

Rebuilding for Climate: Successful City Strategies

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Greg Dalton: This is Climate One. I'm Greg Dalton. 83% of people in the United States live in urban areas. And these days that's where important climate progress is happening. Building codes and regional transit policies may not be sexy. But they can address historic injustices and provide cleaner air and better quality of life in a tangible way.

Tamika Butler is a national expert on the built environment, diversity and inclusion, and change management. She is currently pursuing a PhD in Urban Planning at the University of California, Los Angeles. Before moving to Los Angeles, Tamika lived in the San Francisco Bay Area, and grew up in Nebraska. I asked how her experience informs the way she views what cities can and should be.

Tamika Butler: You know when I think about my different experiences growing up in Omaha going to law school at Stanford and living in the Bay for about seven years and then moving down to LA where I've been since 2012. It's really different and beyond that I was a military kid. So, you know, from second grade and to right before high school I was in Okinawa, Japan, which is also a totally different environment. And I think it's helped me as an advocate as a consultant as a student. I think it's helped me as a person. One, just one of my core identities as a Midwesterner and knowing that everything is not a big city. And so, when I look at different solutions to climate to transportation, I am really a huge proponent of there's no one-size-fits-all, right. Like you have to really take a particular place for what it is you have to be willing to see that even without everything being perfect there are probably some strengths there there are probably some things that work.

Greg Dalton: In 2020 we were simultaneously hit with COVID watershed moments and racial justice and increasing climate disasters. At that time, you wondered if this might be an opportunity to build something new from the ground up. What is that, something new?

Tamika Butler: Unfortunately I think so much that happens in planning and climate spaces is that we get stuck a little bit and this is how we've always done it, right. But we've all heard that saying doing the same thing you've always done and expecting different results, you know, could be a

definition of insanity.

Greg Dalton: And in the essay From the Ground Up, You wondered "What if we build something up just to fortify the foundation of white supremacy that was already there?" How do you avoid doing that?

Tamika Butler: I think we have to be conscious of it. Something else I said in the essay is we have to be willing to talk about it, right. I always tell people if you can't say racism if you can't say white supremacy if you can't say anti-black then I don't know if I can trust you. Because how can we fix something if we can't talk about it, right? for me if we just say I think what happen in 2020 as we were all stuck inside. And when I say all again, we have to think about who had the privilege to be stuck inside and who never stopped being that frontline worker. But I think as more people were stuck inside and they couldn't turn away from racism they couldn't turn away from the climate disasters. They couldn't turn away from these things. More people felt engaged and energized to say I want to do something. And there's a gap there between wanting to do something and actually doing it. And sometimes just wanting to do something and articulating that you want to do something but then rolling up your sleeves to again do it the way you've always done it. Well, you might feel like you're building something new because you have a new energy. You have a new interest and goal. And I believe that that is genuine for many people, but because you're not willing to conceptualize it in a different way you think you're building something new when in fact you're just giving lip service. I think the phrase I use in the essay is you're creating this façade that things are gonna be different, but in fact, you know, we can't just build without acknowledging and speaking about the ills of the past and what was there in the past. Because if we can't speak about it, we can't fix it.

Greg Dalton: I have learned a lot about my own privilege, white privilege. And certainly, about systemic racism in this country and how it is everywhere and everything since that spring of reckoning in 2020. So, I think I've opened up and learn some things. But read your Twitter feed and I think, oh no, I haven't done enough. I haven't changed maybe I'm just making myself feel good. So, how do you, do you see progress and change in the situation you're in in urban planning, you know, are cities being changed in any new way or is just still at that talk level?

Tamika Butler: I think that there is change. I'm an optimistic person. And so, I have to see, you know, I have to believe in some change. If I didn't believe in change then I would feel like all the work I was doing, you know, I'm just a hamster running on a wheel. So, I do think there has been some change. I do think you know there are folks like you, Greg, who are like wow I really looked internal and I've started asking myself questions I didn't ask before. I stopped turning away, right. And we are seeing cities do more with reaching out to people doing different forms of engagement being open to changing who we conceptualize when we think of expert. Realizing that you know it's not just the person who works at a consulting firm with the fancy briefcase, but it's also the grandmother who sits in the room looking out the window and can tell you everything you need to know about the speed in the neighborhood what's the trouble spots are, right. So, I think there have been changes and we are I think headed in the right direction. I think what's tough is someone who you know does live in this country is someone who's black and queer that we have a tragedy in Buffalo simply because people are trying to live their lives and they happen to be black. It was followed by a tragedy in Orange County where people were targeted for being Taiwanese. And I think that's something you know we've seen a lot of during these last few years the rise and hate. And so, I don't want to let those instances steal my joy or my hope or hide the fact that I think there are a lot of people who have had an experience of feeling like things have to be different, and I have to be a part of that change. But I would also be naïve to not acknowledge that there still a lot of work to do, and it's still really difficult to be black in this country and in the planning space.

Greg Dalton: Yeah, well in any space, yeah, right. You were for a time, the executive director of the

Los Angeles County Bicycle Coalition. Cycling is a sport and activity that is often has a certain image. I'm a cyclist and there is sort of a skinny white male with scrawny arms and big legs and there are inconclusion in bicycling like a lot of things has been a real challenge. Other than the bike path along the Venice and Santa Monica beaches, most people don't think about bikes in LA and happily coexisting. Well, you can't build a bike friendly city from the ground up. What do you do? How do you get bikes into this car centric culture like Los Angeles?

Tamika Butler: Right. You know, and I think this is something we have to think about a lot with a lot of our environmental and transportation interventions. And in an ideal world it would be great if we had a blank slate and we could just build things from the ground up. But the reality is we have the world we have and, in some places, we have the cities and the infrastructure we have. And so, we are looking at more of a retrofitting process. I always say in those spaces there are some new projects so you know when in the city of Oakland, the Oakland Department of Transportation led by Ryan Russo, right. He did a project around potholes. And he was filling potholes, right, he wasn't building something new. He was focusing on something existing but he prioritizes low income communities of color. It was equity led pothole filling. It was saying what are the communities that haven't got an investment for a long time. And so again, I think even when we're building upon existing structures. How do we center equity? How do we think about who's historically gotten the least? Can they get the most? Can they get it first? And so, a lot of these decisions whether it's a climate investment a transportation investment a housing investment whatever it is it comes to priorities. How do we prioritize who'd we center in this work? And even if we're building up how can we still do it in a way that's different?

We usually just repave this road but can we repave it and include a bike lane, right. Things like that to you know how do we repurpose the space. There's a city here in Los Angeles County Culver City that just did a massive move Culver City project on their main street. They didn't do a ton of construction they didn't have a big budget. It was a quick turnaround. But they made bus only lanes they made bike lanes and they really change the structure. And so, we are seeing these instances where people are building upon existing structures, but again, I sound like a broken record just doing it differently than they've done it before.

Greg Dalton: I enjoy cycling and I've used public bike shares in Vancouver, New York, Washington. I use the one in San Francisco every week. I see stations and neighborhoods across this racially compartmentalized city in black neighborhoods the Chinese neighborhoods the Latinx community. To my eyes, the bikes are recently distributed and inclusive. You see something very different when you look at the bike shares, why?

Tamika Butler: Yeah, you know, one of my friends always says that when we look at bike sharing, we look at some of the membership data or uses data of people who use bikes. It's not always as diverse or reflective of the diversity of the cities that these programs are in. And some people say well that's because black and brown people don't ride bikes. And this friend of mine says, well, actually we invented bike share, right. We're the ones who like lived in these communities and said, hey, homey can I borrow your bike for a second, I'll bring it right back. And everybody is using the same bike in the neighborhood. And beyond that, you know, we do ride bike sometimes we're invisible riders. If you go to any restaurant or any business with the third shift and you go look in the back there are bikes locked up there. And so, it's not a matter of not riding bikes I think part of it is sometimes cities start new initiatives or do new things and there's this kind of build it and they will come philosophy. But if people don't know about it then, especially low-income folks of color who for so long, have been told and messaged that things aren't for them they're just gonna make an assumption. So, there's examples in New York when you know bike share worked with affordable housing developers and put some stations outside of low-income housing and people are like I'm not getting in trouble for touching that. Here in LA when we first rolled out bike sharing, we did it in

downtown LA. There's a part of downtown LA the garment district with a lot of predominantly Spanish-speaking, you know, hard-working blue-collar folks. And when the bike coalition and the group we are working with People For Mobility Justice went out and did outreach in Spanish. We just kept hearing they just showed up one day. We don't know what they're for. They must not be for us. No one talked to us about it. And so, I think often times when we make transportation planning decisions and we assume that people like me and you who just love this stuff we're gonna be like what's that? Let me look it up. Let me Google it let me see, oh, I can get a membership. But there are a lot of people for whom you know they don't want to touch something that is not for them because they know what happens to them when they do something they shouldn't do when they go somewhere, they shouldn't do. And when other people are making those rules for them about what they should and shouldn't do. And so, I think part of it is really, really working with people from the beginning. Not after it's done, but from the beginning and building that goodwill and that buy in.

Greg Dalton: Never occurred to me. Because one of the places I go to get a bike share is a 10-minute walk from my home in front of a public housing in San Francisco and there's often bikes there. It never occurred to me that the people living there didn't think they could touch them or use them. Thanks for sharing that. You were trained as a civil rights lawyer before taking the job at the Los Angeles Bike Coalition and you worried that it wouldn't fit your mission because as bike lanes are often the first sign of gentrification. So, what changed your mind and how are bike lanes gentrification?

Tamika Butler: Yeah, again, you know it's not because black and brown people don't ride bikes. I think what that actually means is often the black and brown and low-income communities, you know, they have lacked investment for a long time. And so, all of a sudden, they come outside one day and there's a bike lane. And they're like, wait a minute. We've been riding bikes, right, but this was never an issue. Like we've always been writing bikes but no one ever cared enough about our safety or our, you know, our facilities and infrastructure to build it. So, who is this for, right? We've always had transit but it never comes on time. We don't have adequate shade shelters. We don't have streetlights that work. But all of a sudden, some white folks are moving in and things are getting spruced up. And now this, you know, transit line that used to be predominantly of color is now there's more white folks here and they are determining what feel safe and unsafe to them. And those of us who have been using this transit for a long time are now being policed in a different way because someone else has decided that we're no longer safe. And so, I think it's not the bike lane in and of itself, but it's people saying, why have we been in this community for a long time and some of these investments. Whether it's a grocery store or bike lane fixing the streetlights weren't there but now they're there and we're seeing demographics change. but, you know, transportation and access to transportation is such a critical civil rights issue. It's always been part of the civil rights struggle. Since someone on the bus, said, nah, not today I'm not getting up.

Greg Dalton: New York City has a plan called NYC 25 x 25 which proposes converting 25% of New York City street space into pedestrian areas, bike lanes, green space and bus lanes by 2025. How is that proposal strike you?

Tamika Butler: It makes me really excited. After I left the bike coalition, the next organization I went to was a parks organization, the LA Neighborhood Land Trust where we built parks and gardens in low-income communities. And the reality is we have a lot of open lots and open spaces, in our urban landscape. But beyond that and so many ways streets are one of our biggest resources that we have left for open space. And so, being able to reimagine that space is fantastic, but as I always say it's not necessarily about the idea. I think most people who get into city planning and transportation or environmental work, I think we're good people, we want to help people. So, it's never the intent of what we're doing. It's all in the details. It's how do we make it happen and who

do we talk to. Are we planning with people are we planning for people? And I think too often we like to say well, we're the experts we'll come up with the perfect plan. But in reality, part of equity is allowing people to self-determine what works best for them. And so, we have to start figuring out ways to plan with people as we work towards these lofty goals.

Greg Dalton: Well, thank you so much Tamika Butler for sharing your insights on what's possible and from the ground up. Thanks for coming on Climate One.

Tamika Butler: Thanks for having me, Greg. I really appreciate it.

Greg Dalton: You're listening to a Climate One conversation about the different ways cities are addressing the climate crisis. Our podcasts typically contain extra content beyond what's heard on the radio. If you missed a previous episode, or want to hear more of Climate One's empowering conversations, subscribe to our podcast wherever you get your pods. Coming up, the city of Ithaca in upstate New York is racing to decarbonize its buildings by 2030.

Donnel Baird: One of the things I really love about the Ithaca project that's a mayor taking responsibility for their own outcome. It's not hey, I'm the mayor or the governor and it's 2020 and I'm gonna pass some law that by 2050 we have to achieve XYZ climate objectives. I mean who cares, right? In Ithaca, we have a project that has a timeline 7 and a half years to get everything done.

Greg Dalton: That's up next, when Climate One continues.

Greg Dalton: In 2021, the city of Ithaca, New York voted to electrify and decarbonize its buildings by 2030. it became the first city in the country to apply such regulation to existing buildings, not just new ones. The city says this program will cut CO2 emissions by 40%. The process will include installing solar panels and replacing gas stovetops and other fossil fuel appliances with electric ones. In order to achieve this aggressive goal, Ithaca has partnered with BlocPower, a climate tech startup based in Brooklyn. I asked Donnel Baird, founder of BlocPower, what has happened since the plan was announced last November.

Donnel Baird: Well, a lot has happened that's been really exciting. First of all, we've got emails from as far away as Australia, Europe with other cities around the world who want to follow Ithaca's lead. And they want to know how did Ithaca pull this off. How did they defeat the real estate industry in their town? How do they update the code? What were the particulars that Ithaca figured out the engineering finance, project management and really procurement processes, right? I mean there's hundreds of cities around America that similar to Ithaca have said, look, we want to be hundred percent renewable or 80% renewable or 50% by the year 2030. And they passed these laws, but they haven't really figured out how to implement those laws and Ithaca has. And so, there's lots and lots of cities from around the country and around the world who been reaching out to the mayor's office and sustainability chief in Ithaca, Luis Aguirre-Torres who's a genius. And he's been giving them lots of advice. And so, part of what we've been doing is evangelizing the story of how Luis and Mayor Svante Myrick were able to pull this off to decarbonize the entire city. So, that's one part.

Greg Dalton: Right. So, they haven't pulled it off yet. It's one thing to have an announcement and as you know better than I there's like every building, you know, there's lots of variation in buildings and the kind of equipment and floorplan when they were built. Ithaca has a lot of old buildings. There are two phases I understand. Phase I is a thousand residential and 600 nonresidential units. So, how's it going to happen? There's lots of different boilers and water heaters and heating systems in these old buildings. They're expensive. Everyone's a little different, which sounds expensive. So, how's it going to happen?

Donnel Baird: So, we signed our contract to launch the program a few weeks ago. And we have begun some of the implementation. We have a list of a bunch of buildings that are ready to decarbonize in Ithaca right now. There are some community centers there are a bunch of single-family homes with one or two people in the city council, you know, eating their own dog food, But they're gonna comply with their own law first which I think is appropriate. And more broadly we've done a couple city scale engineering assessments. We built a drone-based map of heating loss and thermal load across several thousand buildings in Ithaca. So, one cold wintry day when it was like way below freezing. We flew a drone across the city to map the rate at which buildings were losing heat and we outfitted the drone with thermal imagery and so we can get a sense of which buildings were particularly energy inefficient based on how they were performing on a super cold day, so we did that. We've also built a map, a digital map or digital twin of all of the buildings in the city of Ithaca so that we can run simulations on what kind of equipment makes sense per building based on the building's age, size, use case permitting histories. We now have a database and a map of all the buildings in Ithaca that allow us to make predictive engineering recommendations as to what kind of sustainability retrofits will make sense on a building by building basis and not fundamentally as when you get into the implementation of how we're gonna implement this Ithaca project. It's the use of statistics and predictive modeling and thermodynamic building science combined with project finance underwriting that's gonna allow us to finance a portfolio of buildings across Ithaca. Internally we want to get this done in a few years. We know that we have 7 and a half years to do all 6000 buildings. But we like to get it done sooner than that. And Ithaca for people who don't know is about 30,000 people.

Greg Dalton: Lots of goals being announced in corporate America and sometimes in government. What happens if Ithaca fails to meet these goals. Will the mayor still be around who's accountable? Because so many times we see climate goals announced by people who won't really be around in office when that deadline comes to pass.

Donnel Baird: Well, that's one of the things I really love about the Ithaca project that's a mayor taking responsibility for their own outcome. It's not hey, I'm the mayor or the governor and its 2020 and I'm gonna pass some law that by 2050 we have to achieve XYZ climate objectives. I mean who cares, right? In Ithaca, we have a project that has a timeline 7 and a half years to get everything done. We have a three or four-year timeline by contract by which we're supposed to deliver a set of outcomes certainly the first thousand buildings if not more. And if we don't deliver, the mayor is up for reelection and voters can punish her for not delivering on that goal. And so, I love that Ithaca and the mayors of other several cities around America are taking direct hands-on hundred percent grown-up responsibility for implementing decarbonization in their city.

Greg Dalton: When solar panels and electric vehicles first came out basically there is a choice was to buy financing was limited not available. Then over time that matured and now people can reduce the upfront cost of rooftop solar through various financing options. It sounds like you're trying to do something similar to reduce the upfront cost of heat pumps and other equipment for building. So, explain how that's working in this case with multitenant buildings for example.

Donnel Baird: Yeah, I mean fundamentally, we worked with Goldman Sachs for several years to invent a new financial product that does for heat pumps and building decarbonization technologies. The same thing that mortgage is due for homes or that solar finance is done for solar panels which is amortize and stretch out the cause of these assets over time. Most Americans don't have hundred thousand dollars lying around to buy a new house all cash or \$25,000 laying around to pay for solar panels or heat pumps. And so, you take out a loan you engage with financial markets and use a financial product to help you acquire that asset and repay a lender over time. And so, that's what we've done in this case for heat pumps whether it's single-family homes, apartment buildings,

churches, synagogues, mosques, schools whatever kind of building you have we've developed a new financial product that allows us to lower the upfront costs to zero so that all Americans can have access to affordable electric buildings.

Greg Dalton: in Ithaca your project is going to focus on buildings located in low income and historically marginalized communities. So, how is that gonna work if they are going into low income areas with kind of expensive, kind of single use custom projects. How is that gonna work financially?

Donnel Baird: We're gonna finance the low-income buildings the same way we finance middle-class buildings and upper-middle-class buildings. We're gonna underwrite the energy savings do a pro forma financial analysis of every building and organize projects that are affordable for those low-income building owners. Our business at BlocPower is figuring out how to introduce clean energy to all Americans and making it accessible for all Americans. We spent a lot of time figuring out how to do that and that's exactly what we intend to do. So, we're excited that 20% of Ithaca's low income we are going to we're confident that we're gonna be able to partner with those low-income building owners in the same way that we partner with more affluent building owners. And so, looking forward to demonstrating all of that.

Greg Dalton: In March, the Biden administration announced new plans to spend about \$3 billion to upgrade thousands of homes in low income areas. That was not one of the more successful parts of the Obama stimulus plan back in 2009. So, how you think that's gonna play out will it be successful and what we learn from last time.

Donnel Baird: Yeah, I think there's two things that really changed. One is the Obama administration made a mistake. I know some people who made this decision and God bless them. I don't know if it was unavoidable, well, some of us are telling them not to do it at the time. Not me, but some of the people that I work with are adamant that they are screwing up which was they took the \$6.6 billion of low income weatherization money and distributed it to local nonprofits throughout America who normally run what's called the weatherization assistance program which is low income green buildings program that President Jimmy Carter started in 1976. And, you know, they took the \$6.6 billion and like shoved it through the pipes and distributed it to all these local nonprofits who didn't necessarily have CFOs, weren't used to having 10 times the budget that they normally had. They were ordered to hire a bunch of workers quickly they haven't figure out how to train and how to supervise them how to buy more material. And there wasn't necessarily the back-office support to help those nonprofits scale up. So, that was one challenge. The second is, you know, in 2009 most people don't have iPhones. Most people don't have mobile computing cloud computing. There is no Alexa. So, there's all kinds of innovation and distributed computing decentralized computing that is gonna make that has transformed multiple industries. If you look at media and what the smartphone has done to media, right, I mean like no one even watches local news anymore we're all on TikTok and Facebook, right. And we're using social media because that is what the disruption of the iPhone has done to the news media. Well, iPhone and smartphones are similarly gonna be disruptive to the green buildings industry over 10 almost 15 years have passed. And the computational capacity that the average American has at their fingertips in their home in their speaker. All of that can be applied to building science. And that is what the philanthropic grant from the Bezos Earth Fund allows us to do it is taking cutting-edge computational technologies from Amazon Web Services and Apple have, you know, there's a lidar in the iPhone where you can walk around the building and do a lidar map of your entire building. And so, it just gonna dramatically change the way that we can do analysis and design and installation of green building technologies. And if the Biden-Harris administration is smart, which I think they are, they're gonna use all of these technologies to ensure that their program builds upon lessons learned from the Obama era. And runs a really successful low-income green buildings program that scale that is successful and can produce case studies to allow lots and

lots of other low-income buildings across America and across the world to go green. And that's exactly what we're all hoping is gonna happen.

Greg Dalton: You talked about growing up in Brooklyn and heating your home apartment by opening the stove. So, I like to know how personal this is for you how your lived experience informs this. And also, the Brooklyn experience you've done some work in Brooklyn that is not prospective like Ithaca. What have you taken away in terms of the building decarbonization from Brooklyn?

Donnel Baird: Yeah, I mean it's been really interesting and we have some time when we're in Switzerland to talk with one of our biggest partners in Brooklyn, Jeff Dunston and to talk with Luis who joined us in Davos. And as we were like plotting and strategizing of how to take the message of Ithaca to the world, part of it is that you can use digital modeling in the digitization of green buildings design into software. That is what we tested out in Brooklyn back in 2016 and 2017 and it worked. And that is what we are expanding to city scale in Ithaca and it's working we expect it to work. And so, we want to continue to build on those lessons of how do you combine insights about the physical world and the physicality of buildings but how do you use software and cloud computing and machine learning to increase the speed and decrease the cost at which you can reach insights about how to green individual buildings and how to green a whole city full of buildings. And so, all of those lessons that we're deploying in Ithaca and other cities across the country were lessons that we learn early on in Brooklyn back in 2016 and 2017. So, that's one part of it. I mean I think the other part of it for me is like, I'm a dad I have a six-year-old and a two-month old. And as I read the Stanford data on how awful gas ovens are for families that gas ovens release nitrogen dioxide, they release carbon monoxide. They release methane even when you're not cooking with gas ovens like methane is being released into your home like your kids are breathing it in.

Greg Dalton: Yea, the pilot light is on.

Donnel Baird: The pilot is still on, the methane is still burning and is still leaking into your home, right, not just your kitchen, but your entire house. So, your kids and grandkids are breathing that in, right? And so, like any parent is gonna be alarmed about that. It lands particularly hard with me because I grew up in a household where we didn't have heat and use our gas oven to provide heat and we would open up the windows to release the carbon monoxide and the fumes. And so, you know, we just have this intimate relationship with our gas furnace and all the chemicals that produce from a very early age. And like I don't want that for my kids and I don't want that for anybody else's kids. I'm glad that the Stanford studies are coming out. I assume that other parents will read them and recoil in horror just as I am and rapidly move to switch out all of the gas appliances in your home. From a health perspective from a financial perspective because you're gonna save money. And oh, by the way, this happens to be like the single greatest thing you can do as a family for the planet, right. And so, we just want to get that message out to as many people as we can. And that's why we're so excited to talk with you today.

Greg Dalton: Yeah, and a lot of people have indoor air quality monitors these days since the fires in the American West. And those are purchased for wildfire purposes, but people use them and turn on their gas stove we'll also see a spike in those numbers. Donnel Baird is CEO and founder of BlocPower. Thanks again Donnel for coming on Climate One. Again, I really appreciate it.

Donnel Baird: Yeah, anytime. Always great talking with you guys.

Greg Dalton: Throughout the country, people of color have long been relegated to living in "sacrifice zones" - areas near factories, landfills and other industrial facilities absorb high levels of contamination to make products that benefit people somewhere else - consumers who never see - or

breathe - the pollution associated with their consumption and lifestyles. But now in one black neighborhood in Houston, a former landfill is taking on a new life that supports and connects nearby residents.

Climate One correspondent Aubrey Calaway reports:

Curtis Dockery: On any given day, depending on which way the wind was blowing, the stench off that dump was horrible. I can't even describe it.

Aubrey Calaway: This is Curtis Dockery Jr. He's a lifelong resident of Sunnyside, a small, majority Black community in southeast Houston, Texas. Sunnyside is only a 15 minute drive from downtown Houston, but it has retained its distinctly rural - or rural and suburban character.

Curtis Dockery: I've seen Sunnyside go from the country to semi suburbs. Sunnyside was dirt roads and around 1960 they put pavement down. We have cows and horses and chickens still in Sunnyside.

Aubrey Calaway: As the oldest Black neighborhood in southern Houston, Sunnyside has suffered from decades of environmental racism. The main culprit? The Sunnyside landfill. Residents just call it the dump.

Curtis Dockery: I mean it was horrible. You've got garbage, you've got manure from animals, you've got all kinds of stuff you can imagine the smell would go out into the community. And I don't know how much it had to do with sickness in Sunnyside, but I do know that a lot of people in Sunnyside died from cancer. A lot of people.

Aubrey Calaway: After a young boy drowned inside the dump in 1967, civil rights organizers began calling for its closure. The city finally closed the dump and nearby incinerator in the 1970's. But even though the dump was capped, the site was never rehabilitated. Decades later, it seems like that might finally change.

Mayor Sylvester Turner [PRESS CONFERENCE]: And it is my great pleasure to report that we have received approval from the Texas Commission for Environmental Quality, TCEQ, to proceed with the Sunnyside Solar Farm Project.

Aubrey Calaway: This past April, Houston Mayor Sylvester Turner announced that the Sunnyside landfill would be converted into the largest urban solar farm in the United States. In total, 52 megawatts of solar panels will be installed over the 240 acre site. That's enough electricity to power 12,000 homes. Efrem Jernigan, a longtime Sunnyside resident, is part of the team that made it happen. He gave me a tour of the neighborhood on a sunny day this past May.

Efrem Jernigan: We're going to go to the road that for the last 70 years was called incinerator row. But we're going to change it to Solar Boulevard.

Aubrey Calaway: Efrem is vice president of Sunnyside Solar LLC, a company formed in partnership with the two solar energy developers working on the project. It only takes a few minutes to drive from Efrem's childhood home to the former landfill site.

Efrem Jernigan: There are 230 acres of trees to our right. Everything to the right is 50 megawatts of solar going to the grid. Everything to our left is what's going to be community solar, which is going to be two megawatts that's going to go to the grid and we can sell it to the community at a discounted rate.

Aubrey Calaway: In addition to affordable renewable energy, Efrem is working with the city to create a range of other community benefits, including an on-site agricultural education center and a solar workforce training program. The Sunnyside Solar project began as a C40 Reinventing Cities competition proposal. After winning the competition in 2019, the project became a centerpiece of Houston's Climate Action Plan and Mayor Turner's Complete Communities Initiative. To learn more about this, I spoke to Thomas Pommier, senior climate sustainability lead in the mayor's office of Resilience and Sustainability.

Thomas Pommier: The Office of Sustainability saw an opportunity to convert the former landfill into an asset that could contribute to reducing carbon emissions, but also address a long standing environmental injustice.

Aubrey Calaway: The project is a key step towards Houston's goal of becoming carbon neutral by 2050, in part by generating over 5 million megawatt hours from local solar projects per year. Despite international praise for the project and official rhetoric around environmental justice, some community members like Curtis Dockery feel left out of the conversation.

Curtis Dockery: It seemed like that solar farm project was developed downtown and without the knowledge of the community. And we still don't know a whole lot about it.

Aubrey Calaway: While the city does not manage direct communication with Sunnyside residents, Thomas Pommier said he expects to see continuing support both within the community and in other cities.

Thomas Pommier: We were recently at a meeting of climate mayors And the mayors were talking about how they do steal ideas from each other and that it's a good thing because when a good thing is done somewhere, it should be replicated elsewhere if it can have similar benefits for other communities.

Aubrey Calaway: For Climate One, I'm Aubrey Calaway.

Greg Dalton: You're listening to a conversation about how cities are innovating in face of the climate crisis. This is Climate One. Coming up, how one city is demonstrating the financial case for deconstructing and re-using building materials from vacant buildings.

Morgan Grove: In thinking about how we assemble in a sense the financial deal for this. You have the two historic ways that we think about this is you have profit you just make money. You have revenue which is things that come from taxes and fees and everything. And then you have avoided cost. And when we put avoided costs into this financial calculus building deconstruction is way ahead.

Greg Dalton: That's up next, when Climate One continues.

Greg Dalton: This is Climate One. I'm Greg Dalton. When buildings are abandoned or condemned, they often get demolished and dumped into landfill. But now, the US Forest Service has partnered with the city of Baltimore to hire former inmates to salvage wood from vacant buildings and make it into furniture and other products. Research scientist and team leader for the USDA Forest Service, Morgan Grove, describes "the Urban Wood Project" as "creating wealth from waste,"

Morgan Grove: more wood goes from urban areas into landfills and is actually harvested from the US national forests. And so, one of the key things is for us to figure out ways to use that wood where

it historically would be treated as a waste and to create wealth. And that wealth is in many forms. One of which is in using the wood and repurposing it for flooring for the wood chips the mulch the compost for the lesser value materials but also for making furniture. But the creating wealth goes beyond that, it goes to how we create jobs particularly we're focused on creating jobs for people who have barriers to employment. And in doing so, we're creating opportunities for them to earn a living and then become productive in society being able to own a house as well as at the same time reducing the costs of welfare that we have in order to support them when they're not able to work.

Greg Dalton: That's quite interesting equation there that you know to not dispose of wood and not to dispose of people and lives. I got to admit that when I hear that the U.S. Forest Service is involved in something as urban as this, that's a surprise to me. I'm used to seeing, you know, U.S. Forest Service out in, you know, the rural West, etc. What's the role of the Forest Service in this urban situation?

Morgan Grove: Well, the definition of the chief of the Forest Service is the chief or the sort of caretaker of all forests, whether it is federally owned land whether it is a street tree whether it is a tree in the backyard that the official definition of the chief of the Forest Services that person, they're responsible for the thinking about the care of all those trees. In a way when we're taking care of wood that's coming out of deconstructed homes were reaching back 100 years in a sense. And a lot of the wood that has appeared in those homes are now being deconstructed that have reached the end of their life cycle are in cities when they had major building booms between 1900 and 1930. And that's when a lot of wood all growth forests were cut down in order to build homes in urban areas. And that wood when it was cut down was usually somewhere between 3 to 400 years old. It will never exist again in the history or future of the earth and it is really beautiful, beautiful wood. So, in a way we're reaching back in that. Historically, the Forest Service when it first began was a land reclamation organization. We were responsible for trying to bring back the forest in the Eastern United States that had been clear-cut and the forests were gone the wildlife was gone. There is terrible flooding terrible water quality, and those communities had depended upon the forests. Those communities were also hard-hit. And so, in a way one we're returning to our roots of being a land reclamation organization that's linking place in the environment as well as the communities in trying to bring back and improve the environment and really going beyond sustainability to think about how we create even better environments.

Greg Dalton: And one of the goals you've talked about creating furniture with some of this supply from reused wood. And I understand how that will, you know, harvesting wood from buildings means, some tree somewhere is not getting cut down the supply that wood. And one of the goals for the project is to create an urban wood economy. So, help us understand a little more other than furniture. What is this urban wood economy look like?

Morgan Grove: So, that urban wood economy has many different forms. And one can think of what's the most valuable use of the wood. And that could be wood that's going into furniture for making chairs, making tables making bases to lamps and things like that to then making flooring and making interior siding for walls and so on. we have the Exelon company here in Baltimore and its entire interior is made from wood that was harvested or taken out of deconstructed homes of Baltimore. So, you have those kinds of interior applications, then we can use wood also for traditional means by which to create compost and mulch and those kinds of applications. And then we have some new opportunities. One form is what's called thermally modified wood where we take wood that historically has not been very useful because of the way the crane turns or the way the wood decomposes. In the case of the Mid-Atlantic a tree species that is like that is called tulip poplar. And with thermally modified wood we basically bake it and we take all of the moisture out of the wood. And so, we're creating carbon fiber. And it doesn't decompose at all. we're finding a good

use for trees that have grown and we're avoiding the use of trees that really are really important for biodiversity and we're doing it in a local way. And then the other opportunity that we have is something called biochar. And biochar is basically in a way making charcoal and it is really effective for improving water quality improving as water filters through soils. It's important for creating and improving soil in urban areas. And it's also a way to put carbon back into the system and retain carbon rather than us losing carbon into the atmosphere.

Greg Dalton: Right. Carbon is often talked about as the enemy. And carbon is not the enemy it's just having carbon in the right places in the soil and other places not in the atmosphere. So, one estimate says there are 30,000 vacant buildings in Baltimore. And as someone I'll confess whose image of Baltimore was shaped by the wire; I can envision that. But what's the economic case for using wood in those buildings?

Morgan Grove: On the number side the city estimates that they have in public ownership about 17,000 vacant homes. When you add the privately component of the vacant homes, we think we're around maybe 40 or 41,000 vacant homes. The cost of demolition is somewhere around \$9500. The cost for deconstruction is about \$11,000. And it takes about two people to demolish the building. It takes six people to deconstruct the building. And deconstruction we reuse 95, 96% of the material of the wood and the brick and you know the stuff that we are unable to use because it has lead paint in it or has asbestos in it. So, those are some of your first numbers then the cost of incarceration in the state of Maryland is \$37,500. The rate of recidivism in the city of Baltimore is about 48%. So, you're hiring three more people three more people to do things and you are keeping people out of prison. The rate of recidivism in the building deconstruction program is somewhere around .2%. So, we're keeping people out of jail we're saving money on that side. Then we're also able to sell all that wood and all that brick that's causing you know a revenue benefit that then has us if you start to add all those things together about employing people. The revenue from employment taxes and things like that the revenue benefit of creating jobs and improving safety in these neighborhoods. And you start to think about reducing the cost of incarcerating people then we're way below what that cost of demolition was. And so, in thinking about how we assemble in a sense the financial deal for this. You have the two historic ways that we think about this is you have profit you just make money. You have revenue which is things that come from taxes and fees and everything. And then you have avoided cost. And when we put avoided costs into this financial calculus building deconstruction is way ahead. And that seems quite compelling to reconstruct buildings and reconstruct lives.

Greg Dalton: So, if this is so compelling is it scaling to other cities is it scaling even within Baltimore? Sounds like a pretty, the math you describe is pretty compelling. If we can get our head around avoided costs, which is sometimes hard to do.

Morgan Grove: It is. The avoided cost it starts to play in now where as we look at social impact financing or environmental impact financing it becomes part of the deal. That where in the Forest Service and other part of the Forest Service is focused on this novel financing model set that we can engage with. There is a case for this scaling to other places. And we've actually been surprised when we give presentations with the Forest Service the landfill operator seems to be the most interested group of people in all of this and their motivation as well being just keep it out of my landfill, I'm all for it. You also have police departments who are also very interested in this because if you can create jobs and you can reduce the rate of crime, social people who are those returning citizens they see that benefit as well.

Greg Dalton: What are the lessons learned in Baltimore that other cities should pay attention to as they think about replicating this program harvesting wood and reusing it.

Morgan Grove: Well, The Forest Service has what we call urban wood academies and we have people coming and usually it's three people from a city so that they all are gaining knowledge and they, it's really fun you see them talking to each other about how they could do this in Philadelphia or how they could do this in Sacramento and train them but it's a peer to peer learning. So, these different cities are talking to each other and what's gonna work what isn't gonna work because we need to develop the materials meaning like training materials, but we also need to build the social network of peers that we can help to transform individual cities, but also on a national level.

Greg Dalton: One of the most compelling parts of this story, one that really drew us to it is these formerly incarcerated people these reconstructing lives and keeping people reducing recidivism. Do you know how many people have been gone through this program? How many people the scale of that. And number two, can you give us an example, a personal story of someone who's, you know, an anecdote who's gone through that, who a success story of individual from the program.

Morgan Grove: Sure. Well, in the case of the building deconstruction that was going on in Baltimore. There are about 200 people who went to the program. And you have people who I mean there are two people who I became friends with frankly friends with. And I would show up on the deconstruction site and they fuss at me if I didn't bring coffee is that you know one individual who admits that he was involved with a robbery that also resulted in the baker being murdered. And he went to jail for that. He came out he got involved in the building deconstruction activities. He became a foreman for the site. He became extremely knowledgeable, not only about deconstruction but also how to work in these neighborhoods. And the key thing is that we were involved in hyper local employment like we're really trying to hire people from these neighborhoods. And so, this one person who became a foreman he was able to have a secure income and in Baltimore we know that once you are able to a person has an income over \$25,000 that sort of the inflection point where they're gonna have stability in their life. And he had more than \$25,000 he was able to get married with his girlfriend. He was able to buy his own house. He was able to be able to put his daughter through college. And, you know, this was really transformative for him. Another woman who worked on it and she been in and out of jail and she had a long history of drug abuse she was a grandmother. And she was a foreman on the whole brick processing side of things and she ran the show. And, you know, she had all these guys organizing the brick processing part of things. And the income and the motivation to work in the sense of pride and accomplishment of work she got cleaned up. She had a job and she; you know, it was really important for her among everything else to just be able to be present for her grandchildren and say to them I have a job. I have a crew. I'm the boss. I'm here I'm present.

Greg Dalton: Morgan Grove is Research Scientist for the US Department of Agriculture Forest Service in Baltimore working on the wood economy with the Urban Wood Project. Morgan, thanks for sharing the stories of reclaiming wood and personal redemption.

Morgan Grove: Thank you. My pleasure to be with you.

Greg Dalton: On this Climate One, we've been talking about how cities are taking the lead on buildings that reduce carbon emissions and provide jobs and better quality of life. Climate One's empowering conversations connect all aspects of the climate emergency. To hear more, subscribe to our podcast wherever you get your pods. Talking about climate can be hard-- but it's critical to address the transitions we need to make in all parts of society. Please help us get people talking more about climate by giving us a rating or review if you are listening on Apple. You can do it right now on your device. You can also help by sending a link to this episode to a friend. By sharing you can help people have their own deeper climate conversations.

Brad Marshland is our senior producer; our producers and audio editors are Ariana Brocious and Austin Colón. Megan Bisciegli is our production manager. Our team also includes Sara-Katherine Coxon. Our theme music was composed by George Young (and arranged by Matt Willcox). Gloria Duffy is CEO of The Commonwealth Club of California, the nonprofit and nonpartisan forum where our program originates. I'm Greg Dalton.