Title Card

And now, let's begin our program.

Welcome to this episode of timely topics and educational program of Lotus network Lotus network believes it's never too late to rediscover your potential and make the next chapter of your life, the very best.

And now, here's your host.

Terry Rubin

Good afternoon everyone. Hi everybody I'm Terry Rubin and Happy New Year to you all. I am truly happy to see so many returning attendees this afternoon, and thrilled to welcome some new faces to Lotus network thank you all for zooming in and making time in your busy schedules for this virtual program.

So, making small changes to help our environment and to learn to be more eco-friendly and to live more sustainably and understanding that it really is never too late for us to go green is the topic of today's conversation. And to help us understand the bigger why and the how to, there was one person who stood out in a big way.

Sara Gutterman is our featured guest speaker and it is my distinct privilege, honor, an absolute pleasure to introduce her to you, Sara is the co-founder and CEO of green builder media, the nation's leading media company focused on sustainable living. She is a former venture capitalist and has participated in a portion of the life cycle like from funding to exit of over companies.

But let me back up just for a moment and tell you a little something about this most remarkable woman. Sara was born in Colorado and decided to young age that she wanted to dedicate her professional career to protecting the environment, and as a Colorado native Sara has always had a strong connection with nature.

After attending Dartmouth College in New Hampshire she returned to Colorado, to start her first business and to pursue see boulders MBA program to support your future career. She completed her program with an MBA in entrepreneurship and finance. And while attending CU Boulder, Sara worked at a local venture capitalist firm where she watched the organic food industry grow into the success that it is today.

Sara left that venture capitalist firm and then took time to explore her other passions like meditation and yoga hiking and snowboarding. And she found that her experience and venture capital helped her to understand how to create companies that are simultaneously sustainable and profitable.

Sara is a true visionary thought leader, a passionate advocate for sustainability, her company rebuilder media is dedicated to building a better world through environmentally safe housing technology communication and she works closely with a diverse group of stakeholders in the building industry to develop impactful long term green strategies.

In today's vital presentation, Sara will share her experience as a leader and entrepreneur and will share with us how to start living a greener life. Sara lives in beautiful Lake City with her husband and where she's an avid long distance runners snowboarder, and CrossFit trainer.

And on a personal note, when I first met Sara many years ago. I knew I had just met an old soul that was spirit. Sara is the calm in the storm. She is an incredibly kind and compassionate human. She is the wonderful Daughter of our community friend and the Apple has not fallen far from the tree. She's a loving sister to Steve Gutterman. She's as a friend to many and I luckily and gratefully count her as a friend to me, and of Lotus network.

Please welcome Sara Gutterman.

Sara Gutterman

Wow, Terry, thank you so much what a wonderful introduction and please know that the sentiment is mutual. I think that we all can affirm that you are a hero to many of us showing us how to live with grace, and joy, dedication, and passion.

So thank you, thank you also to Leslie, and Lisa, and all of the other lovely ladies who facilitate Lotus network, I am honored that you asked me to present today. Thank you also to everyone in attendance Your time is precious and I really appreciate the fact that you've chosen to spend some of it here with me today. Hi, Mom. Hi dad Nancy Susan, and all of our family friends that are here Sharon JC Jill any, all of you. Thank you. Really appreciate your support.

I'm going to go ahead and dive in, I have a lot to cover. So, as Terry and those of you who have attended some of my presentations I have this nasty habit of running wrong but I really try not to today as Terry mentioned, I co-founded Green Builder Media years ago with my husband with a specific goal of enhancing the sustainability of the built environment. And when we first started, I have to admit we were really quite ahead of our time and we have pushed a big boulder uphill for a long time and fortunately after a lot of blood sweat and tears. We not only have become North America's leading media company focused on green building and sustainable living but more importantly, the market I think has really caught up, and there's so much momentum right now for sustainable living but you know I think something that I want to start off with is that I knew this when we founded the company and this has remained true throughout our entire journey and perhaps it's more poignant today than ever.

And it's the fact that green building and sustainable living is really a metaphor. It represents self-actualization, a pathway to enlightenment, if you will, because it's a perpetual aspiration to be better to do better to be kinder and more compassionate and to live with a lighter footprint.

And just like the butterfly who flutters its wings and changes the course of jet streams, each decision that we make has an impact on the environment around us and once we understand that and once we recognize the power of our own decisions. Once we get to a place where we're conscious and able enough to make decisions not just for ourselves, but to protect the planet and our children's and our grandchildren's future. That's when we as individuals, and we collectively can truly live sustainably.

So that's really the kind of thought that I want to start this with I'm going to share my screen now. All right, fantastic. So, I am going to go ahead and dive in and let's just frame the conversation right so why is the information that I'm going to share today important, why should you care about living sustainably you're going green, and the real answer is, and I think we all know this is that we are in a climate emergency right so I base a lot of my information and data on the United Nations, the scientific reports that they issue that our collaborations of scientists around the globe, and the humans most recent report issued a really Stark warning that climate change unequivocally here. And the worst is yet to come.

If you haven't read the report here's pretty much what you missed scientists from around the globe confirm that human and carbon dioxide emissions are the main driver of intensifying climate change, and we need a full-scale elimination of all greenhouse gas emissions, to keep global warming under two degrees Celsius, ideally under 1.5 degrees. And the reason why that's important is because if we surpass that threshold, we will encounter irreversible impacts that will lead to widespread species extinction, and ecosystem collapse. And that's the good news, right, because as the planet warms we can expect even more extreme temperatures rising sea levels intense super storms extensive flooding severe drought raging wildfires certainly we're all thinking about our friends in Boulder County, after their terrible wildfire recently and climate change will really fundamentally reshaped life on Earth in the coming decades, even if we don't do anything.

Well, especially if we don't do anything but even if we curb, our fossil fuel addiction immediately. We're still going to see impact on ecosystems and habitats oceans forests and you know it's really important to understand that at our current trajectory we're expected to surpass that's two degrees Celsius threshold within a shockingly short, five years, five years. So, think about the impact of that on your children and your grandchildren in the future that they are going to have and that's why it's so so important that we make good decisions. Today, and immediately starting right now full stop. In order to address this climate emergency.

So that's daunting, I get it.

So let's talk about the solution right because the truth is that there is a pathway to get to what we're calling now full-scale decarbonization right so it's the full-scale elimination of carbon emissions. And this is something that we in the sustainability world are calling the transition to the decarbonization economy, which will effectively require a complete overhaul of our socioeconomic system.

So on one hand it's kind of scary. On the other hand, we have this rare and thrilling opportunity to redesign our economy at a scale and a scope that really equals the transformation brought about by the Industrial Revolution, I mean that is how dramatic.

This entire transformation is, and again it's going to be scary for some namely those who are clinging to antiquated business models and obsolete energy sources and outdated technologies, they will fight they will attack they will fashion, every conceivable obstacle possible to impede progress, but just as earlier naysayers couldn't suppress adoption of breakthrough innovations like, oh, indoor plumbing and the incandescent light bulb, or the combustion engine really you know any efforts to hinder progress will be few tile and then the good news is that everybody gets to reap the rewards as our world evolves into a cleaner and greater greener and better version of itself right so

we will all enjoy clean air and freshwater and fertile soil and protected species and vibrant ecosystems, the roadmap to getting to decarbonization is actually pretty clear. We know how to get there, we have technologies they are off the shelf they are here today.

It's driving renewable energy adoption electrifying transportation so if you're thinking about buying a new vehicle. Go EV period, full stop no questions do not pass go because the charging infrastructure and the range which were the two things that have historically prohibited ease from growing those problems are either already solved or being solved very quickly.

We also need to reimagine industry and manufacturing primarily in high intensity sectors like cement steel chemicals and paper. We need to transition our homes to net zero and all electric and then we need to also reform our agricultural practices and land use practices. I could do a whole hour on that strategy and roadmap, I won't I'll keep going.

And there's a lot of exciting things right now happening with respect to innovative technologies and transportation. I'm just going to touch on this briefly. But suffice to say we're going to see a lot in terms of the development of the Internet of Things and artificial intelligence.

Basically, enabling intelligent devices to remotely manage everything from manufacturing to building operations to vehicle fleets and power grids, with the goal of optimizing resource efficiency.

We are going to start seeing the electrification of everything, vehicles buildings the grid itself, etc. And part of what's facilitating that is not only like EV charging technology and, but it's really the advances in battery storage, and also things like vehicle to grid technologies, and then everything our homes our buildings our communities will soon become what's called mini micro grids. Basically, they'll become virtual power plants and they will produce and store and harvest and monitor their own energy. So that not only gives us energy redundancy and resiliency, but it also gives us the opportunity to protect ourselves when there are things like wildfires, or storms that take out power. So we'll have, we'll be able to maintain that source of power rather than having brownouts and blackouts.

We're also seeing some really exciting things happen in what's called carbon tech, or sometimes this is called climate tech and I'm just mentioning this because it's really exciting and something worth keeping your eye on and basically companies are getting really creative about taking carbon out of the air and either using fans to filter it and put the carbon back into the earth, or into liquid or even into products so there's a company that we really liked called carbon care which basically takes carbon out of the air and injects it into a cement mix, which makes a more durable and actually a harder concrete, and what as we all know concrete is used everywhere in roads and bridges and infrastructure in foundations and in buildings.

So we're really watching this sector of carbon tag or climate tech and the innovations, there's a lot of government incentives and venture capital investment in this area.

But perhaps the most exciting thing of this category and again just worth noting is that as we turn carbon and other greenhouse gas emissions into a valuable input that can be priced. All of a sudden it changes the equation from carbon as a wasteful and harmful output, right a harmful greenhouse gas to carbon as a valuable input that all of a sudden people can buy and sell. And so

it totally changes the dynamics and the valuation metric and transforms our way of thinking of co is a harmful planet eating gas to a valuable resource.

So those are just some of the, the innovations that we're watching. And part of the momentum that I mentioned.

And my mom told me to put this in so thanks mom. But she thought it would be interesting to everybody. Part of kind of the market transformation and the paradigm shift that we're seeing is because of millennials, so millennials will comprise about 75% of the workforce by 2025, that's like tomorrow.

And in my space and the housing sector millennials and older Gen Zs have seized the top influencer position. So, they're buying and remodeling homes more than any other generation spending more money on buying and remodeling than any other audience segment, and fortunately for my cause living more sustainably this audience segment, they have an inherent ethic of sustainability they're very passionate about climate action and they're really driving the bus right now in terms of, you know, creating a sea change in the sector. And that's because millennials I'm a Gen Z but I say that I'm a millennial want to be just because I love the passion I love the values of the millennial audience segment, because they're very mission driven, they really place purpose over paycheck I think those of you who are millennials or parents or grandparents to millennials and older Gan Zs you see this many people in that group are going shifting to plant-based diets or creating zero carbon budgets.

They like to garden I like to spend time outside and, and that is really creating this paradigm shift and what it's doing is it's pushing sustainability, to the forefront within the corporate sector. And in response to this mounting consumer interest. corporations of all kinds across our entire sector have really entered into a fierce competition to become the sustainability leaders in their section, their sectors like pledging to become net neutral, with respect to energy and water and emissions in the next decade. And it’s really created a moral imperative for what we call SG or environmental, social and governance practices that's kind of the new buzzword in corporate America, and that's a good thing, actually my favorite example by the way is Microsoft, who is not only pledge to become net carbon positive by 2030 but also to actually offset and sequester all of the carbon emissions that the company has put into the atmosphere since its inception that's pretty cool. I'm showing a graph here that comes from cognition smart data which is green builder media suite of market intelligence and data services patterns.

This happens to be a recent survey that we did of millennials, and as you can see nearly 50% said their number one consideration when selecting products for their home is corporate sustainability carbon footprint, and then EP DS which is environmental product declarations which shows the impact of a particular product. I will tell you that has never been the number one response we've been asking this question for nearly 17 years of our consumer audience. And the number one response for our audience because we reach early adopters and first movers has always been quality and performance cost has been less of a factor it's usually been quality and performance and then some aspect of sustainability so this is a new response again worth sharing just showing the new ethic. That's really driving sustainability in the marketplace.

Now, I'd like to turn to sustainability at home and really the reason why we're here today. So, thank you for indulging me while I went through some of that contacts and some of the things that I'm most excited about on a macro scale.

But let's get into the micro the built environment, and that means homes and buildings offices, etc. is one of the most conspicuously consumptive sectors of our economy, and has a tremendous impact on carbon emissions and energy and water and other resources, and the Department of Energy actually estimates that homes and buildings in the US account for about 40% of our nation's total energy use, 70% of our electricity us, and about 40% of our total carbon emissions. And on a global scale, it's expected that 2 trillion square feet, which is equal to the built environment of New York City, will be constructed, get this, every 35 days for the next 35 years. Okay so that is a tremendous it's a colossal to mind blowing amount of development which means that we have to get to net zero immediately, and that it's absolutely imperative.

Unfortunately you know we have a long road to travel because right now own not even 1% of existing buildings are considered to be net zero carbon today.

But fortunately the transition to net zero is underway, and net zero is happening, irrespective of location and climate and political jurisdiction.

And that's partly because the ROI of net zero energy Homes is penciling out in markets throughout the nation and they're really yielding a quick payback period for energy efficiency upgrades, lower operating costs or energy bills and higher resale value.

So, what do you need to know with respect to net zero energy.

First, the most important piece of getting to net zero energy is creating a high performance well insulated and airtight building. If you're interested in the details of that, let me know. And I can tell you it includes a lot of this stuff hold off, there's a lot of words on here I did that on purpose and I'll get to this in a minute. But some of the really key elements in creating energy efficient crashing homes include super-efficient and right sized heating and cooling systems. Good windows with less than point two five you and point two five solar gain again those are industry, values and numbers, but they're important numbers to know if you're making decisions about upgrading your windows cost effective and energy efficient appliances and lighting, keep contact analogies for air and water heating and I'll get more into that in a second.

Renewable Energy solar right now has become super affordable. We really also advocate for battery storage systems I'll get more into that in a minute and then of course, you know, getting to just not just net zero energy but net zero carbon as well.

And by getting to net zero energy, you can not only save money on your operating bills. Right away from day one, but really you can increase your, your resale value so anyone that is looking not only to enhance your living experience lower your operating your long-term operating bills, but also increase the value of your homes, there's a lot of great things that you can do.

So, starting with heating and cooling systems so HVAC accounts for about 55% of household energy use. So, it really makes sense to invest in high performance technology like variable speed heat pumps, okay so he pumps have been in the US for about 30 years, but they're just now over

the last couple of years reaching a tipping point because without going into all the industry wonky speak, which I thought about but I don't think that it behooves us right now if you're interested contact me after and I can explain the technology of it but suffice to say that some of the biggest challenges for heat pump technology, namely that they weren't that effective and colder climates, have been sold by the HBC manufacturers so if you're looking to upgrade your HPC look for heat pump technology or the very least very high star rating.

Also windows and doors are generally the weakest portion of a building envelope fenestration that's called, and they play a major role and getting to net zero energy up to about 30% of a typical American homes energy can escape out a windows and doors, and that's about $50 billion in annual energy leakage if you total that up just for the housing sector.

So standard windows today having our value between our three and our five. According to the Department of Energy, increasing your windows from an hour three to an hour five will reduce your average heat loss by about 30 to 40% again I know this is wonky but it's important to know.

And then, of course, energy efficient appliances, solar panels are they said not only have the cost of solar panels themselves fallen dramatically in the last decade, exponentially.

But now there are creative financing solutions for solar. So, you can get what's called a power purchase agreement or a PPA so that you don't have to buy solar panels outright but you can basically do a monthly leaks and then there's some smart technologies, which I'll talk a little bit more about as well.

In addition to things like he pumps and renewables, smart thermostats are always a good idea. So, there's a bunch of them out there nest I really like the Eco be version, but as I said there's, there's a lot out there, and they can help control your, your heating and cooling, not only to maintain comfort, but also to manage costs. And now we're starting to see some things that help with what's called peak load shifting again I'll touch on that some more in a minute.

And there's also things like cool roofs with radiant coatings that prevent heat gain from the roof that can keep your house cool in the summertime.

And again, just a lot of really interesting and innovative technologies on the market. To get to a built environment that has net zero energy and carbon we absolutely need the comprehensive adoption of renewable energy, namely wind and solar but particularly solar in the housing sector because that's really the most available and most cost effective, effective, technology and fortunately the clean energy revolution is already here in fact wind and solar is cost competitive in most parts of the world.

And here in the US, wind has actually become the cheapest form of retail energy and solar has become the cheapest form of wholesale energy, and fortunately the technology we have today is about % more efficient than wind turbines and solar panels that we had a decade ago. And we can, you know, we can collect more power, using more advanced and smaller, more compact, and less costly technologies than ever before. So, that's really driving the adoption of renewable energy. There's all kinds of renewable energy options.

If you're interested in solar for your home. The first thing that I would do actually is call utility, I suspect a lot of you are in the Denver area so that's probably XL energy.

Find out what kind of rebates are available to you in your area. Find out if they have preferred solar installers, whether that someone like you know a Tesla, or a sun power or a sun OVA is another one that I know is pretty big in the Front Range. But there are all kinds of pathways to get solar. Not only will this help mitigate your costs, your energy costs, but especially if you can get, if you can afford to get battery storage as well.

What you can do is something called peak load shifting, meaning you can get on what's called a time of use rate with your utility so that you are drawing energy from the grid, when it is least expensive.

And then if you have a battery especially you're actually feeding energy back to the grid. When its most expensive, and what that does is it will save you a ton of money on energy bills, but it also reduces stress on the grid.

So utilities are actually looking for the opportunity to work with homeowners and building owners to create this demand side energy management, it's called, and to create what's called again peak load shifting.

There are a lot of technologies that are on the market and market available cost effective right now to help facilitate this demand side energy management and this peak load shifting right so there's a Schneider Electric probably a lot of you heard about that they have something called the Wiser Home Energy Management System, and basically that can control your energy on a circuit level, so that not only are you optimizing energy for cost effectiveness. But again, you're integrating with the grid to use energy in a way that is best for you and

But because there's so much stress on the grid. The utility and our energy goals have become aligned in a brand-new way. Because utilities are generally looking to save energy at peak time so they don't have to build up more energy plants and extra capacity because actually cost them more money than creating these demand side energy management strategies and plans and helping provide incentives for these energy use and smart technologies, other smart technology that I really recommend in your home for cost savings and to enhance comfort include again smart thermostats and climate control. Smart Lighting so I really like some applications now.

There's the Philips Hue line of lighting. There's also some lighting controls, one called Oro Oro. And that has circadian lighting meaning the lighting shifts based on the time of day and the season of the year, so that your lighting actually matches, or natural bio rhythms better than most of the lighting that we have right now.

Smart locks of course and then we really like induction cooktop for a lot of reasons, particularly because then you don't actually have to burn gas in your home, which at the end of the day, when you think about it, do you really want to be burning gas in your home. No, that's terrible for your health, your indoor air quality and induction cooktops are a lot more efficient, and they'll save you money, we're shifting to an all-electric built environment I mentioned this earlier, we're not just electrifying vehicles or electrifying our homes as well. And that really includes everything all the

systems in our, our homes from, you know, solar and storage to our water heating to our, you know, heat pump technology or electronics etc.

And so I just I'm pointing this out again because, as you're making decisions, especially if you're upgrading each VC water heaters appliances, you really want to look for all electric options.

I've talked a little bit about net zero energy I'm going to talk about water, but at the end of the day, and getting to net zero energy is paramount if we're going to reach our climate goals.

But the really hard cold truth is that net zero energy isn't enough we actually have to get to net zero carbon, and to get there we actually have to think about everything from net zero energy which really addresses operational efficiency.

We have to expand our thinking to include embodied carbon, or total emissions during the manufacturing, the transportation the construction operation, and the end-of-life phases, there's a lot more that I could say on this again, I'm not going to just because of the sake of time and I got a lot more to share, and I'm talking more about our personal decisions, but it's a really important topic, nonetheless.

So, I want to talk a lot a little bit now about the concept of healthy home coming has really brought this concept of healthy home and indoor air quality to the forefront of our national dialogue.

And just as I like to say that in the 2008 recession, energy efficiency was the belle of the ball because everybody became super cognizant of their energy bills in that same way healthy home is kind of the belle of the ball of coded.

And so we want to say there's some kind of silver lining out of this crazy global pandemic. It's that people are becoming more aware of their indoor air quality of healthy home. We, you know, there has been behavioral change since COVID This is an ongoing survey that we ask people are exercising more they're more aware of their indoor air quality and energy efficiency and they're investing in Smart Home technologies, we're also seeing people growing their own food. Actually for enhanced self-sufficiency.

We're seeing that coven has really caused people to re prioritize and rethink the way that not just the, they live in their homes but the way that they think about home because for the past two years we've been told that our homes are the safest place that we could be. So, we're all trying to create these safe spaces that are, that facilitate peace of mind and wellbeing.

There's also been another shift which is actually pretty interesting as people really have come to value their almost more. They're looking at homes as a long-term investment so they're more willing right now to spend money on upgrades and remodels, and so actually we're seeing that across the country, on average, the amount of money that people are spending on retrofit projects has increased from about 12,000 to about 17,000 per project, and home buyers and homeowners are not just looking at price per square foot as evaluation metric but they're looking at sustainability and quality and resiliency and health and wellness and that's a really good thing, because homes, shouldn't be valued by price per square foot. They should be valued by how we live in them, are we healthy in them, are we ultimately saving money and then because they're not blowing, they're not you know burning down and wire wildfires are blowing down and super storms. Are we healthy Are

we not having to take our kids to the hospital because they're getting as much add from around, so there's a much bigger evaluation metric.

We're seeing a lot of kind of shifting homeowner expectations certainly with respect to health and wellness and connected living I mentioned self-sufficiency with food production and and solar on site power production as well.

Um, indoor air quality as I said, has actually shifted from a nice to have to a must have for the first time ever. Our millennial audience has told us that healthy home is as important, and in some cases more important than the location.

When making home buying decisions. That has never happened before. And you can see that nearly 100% of our readers said that no air quality and having a healthy home This has some level of importance to them.

To enhance the health and wellness of your home we really recommend proactive indoor air quality systems, and these are systems that have monitors and sensors that can sense things like co volatile organic compounds or temperature, humidity, and the Pro X so there's certain sensors called aware or flew back or you who.

But there are also proactive systems that have the monitors on the front end and when they sense, those toxins in your air they will actually turn on ventilation fans and range hoods or they'll connect into your HVAC systems, and those are offered by companies like Panasonic who has a system called cosmos, or grown, who has a system called Overture really recommend the systems, not just the monitors which are important, because then you can see what's in your air, and how healthy or not your areas, but we really liked the proactive ones because that's the easy button and it fixes your air for you without you having to do anything.

The other part of having healthy indoor air quality is purchasing and specifying healthy materials that are nontoxic or organic they don't pass gas that are hypoallergenic, and that's everything around us from cabinets and paints and stains flooring and furniture bedding countertops or window covers. As you can imagine, you can make healthy choices that don't have the season off gas. Or you can make choices that have those toxins and then you get sick from those and you get something that is literally called healthy homestead or excuse me sick, sick house syndrome. If you have too many toxins in your home.

We've also seen a huge uptick in the desire to expand outdoor living spaces, especially over the last two years as we've been a little confined in our homes people want to spend more time outside, and from a sustainability standpoint, the one thing we really recommend with respect to what we like to call Alfresco living is composites, like tracks decking or there's timber tech fiber on. But these are companies that are taking plastic water bottles and other types of plastics and recycling them for use in decking, and that decade tends to be more resilient and wildfire resistant, and also more durable, you're more maintenance free. So, we really recommend that.

We also really think that everyone should be growing something, whether it's flowers or even better at least growing some of your own food, even if it's on pots on your decks tomatoes or greens.

We have a problem with that here because we have bears and mountain lions and lots of rabbits, deer, and elk they don't know that they shouldn't be eating like deer resistant plants, they eat everything but you know we're big advocates of the power of growing your own food.

We've also seen a huge uptick in home offices right so pre COVID only about 15% of homes had dedicated office space now that number is closer to 75%. And it's really important here with respect to having a healthy office, not just to look at proper airflow and indoor air quality.

But also, you know, where is this located Are you in the middle of your family activity or can you get, can you remove yourself from it. What's the purpose, can you be productive in that space. Do you have proper lighting. Do you have a proper color scheme to facilitate. You know, your concentration and your productivity.

We're seeing a big rise in smart home technology. I've talked a little bit about this. Security is a big driver but also energy efficiency as well and that's where we get into you know the smart thermostats and the Smart Lighting. We're also seeing a surge in water monitoring and Leak Detection as water becomes a bigger issue. I'll talk more about that in a minute. Smart switches in clubs, etc.

Oh, let me say before I move on. There's also some really interesting technology for active adults who want to stay in their homes for longer called aging in place, technology, and these are really non-intrusive technologies their cameras and monitors with fall detection, they have some voice control technologies that are easier as people age. There are also some pretty interesting sensors and this is you know once people get kind of down the road. And there may be borderline whether or not they should be living at home there's some sensors, you can put on say a refrigerator or a toilet to make sure that those things are actually being used. So, you know, down the road at some point if I decide to put a monitor on my folks refrigerator and I know they are home and I see that they have an open the refrigerator in a day or two. I know I get an alert, and I know there's a problem and I got to check in. That's probably not a problem for us because I talked to my mom probably about three times a day but you get this don't you get the gist of it.

All right, I know I'm running late on time I want to leave some room for questions so I'm going to run through this pretty quickly.

What I like to say is, if you're in the building industry, if you live in a house, or if you breathe. You need to be paying attention to water. Okay, we are in an impending water crisis, right, so now on a certainly on a global scale you can see some of the stats there but particularly where we are. Experts predict that there's going to be another hundred percent growth in states like Nevada and Arizona, probably a 30 to 40% growth in California and Colorado.

We are already water parched right and if there's no water. There's no, a lot of things right. Certainly, there's no building permits but you know we don't want to get to a situation where Australia was in you know they've been in a couple for the last several years where they have to decide whether they send water to farmers, or two cities, and they sent that water to cities because they can import food, but that's a bad place to be.

The good news. On the Waterfront is that there are some really incredible innovations that are coming out. Certainly, ranging from things like low flow faucets showerheads toilets and appliances. These are a must have. With respect to net zero water so do you don't have low flow fixtures. Go get them please if you care about your kids and your grandkids and the future.

It's worth the investment they're not that expensive and modern low flow faucets can reduce water flow and usage by about 30%, saving about 700 gallons of water a year per average household and, you know, which is the equivalent of about 40 showers worth of water, and that really adds up. And when it comes to homes more than 50% of indoor water use is used in bathrooms. Showers and baths account for about 30 to 35%.

So we're starting to see more gray water systems which actually gather that water recycle it for non-potable uses so takes water safe from your shower and then uses it for toilets, because why should we use potable water and toilets like it just makes no sense. And we are, I mentioned Leak Detection and water monitoring systems very much on the rise. Really recommend those there's a system by PHYN that I really like.

And then there's actually some other really cool technology like atmosphere generators, which look like solar panels, but they harvest water instead of sun, out of the air for potable water. It's pretty interesting and then we're seeing a lot more with respect to like groundwater recharge products like permeable pavers instead of cement pavers that allow water from rain and snow to recharge groundwater as well as water harvesting kind of rainwater and this water harvesting systems and water tank so that we can create a net zero water and water harvesting systems and water tanks so that we can create a net zero water. Built Environment not just net zero energy and resiliency, this is also becoming of paramount importance for us here in Colorado and really anywhere in the West.

We're looking more at wildfires than anything else on the East Coast they're looking at super storms, tornadoes certainly seen historic tornadoes, hurricanes sea level rise flooding.

But there are some very specific decisions that can be made to enhance the fire risk mitigation of your home, using the right citing roofing materials is actually probably one of the most important things that you can do we like the concrete tile roofs or metal roofs are excellent for a wildfire risk mitigation. Excuse me the building envelope products and systems. Another really important thing to pay attention to is your landscaping, because if you have what's called a defensible perimeter around your home, it's less likely to burn down.

And then we also really like smart irrigation systems like ratio that can sense weather, but then also if there's a wildfire in your area. And if there is it can automatically turn on your sprinkler system and wet your landscaping and your home to help try to protect it.

There's something that's called fire wise landscaping, it's but it's offered by the National Association of fire protection and sorry the NFPA the National Fire Protection Association, and I really recommend checking that out.

It's for a home and community scale basis. And then there's pandemic proof design elements that we're seeing arise in things like touch list faucets, and the days voice activated locks, and I think we're just going to start seeing more and more of those in general.

So, hopefully I've given you a few ideas for things that you can do in your home I think at the end of the day, to meet our climate goals to live more sustainably we are going to need a combination of those macro elements, excuse me that that yeah the macro elements that I mentioned in the beginning of this webinar as well as the micro choices.

That each of us can make now live in car free saves a lot of CO2 per year but that might not be feasible for everyone. Maybe you just share a vehicle with your spouse or your partner. Or maybe you get an EV. Maybe you take a few less flights, every year to cut down your impact. Maybe you don't want to go meatless because you like meat or pork or chicken but maybe you have a few meatless days a week.

in here about the impact of having children because truly that's actually one of the most impactful, things that we can do, whether or not we choose to have children as a huge environmental impact.

But of course that's a very personal decision as well. And then there's the little things turning off the lights turning off the water when you're brushing your teeth just been things that really have become no brainer. But I think you know really where I want to conclude now is, you know, Planet Earth is the one thing that we all share. We are often at its mercy and we take its majesty for granted.

But we really forget sometimes that we are just holding it in trust for our children and their children and so on and all of this, all of those who, who are going to come after us and you know really make no mistake we are in a pivotal defining moment and it's up to us to decide whether this becomes an awakening, or an opportunity lost. We are all of us responsible for shaping our society and if we choose to prop up an obsolete status quo that really perpetuates social and environmental and economic injustice. It's a state of normal that really never deserve to succeed. And then, you know, there becomes a calamity but perhaps it's time for us to embrace the spark that accompanies calamity so that we can rewrite our collective story, because the next era in America and across the globe is unfolding before our very eyes, and whether it has to do with coded whether it has to do with climate change, whether it has to do with what the heck is happening in our democracy just as a quick note to notice you know the date and what happened this day last year.

You know what is ahead of us is very different from what we've experienced before and to be sure there is no return to normal. I don't even know what that means anymore and you know like the caterpillar and the butterfly.

The process of transformation is both cathartic and beautiful. It will certainly be painful and confusing at times, but it is inevitable, and it's time.

It is really time to reorder our world. Time to embrace decarbonization as a pathway to innovation and resilience and healing and renewal and time to re craft a system that facilitates social and economic and environmental systems, sustainability.

We can get there, we, all of us have to make the right decisions in order to get there. So, thank you so much. That is the end of my presentation today, I'm happy to take just a few minutes I did it again Terry I'm sorry I went over time, but happy to stay on for a few more minutes and answer any questions that have come up.

Terry Rubin

You are just. You are such a godsend. And in the macrocosm and in the microcosm and thank you for this incredible talk. We do have a few questions that have come up.

And so I'd like to just, just take time for maybe one or two but somebody asked the question, is an older home is it feasible, affordable, affordable to make these changes in an older home or is it best to build new and make these kinds of and building these kinds of things that you're talking about.

Sara Gutterman

Yeah, so that's a great question, and the answer is that are existing built environment, they are the elephant in the room, because a lot of our housing stock especially housing that was built, you know really prior to say the s are super inefficient, they are unhealthy they were some were built with toxic materials like lead and asbestos and so we actually have to address our existing built environments so there are lots of ways that you can renovate existing homes, and upgrade their systems, they definitely take an investment.

Fortunately, there are lots of rebates at the federal level at the state level, at the utility level to help augment, you know budgets for, and to mitigate some of the investment in these upgrades.

But you absolutely can upgrade these homes and I really recommend that you do, because we have to, we can't just ignore older homes and just build new homes that's just not feasible and rebuild our media in fact next week we are coming out with kind our ultimate retrofit and upgrade guide, showcasing two remodeling projects that we're currently doing one in Austin and one in Scottsdale, as our part of our vision house series which are our demonstration home so you can either just keep an eye open for the launch of that on our website which is green builder media. com, or you can shoot me an email, I'll type that into the chat box, and I can send you a link.

I also really recommend and sorry this is kind of a shameless plug but Green Builder Media has a weekly email called Vantage, you can just go on to our website greenbuildermedia.com, Click subscribe Vantage is free, it's kind of our weekly digest our best of the week stories that we launched, and it's a great source of information for everything about everything I talked about today.

Terry Rubin

Thank you, that's awesome and I guess that just leads me really into letting everyone know that there was a question about can you share the slides with us because there's so much great information in there and I just want to let everybody know that our presentation has been recorded and it will be up, and on the web, the Lotus Network website probably by the end of tomorrow. And we're so happy to announce that because of our members support and other generous donors support, we're able to further our mission and make programs like this this incredible program that you've just seen available to everyone.

Next week, you will be able, everyone who's here today will get an email about today's program and then you can share that email and that link to our website because everybody is now we're opening this up to everyone to be able to view timely topics. Sara's and all of our past timely topics and just know that together we can create change in this community in this world. I just want to say thank you all so much for being here, Sara.