
**01:24:07 --> 01:24:10:** you know, or their ideas that let us know what
**01:24:10 --> 01:24:13:** ideas you don't like and we're reaching out to all
**01:24:13 --> 01:24:17:** communities that we can really have like an equity focus.
**01:24:17 --> 01:24:21:** So every every step of the way we're using a
**01:24:21 --> 01:24:23:** racial equity loan fund.
**01:24:23 --> 01:24:28:** And and evaluating it from really every perspective that that
**01:24:28 --> 01:24:31:** we can bring in the people to help guide us
**01:24:31 --> 01:24:32:** do that,
**01:24:32 --> 01:24:34:** but from the stakeholder standpoint,
**01:24:34 --> 01:24:37:** yeah, everyone has an opportunity to be involved and we
**01:24:37 --> 01:24:38:** always encourage that.
**01:24:38 --> 01:24:43:** And the more support we get from.
**01:24:43 --> 01:24:46:** From everyone, I mean we're heavily involved with working with
**01:24:46 --> 01:24:47:** XLS well,
**01:24:47 --> 01:24:50:** so we're not just developing policy and hoping that they
**01:24:50 --> 01:24:51:** come along with us.
**01:24:51 --> 01:24:54:** It's really, you know, it's not just a two way
**01:24:55 --> 01:24:55:** St.
**01:24:55 --> 01:24:57:** It's like a 1001 St so.
**01:24:59 --> 01:25:02:** Yeah, thanks Cortana and I will confer or agree with
**01:25:02 --> 01:25:02:** you.
**01:25:02 --> 01:25:05:** I think that it's been incredible to see how actively
**01:25:05 --> 01:25:08:** the city has really been reaching out to various stakeholders
**01:25:09 --> 01:25:12:** and experts in different fields just to continue to make
**01:25:12 --> 01:25:16:** sure that the policies are implementable and that they try
**01:25:16 --> 01:25:19:** to understand how the market will respond to it.
**01:25:19 --> 01:25:22:** Question for Emily, how do you address energy resiliency?
**01:25:22 --> 01:25:26:** We see you know the power outages in Texas and
**01:25:26 --> 01:25:29:** in various things as we move to fully electric.
**01:25:29 --> 01:25:33:** How do you address that when you're going to 1
**01:25:33 --> 01:25:35:** energy source?
**01:25:35 --> 01:25:35:** Yeah,
**01:25:35 --> 01:25:37:** it's it's $1,000,000 question right now.
**01:25:37 --> 01:25:40:** Uh, we actually do. Have we have a break out
**01:25:40 --> 01:25:44:** a piece in the report that I would definitely encourage.
**01:25:44 --> 01:25:47:** Encourage whoever asked this question to go and and read
**01:25:47 --> 01:25:49:** in more depth that I can do.
**01:25:49 --> 01:25:51:** And you know 60 seconds here.

**01:25:51 --> 01:25:53:** But you know right now,
**01:25:53 --> 01:25:54:** utility infrastructure is, you know,
**01:25:54 --> 01:25:57:** a serious consideration. I don't know that it's a real
**01:25:58 --> 01:25:59:** estate problem to solve,
**01:25:59 --> 01:26:02:** it's it's not a real estate problem to solve.
**01:26:02 --> 01:26:05:** It's a real estate problem to be aware to be
**01:26:05 --> 01:26:06:** Cognizant.
**01:26:06 --> 01:26:08:** Of you know where the potential breakdown is and you
**01:26:09 --> 01:26:11:** know electric utilities are not are not risky.
**01:26:11 --> 01:26:14:** You know you don't need to be concerned as a
**01:26:14 --> 01:26:16:** real estate practitioner for or you know,
**01:26:16 --> 01:26:19:** hooking your building up to an electric utility.
**01:26:19 --> 01:26:21:** That's not, you know, we're we're many,
**01:26:21 --> 01:26:22:** many, many decades past that,
**01:26:22 --> 01:26:24:** and so as far as you know,
**01:26:24 --> 01:26:27:** the utility perspective. I think it's just a matter of
**01:26:27 --> 01:26:30:** being Cognizant right now and and you know,
**01:26:30 --> 01:26:33:** being aware of your building and engaging in a conversation
**01:26:33 --> 01:26:34:** with the utility.
**01:26:34 --> 01:26:37:** Unfortunately, I know it's a little bit of a cop
**01:26:37 --> 01:26:37:** out.
**01:26:37 --> 01:26:39:** Answer, But I think it's.
**01:26:39 --> 01:26:42:** You know, not not a real estate problem to tackle,
**01:26:42 --> 01:26:43:** just quite yet.
**01:26:45 --> 01:26:46:** Yeah, great thank you. I will.
**01:26:46 --> 01:26:49:** I know we are running out of time or we
**01:26:49 --> 01:26:50:** are out of time.
**01:26:50 --> 01:26:52:** One of the questions that was asked is can we
**01:26:52 --> 01:26:54:** get the speakers contact information.
**01:26:54 --> 01:26:56:** So I would suggest maybe that Mary Ann or somebody
**01:26:57 --> 01:26:59:** can maybe send out your all contact information if you're
**01:26:59 --> 01:27:02:** OK with it to the attendees rather than trying to
**01:27:02 --> 01:27:04:** put in the chat box right now.
**01:27:07 --> 01:27:11:** Will share the recording and will circulate with the panelists
**01:27:11 --> 01:27:13:** later to see if they're comfortable with that.
**01:27:18 --> 01:27:19:** Alright, I'll hand it back to you.
**01:27:19 --> 01:27:20:** Mary
**01:27:20 --> 01:27:22:** Ann great well, thank you so much before you all
**01:27:22 --> 01:27:23:** leave.
**01:27:23 --> 01:27:25:** I wanted to play ellens video if you have to
**01:27:25 --> 01:27:26:** jump off.
**01:27:26 --> 01:27:28:** Thank you so much for joining us today.

**01:27:28 --> 01:27:31:** But if you can say for I think the video
**01:27:31 --> 01:27:33:** is only a couple minutes raelyn if you can stay
**01:27:33 --> 01:27:34:** for this.
**01:27:34 --> 01:27:35:** Yeah I think it's
**01:27:35 --> 01:27:37:** like a minute and a half great.
**01:27:37 --> 01:27:37:** OK,
**01:27:37 --> 01:27:39:** well I'll go ahead and play it.
**01:27:47 --> 01:27:49:** I don't hear the volume though.
**01:27:59 --> 01:28:03:** Did you know that inefficient buildings powered by fossil fuels,
**01:28:03 --> 01:28:06:** including szumski homes, contribute up to 40%
**01:28:06 --> 01:28:11:** of the carbon emissions that are causing climate change and
**01:28:11 --> 01:28:12:** shrinking our winters,
**01:28:12 --> 01:28:17:** but not this one? Electric Pass Lodge is powered by
**01:28:17 --> 01:28:17:** 100%
**01:28:17 --> 01:28:21:** renewable electricity with no ongoing carbon footprint.
**01:28:21 --> 01:28:27:** We started by orienting the building to maximize solar exposure.
**01:28:27 --> 01:28:31:** Then we designed an incredibly efficient shell with state of
**01:28:31 --> 01:28:32:** the art insulation,
**01:28:32 --> 01:28:38:** triple pane windows and phase change material that traps heat
**01:28:38 --> 01:28:41:** or cold to use it when you need it.
**01:28:41 --> 01:28:46:** Everything in the building runs on electricity through a combination
**01:28:46 --> 01:28:49:** of rooftop solar and off site renewable power.
**01:28:49 --> 01:28:53:** It's an extremely healthy building for the planet and for
**01:28:53 --> 01:28:54:** you,
**01:28:54 --> 01:28:58:** thanks to plenty of natural light and operable windows.
**01:28:58 --> 01:29:02:** No toxic materials, no gas being burned inside the home,
**01:29:02 --> 01:29:04:** and our continuous airflow system,
**01:29:04 --> 01:29:09:** which circulates fresh air throughout each residence which is preheated
**01:29:09 --> 01:29:11:** or precooled by a series of.
**01:29:11 --> 01:29:16:** Underground earth tubes. It's a ski home.
**01:29:16 --> 01:29:20:** You can feel good about owning that's doing everything in
**01:29:20 --> 01:29:23:** its power to protect the snow you love to play
**01:29:23 --> 01:29:23:** on.
**01:29:23 --> 01:29:27:** The future is here at Electric Pass Lodge.
**01:29:27 --> 01:29:30:** Pure responsible mountain living for your family.
**01:29:42 --> 01:29:44:** With that I would just like to thank all of
**01:29:44 --> 01:29:46:** you for participating in the event today and a huge
**01:29:46 --> 01:29:50:** thank you to our panelists for these excellent presentations,

**01:29:50 --> 01:29:52:** which we hope to share after the event via recording
**01:29:52 --> 01:29:54:** and then also with the slides.
**01:29:54 --> 01:29:57:** With that, I'll turn it over to my boss,
**01:29:57 --> 01:29:57:** Michael.
**01:30:00 --> 01:30:03:** Just adding my thanks. It was an excellent program.
**01:30:03 --> 01:30:05:** He got some of the best people in ULIA on
**01:30:05 --> 01:30:07:** our panel and fantastic information.
**01:30:07 --> 01:30:11:** So please catch up with the recording if you couldn't
**01:30:11 --> 01:30:14:** catch the whole session and we will see you at
**01:30:14 --> 01:30:16:** one of our live events very soon.
**01:30:16 --> 01:30:19:** And thank you Maryann for organizing a great program.
**01:30:20 --> 01:30:23:** Thank you guys, hope you have a great evening and
**01:30:23 --> 01:30:24:** will see you soon.
**01:30:24 --> 01:30:24:** Yeah,
**01:30:24 --> 01:30:25:** thank you.
**01:30:27 --> 01:30:27:** Thank you.

---

*This video transcript has been machine-generated, so it may not be accurate. It is for personal use only. Reproduction or use without written permission is prohibited. If you have a correction or for permission inquiries, please contact [email protected].*