

Economic Architecture Podcast, Episode 4 Transcript:

The following transcript has been edited for clarity:

Stuart Yasgur: Hi, I'm Stuart Yasgur and this is Economic Architecture, the podcast.

When it comes to wildfires, we're in it together. Our risk from wildfire depends on what we do to our homes, but it also depends on what our neighbors do to theirs.

That means when we take the steps to harden our homes and make them resistant to fire, we reduce the risk for our neighbors, and it means that reducing our own risk from fire depends on our neighbors taking the steps they need to in order to harden their own homes.

So how do we get a whole community to change their homes and make them resistant to wildfires?

And how do you get a community of people to do this in a short amount of time? If they've never done it before, they don't know what to do or who to call to get it done. It can be expensive and confusing.

Mark Brown: I remember when solar was first being installed in my neighborhood and you would see solar panels pop up on a house and next thing you know you see people knocking on that person's door.

Where did you get those solar panels? And then you start seeing the solar panels, uh, grow, within a community. And I hope that we're going to be able to do that with home hardening defensible space.

Yasgur: There are times when you speak with an innovator and it's just easy to see the promise of their idea and a deep passion for the issues they're trying to solve. My conversation today with Mark Brown was one of those moments.

Mark is the executive officer for the Marin Wildfire Prevention Authority, assuming the position after serving for nearly 30 years with the Marin County Fire Department.

Marin County is in the San Francisco Bay area. Over 260,000 people live in Marin County on over 340,000 acres of land. It's an area with a lot of wooded and wildlands that are susceptible to wildfires and many homes are located close to the wildland and urban interface, what some experts called the WUI, which is where there's more risk that wildfires will cross over and become a threat to human life, community, and property.

In our conversation, we talked about Zone Zero, which is an actionable standard that can be used to reduce risk and vulnerability to wildfire.

Experts suggest that if every home, or at least many homes in Marin County applied Zone Zero, it could dramatically reduce the risk from wildfire.

So the question is, how do you get homeowners to start implementing Zone Zero? And how do you get homeowners to implement Zone Zero quickly? It's not easy to do because this is entirely new to a lot of people.

Mark Brown and his colleagues at the Marin Wildfire Prevention Authority are taking that challenge head on with a structural approach.

If they're successful, when they're done, many homeowners in Marin County will have hardened their homes by working with service providers to implement Zone Zero. They will have created an entirely new market for Zone Zero services, and they will have developed a model that could be spread to communities across the country that are also at risk from wildfires in this situation.

We can't forget that time is of the essence with fire season getting longer and more severe. We can't know when there may be a fire that threatens Marin County and if the changes aren't made before a fire, then the changes may be too late.

Yasgur: Hello, Mark. Thank you so much for taking the time to speak with me today.

Brown: Yeah, you bet. Thank you for inviting me.

Yasgur: Would you tell us a little bit about yourself, and how did you get into this work?

Brown: You know, I'm the executive officer for the Marin Wildfire Prevention Authority. Prior to that I worked for the Marin County Fire Department for 30 years, retired as Deputy Fire Chief. And our organization is very much a wildland firefighting organization. We are what's called a contract county with Cal Fire. And I was operation Section Chief on a Cal Fire Incident Management team for 15 years, assigned to some of the largest and most devastating fires in the state's history.

I've seen the change in the wildfire behavior in my 35 plus year career. I've seen what is destroying homes and you know, I saw that we need to get a lot more work done before fires ever happened, rather than chasing fires.

And every time a wildfire ignites, our firefighters are behind in the race. The fire has a head start. So, I decided it was time to focus my efforts into pre-fire work and try to give the firefighters a head start rather than fires having a head start.

Yasgur: That's great. It makes, it makes a tremendous amount of sense, kind of the ounce of prevention versus the pound of the cure. What's the problem you're trying to solve and how are you thinking about it right now?

Brown: Well, some of the fires I was on, we had great wildfire prevention work that had occurred prior to the fire. I'll use the Thomas Fire of 2017 as an example in Ventura and Santa Barbara counties and the community of Montecito.

We had a great partnership with the Los Padres National Forest, and they had created a fuel break right along the Wildland Urban Interface boundary. And then they also had great home hardening and defensible space. And in a location where I would normally assign four crews, I could assign one crew and they would get the work done. Whereas a lot of times, if I didn't have that work done before the fire got there, even the four crews wouldn't get the work done.

So I saw an increase in work production and then when the fire came into the Montecito community, 1300 homes were impacted and 12 structures were destroyed. And so that's a ratio that we would much rather see than what we saw during the Campfire. You didn't see that type of ratio.

So our problem that we're trying to solve is to get all of our residents engaged. But in partnership with the public agencies, whether it's law enforcement, fire, public works, everybody who has a stake in the game, bring them all together and create a solution that covers all realms, whether it's private industry, creating new products, government putting a focus on wildfire mitigation.

Before fires ever occur, we must bring the residents along for the ride because they have a key component. It's their homes that are burning. It's their responsibility to make sure that their homes are not igniting.

Yasgur: Right. And you know, in that description, the fire breaks, the defensible space, the home hardening and some of that is around in the court of the homeowner to address.

Brown: Absolutely. Home hardening, Zone Zero, and their defensible space around their home, that is the resident's responsibility. And with Marin Wildfire, we're trying to set ourselves up in a position to support the residents to take the appropriate actions on their own properties.

So, home hardening is the structure itself, and that is using non-wood sidings to be less combustible, in closing eaves, so when the embers blow up against the house, they don't roll up into the eaves and go into the attics, vents that are eighth-inch mesh or smaller. Vents, they're designed to stop embers from coming in. Then, having nothing combustible from zero to six inches off the ground.

Then another important one is having, when a fence comes into a house or a gate comes into a house, to have that last five feet of that fence or gate is not combustible. Cause those fences act like a wick and bring the fire to the house. So that's the home hardening aspects.

Then, the Insurance Institute for Business and Home Safety probably is the eighth entity that has done more research in what is destroying homes and wildfires than anybody else. What they've really locked in on is the first five feet around the house. We're calling that Zone Zero. We really want to have no combustible items within Zone Zero. And we all have heard the stories about embers being blown in the neighborhoods.

It's those embers that are causing a lot of these homes to be destroyed. What happens is the embers bounce off the house, fall to the ground, and if there's anything combustible within that first five feet that ignites, that's what ends up burning the house down.

So, we're really focusing on the first five feet of having nothing combustible, and then the next 25 feet, 30 feet from the house, have what we are calling Fire Smart landscaping.

We're not asking people to completely remove everything, but we're asking this organization of the vegetation on their property. So, there's some separation, both horizontally and vertically so that when embers do land in that first 30 feet, if it does catch some vegetation on fire, it's going to be isolated to that one plant and not spread to the rest of the structure.

Yasgur: So that really prompts homeowners to think differently about their homes, right? Like they must think about the material their home's made of, what is connected to their plantings, their landscape, but it's a big adjustment for homeowners. How are you finding homeowners kind of going along that journey?

Brown: It's sometimes difficult, the home hardening aspects, convincing residents that the shake shingle siding that they have is probably the most dangerous siding they can have. That is not a difficult conversation.

The difficult conversation is the cost of replacement of that shake siding. So, we have that aspect of it. In closing eaves or getting vent covers or having what we call a Class A roof, which is would be a non-combustible roof. Those are some easier targets to have, especially, since the roof has a lifecycle that needs to be replaced, where a lot of times siding doesn't have a lifecycle. Then residents aren't necessarily excited about replacing their siding, if it's a combustible siding.

So those are some of the challenges of Zone Zero though it is a relatively inexpensive thing for people to do. We're asking them to push the combustible items away from their house by five feet.

But there's a lot of emotional attachments that people have, to that first five feet, the vegetation that they've planted up against their house, the aesthetic value. And people are having a hard time wrapping their minds around what their homes will look like without the vegetation being up against the house,

The city of Berkeley just passed a Zone Zero ordinance, and they are receiving tremendous outcry from their residents, including the threat of a lawsuit to stop the Zone Zero ordinance.

We joke, but it's a real story. We hear about Grandma's roses. Those were Grandma's roses that were planted, and we can't move them away. We can't lose them. So, it's that portion of Zone Zero that's difficult, but that's one side of the coin. The other side of the coin is that we have many residents who are absolutely convinced that Zone Zero is a must, and they want Zone Zero.

They are willing to get Zone Zero put in place at their house, but they just don't know how to do it. And so that's why we're creating what we're calling Zone Zero in a Box, and that is for our residents who want to have Zone Zero, whether it's because they've come to the conclusion themselves that Zone Zero is smart, or they know that Zone Zero ordinances are coming down the pipe, they might as well get ahead of it.

But I also think the insurance industry is going to be a key driver in Zone Zero compliance. I have a feeling the geographical footprint that the insurance industry wants for Zone Zero, it's going to be larger than what a lot of our municipalities are going to put in place through their Zone Zero ordinances and residents are likely to receive a notice from their insurance or their insurer.

If you want to continue insurance with us, you will be Zone Zero compliant and we will send an inspector out to make sure that you are Zone Zero compliant. That's my prediction.

We created Zone Zero in a Box to help people get to Zone Zero compliance, and we're looking at four avenues for Zone Zero in a Box.

The first avenue, we're calling it the full-service aspect or the full-service model. And this is for the people that have the financial resources to be able to get this done.

They just want to hit the easy button, and we'll have a list of contractors that can do everything in the realm of home hardening.

Zone Zero work, whether it's landscape architecture, contractors who can replace siding, fence contractors who can put a non-wood fence in place, people who could enclose eaves and soffits and put in the vents. We'll have all those contractors laid out, and then our staff will walk the resident through.

These are your options. This is what it could look like. And then we'll schedule all the work for that person, for that household. And so, we will also charge that resident a service charge because just like when we had full-service gas stations, it was more expensive to have a full-service gas station than it was for a self-service gas station.

Yasgur: So because homeowners, we don't have a lot of homeowners out there who already have experience implementing Zone Zero around their house. They don't, they may, they may not have relationships with the contractors.

They may not know what questions to ask, let alone how to write all those contracts and everything else. And so you're actually trying to do all that work for them. So this will be really easy and actionable.

Brown: That's right. Especially when it comes to fences, there's not a lot of contractors that are focusing on non-wood fences. And so, as part of Zone Zero in a Box, we are going to have a training program for all of our contractors. For them to be on our list, they need to have gone through our training program. And so, they know how to create Zone Zero and then they can implement it for the resident.

Yasgur: It makes a lot of sense because we have not been creating Zone Zero or implementing Zone Zero, so we don't have the whole infrastructure that we need, right? We don't have the contractors, we don't have their knowledge of the materials, how to install it, how to install it well, so it looks aesthetically pleasing, all those kinds of things.

So rather than facing a chicken and egg problem of not having customers, cause we don't have contractors, not having contractors because we don't have customers.

You're going ahead and helping to solve that for them so we can get this moving forward more quickly.

Brown: Yeah. And we've been working with our builders' associations and our landscaping associations and trying to help them realize that this could be a profit center for them and if they engage and if they're one of the early engagers in this, then perhaps they could start making some profit out of this.

Yasgur: Absolutely. And because this is also the direction, we're all going to have to go.

Brown: Right. And, you know, perhaps a contractor knowing that they are going to be one of our Zone Zero contractors can start stockpiling some of, let's say it's the vents and they have a preferred vent that they like to use. They can start stockpiling that equipment, that materials, buy it at a bulk rate, have it cheaper, and then be able to pass those savings on to our residents as well.

Yasgur: Absolutely. Cause for the contractors, they know the demand is coming because everybody must make this shift and so they can start to anticipate that and position themselves to be able to serve that demand. That's great. You named the first avenue, and you mentioned that you have a few others that would be the full service.

Brown: We would charge a service charge for the resident for full service. The self-service would be for those people that want to get it done but they don't want to pay the full service charge. Or maybe they want to be more hands-on with what their Zone Zero looks like. And so they'll have our approved list of contractors and they will interact with the contractors directly themselves. And then, in both the full service and the self-service, the resident will pay the contractor directly.

Marin Wildfire will stay out of the financial loop for that. And so that's the self-service model. The third model will be geared toward, whether it's Firewise communities or neighborhoods that want to come together and have multiple houses in a small geographical area. And so now we can start getting bulk discounts from our contractors because of the cost of them moving their equipment in and out. If they have a house here that they're working on for the morning, and they have a

house that's 5, 10, 15 miles away, there's a time loss in moving their equipment and materials.

So, when we put out our request for proposals for contractors, we'll set a threshold that if you have x number of houses in this geographical area, you will provide a discount to the residents. So, there's, there's benefits, a couple different benefits for that. One is a discount for the residents. Two, if only one house does home hardening and Zone Zero, then are we creating fire adaptation in that community?

Whereas if we can start getting a large percentage of the homes. To harden their homes to create Zone Zero. Now we start getting fire adaptation at the community level. And again, this would be where the residents are paying the contractors .

If I'm a homeowner and I recognize that there's a level of risk that I face, and I'm thinking about hardening my home, I recognize that even if I do my home, which is better than not doing it, I still face risk if my neighbor doesn't do it and they tell their neighbor.

Yasgur: Right. But we usually do, when it comes to our homes, we usually do all these activities as individuals. You're talking about creating opportunity for people to act in community. Because we all have a shared interest and a vested interest in what each other are doing. So, this is a mechanism where we can start to work together and we get better hardening in the face of fire, but also economic benefits from doing it.

Brown: You know, there's a lot to be said about peer pressure in communities and that's why one of the reasons I love the Firewise communities, through the National Fire Protection Association. We're finding that when we go and inspect a Firewise community, they are three times more likely to open that report we give them and three times more likely to take action on the recommendations that we're making. So that's why I think the Firewise community aspect can really work.

I remember when solar was first being installed in my neighborhood and you would see solar panels pop up on a house and next thing you know you see people knocking on that person's door.

Where did you get those solar panels? Then you start seeing the solar panels grow within a community. I hope that we're going to be able to do that with home hardening and defensible space.

The last aspect of Zone Zero in a Box will be for those who don't have the financial resources, which there are many throughout all our communities, and that's where that service charge that we talked about in full service, we'll use that as a cross subsidy to do the work for those who don't have the financial resources. And we also have grant programs within Marin Wildfire to support residents who don't have the financial resources.

Now, it won't be everything that you have in a full service. Let's talk about, you pull up plants and now you must replace those plants with, whether it's concrete pavers, gravel or something non-combustible, mulch. Whereas the full service, they can pick whatever they want.

When we have the direct assistance model for those who don't have the financial resources, it'll be less flashy. The gate won't be as complicated or as nice as the gate for the full service, but it's still going to be a nice product and they're going to now be fire adapted.

Yasgur: Right. So, you're not compromising by reducing the risk less, you're reducing some of the premium features that they might want in terms of aesthetics and other things.

Brown: Exactly, but it's still going to be aesthetically pleasing to the eye. And, that's right. That's what we're finding is that properties that have had Zone Zero in place for a while. At first, it really popped out at you, but then your eye adjusts to it, and it starts becoming more aesthetically pleasing. The vegetation that was planted outside of the five feet matures, and as your eyes and your mind get used to it.

Yasgur: Yeah, this is the beginning of a large change and a new norm for how we need to think about homes. In the very early days, it's the pioneers, but then soon we start to recognize this is going to become pervasive. And then, unfortunately it's going to be the folks who don't move in that direction, who stick out a little bit.

Where are you in this process? It's obviously, it's remarkable. You know, you're playing this remarkably catalytic role in enabling a community to harden homes in that community. Where are you in this process and where do you see it going?

Brown: We're very early in the process. We just accepted a grant from the Marin Community Foundation, which is funding two positions within Marin Wildfire. For this, we literally just launched the recruitment for those two positions earlier this week. So, we are very early in the process. We also have funding to update the software that we use for our home evaluation and grant program.

It's a software company called Fireside that is in Marin County. We helped fund the development of that software through our parcel tax and therefore we get a lifetime discount on Fireside, which I'm super happy about. But it's also great to see Fireside grow. And they have a footprint, I think in eight states in the nation right now.

And it's an amazing software product, but it's nice to see Marin taxpayer dollars go to a Marin company and bring revenue back into Marin. And we hope to be able to do that with Zone Zero in the Box as well, and have companies that are Marin grown companies realizing profits from the efforts of the tax dollars.

Yasgur: Fireside is remarkable technology and company. And it also, it just demonstrates that when we move from response and we start to focus on risk reduction, there's also productive opportunities for innovation, for creating new businesses, for applying technology in new ways, for creating new kinds of structural innovations in our markets, that can actually generate economic activity as opposed to recouping from a loss.

Brown: We've started discussions with Fireside and they have a thumbnail sketch of what they're going to do to the architecture of their software to make Zone Zero in a Box a reality for us. We plan on onboarding our new employees by the end of August. Then we will start drafting the request for proposals for our contractors and create a master services agreement list.

That'll probably take two months. We'll do the software development at that same period, and then we estimate around November, December, we'll start reaching out to select households and invite them into the beta test of the Zone Zero in a Box, and

then have a more robust program in the last quarter of 25-26, and then by the first quarter of 26-27, hopefully we have it all up and running.

Yasgur: Wow, that, that's great. Obviously reflects how much work there is to do between here and there. I think it's interesting for people to get a glimpse into the innovations that are emerging, right? Because of this, you won't, when you're driving down the streets in Marin, you won't see this yet for several months in the future but the work is already starting now. That's kind of getting it going.

Brown: Yeah. And since this is something brand new, what I described as the four avenues of Zone Zero and how I describe them may very much change by the time we work through all the processes. Maybe some of our ideas aren't exactly falling within purchasing and procurement requirements of a government entity.

So we might have to do some tweaking here and then also as we do our beta tests and interact with our residents, that will definitely drive how we adjust the program.

Yasgur: Absolutely. So, it's kind of wet clay. You'll iterate, you'll continue to change as you learn how this works. Can I ask you to lift your eyes to the horizon? So, like you are moving forward in important innovation. A lot of hard work. You must focus on the short term to get it moving forward. But when we start seeing, you mentioned something earlier, which is about insurance. And when we start seeing, increasing number of homes being hardened. By hardening these homes and potentially hardening them, whole communities, hardening the homes within them, and thereby reducing the risk from wildfires, how do you see that affecting things like insurance? And what role will insurance play here?

Brown: Well, it seems clear to me that even though a lot of insurers are pulling out of California. They're doing it reluctantly. They know that California has the potential for massive profits for them. It has historically until this change in a wildfire environment.

And they want to, from what I understand, talking to a lot of insurers, they want to reengage in California. If we could start getting this fire adaptation, and I think Zone Zero is going to be one of the number one things that they are looking at. Then we will start seeing the reengagement of insurers in California.

And with that, we will see more competition between insurers and perhaps some cost savings for our residents. The number one thing I'm trying to work on is when it comes to insurance, is availability of insurance first. And then after we tackle the availability problem, then we can start talking about reducing rates for the residents.

Yasgur: Right. Absolutely. I think people have heard anecdotally about the lack of availability of insurance, but I think something we're still broadly trying to understand is just how many people really are facing challenges just getting coverage in this environment?

Brown: Well, last year, I received a non-renewal notice, and so I felt the pain of insurance availability. Personally, I was able to find an admitted carrier in California to reinsure my house, and I just got the renewal notice, so I'm not getting a non-renewal a second time. So, I'm happy about that.

Because if I didn't find an admitted carrier for California, I was going to try to find a non-admitted carrier, which has some risks to that, right? You don't have the protections to California department insurance. And so, some areas in Marin, we have seen a 200 to 300% increase in the number of homes that are being covered by the California Fair Plan and one of our communities, upwards to 27% of the homes are on California Fair Plan policies.

Yasgur: Wow. That's this huge number. And so that's really folks who are unable to find insurance coverage elsewhere and now are turning to the California Fair Plan.

Brown: Yeah and then they must have wraparound insurance because California Fair Plan only covers wildfire.

Yasgur: Right. And so now they have a second policy to cover everything else. Then as you're doing this pioneering work, have you heard from other communities? Do you imagine other communities could do something similar or use the model that you're starting to develop in their communities as well?

Brown: Absolutely. While Zone Zero in a Box may be a new idea, some of the concepts behind it are not. We're borrowing from other communities ourselves. Boulder, Colorado has the wildfire partnership program that we've been keeping a

close eye on and learning from them. Berkeley, when it comes to Zone Zero ordinances. The North Shore of Lake Tahoe has some very innovative programs going on, especially regarding community resilience, driving the availability of insurance. They've got a real successful model that they're working on there that we're learning from.

Yasgur: That's great. As you think about it today, what do you think the biggest structural changes are that are needed or critical? If you could write your wish list, what would some of those be?

Brown: That's a tough one. The vantage that Marin Wildfire has is that my staff and I only think about wildfire mitigation. That's 100% of our mission. Whereas a standard fire department, and you look at a fire department, think about all the stressors and all the different things that that fire chief must consider, and wildfire mitigation is just a small percentage sometimes of what their mental bandwidth that they're putting forward. So, having a unique organization that focuses on wildfire mitigation only, I would love to see more and more of that in our communities. Then that can help drive our residents to understand their roles and responsibilities. And not rely on the fire departments to come and save the day. They need to be a part of the solution.

I think if those two aspects, being able to have an organization that is solely funded and sole purpose is wildfire mitigation, and then also getting our residents to partner with us as part of the solution.

Yasgur: That's great and tees up my next question, which is, what's the opportunity for action? What would you ask if folks are saying, 'Okay, what can I do today, tomorrow to move in this direction? What should that be?'

Brown: Take baby steps. The old cliché, how do you eat an elephant? One bite at a time. Sometimes they see our inspection reports and they see that long list of recommendations and or requirements, from statutes or ordinances, and they just throw up their hands and think, there's no way I'm ever going to get there.

So have a multi-year plan of attack to get there. Our recommendation is a house out approach. Start at the house and work out from there. Maybe you might have to defer

some of the more expensive items till later, such as siding. But let's say you do have shake siding. The number one thing you ought to be doing is making Zone Zero. So that when those embers land, it's not going to ignite something below that shake siding.

And so that is how you can have that step by step process. A thought process that we want to get rid of is that there's nothing we can do. If you think that it's futile to create wildfire-adapted communities, then there's no way that you're going to do it. You're not going to put any effort whatsoever.

We need people to understand that their work will make a difference, and we can become fire adapted, and that encourages them to act rather than just throw up their hands and say, well, there's nothing I could do anyway.

Yasgur: Yeah, no, I think that's a great point because when you look at the size of these fires, it seems so massive and so much beyond what any individual can do. But then when you talk about moving, anything that's flammable away from your house, changing your fences, all these things, these are concrete, practical things people can do, can act on today and tomorrow. That's great. Mark, this is great. Thank you so much for taking the time.

I think the work that you're doing is really pioneering and we're very excited to see how it's going to enable homeowners in Marin to start taking action to make their homes and communities adapted to fire and create an example that other communities can learn from.

Brown: That's our goal.

Yasgur: My conversation with Mark was fascinating. He and his colleagues are in the early stages of introducing a structural innovation that will make homes in Marin County more resilient to wildfire. That's a deceptively big undertaking because when you think about it, when you introduce a new structural innovation, you have got to get a lot of people to change what they're doing, and you've got to do it in a short amount of time.

So how do you do it?

Well, there's a common pattern that we see when we successfully introduce a structural innovation. At the beginning, we need to be asking the basic questions. Questions like, is this solution better, faster, and cheaper? If the answers to all those questions are yes, then we may have a superior value proposition that we can offer the stakeholders.

And we do that because we need to be able to offer each of these stakeholders, for example, in this case, the homeowners and the contractors a value proposition that's superior to the other alternatives. That means that for every criterion that matters, what we're offering the stakeholders is better than any of the alternatives, and they don't have to make a meaningful trade off.

Let's walk through this and look how this would work for each of the stakeholders in this case.

For the homeowner who is aware of the fire risk and is inclined to address it, the offer that Mark and his colleagues are extending to them really helps them do a few things.

First, it helps them find a contractor. A contractor that they can potentially have a high degree of trust in. It helps them understand what the terms of the agreement should be with the contractor, and it helps them decrease uncertainty, knowing that the outcome they achieve will de-risk their situation in inappropriate ways. For anyone who's worked with contractors, you know that each of these things could be a big deal

for the contractor, the offer that Mark and his colleagues is extending to them presents a whole new stream of work that they can offer their clients. It helps them potentially get access to those clients and build their pipeline for business.

It also helps the contractor lower their overhead by creating standard agreements and templates and common sets of expectations with their clients. It also helps them have a more positive relationship with their clients who have reasonable expectations that they can meet, and a third party who can help verify that their work meets the standards.

It has the potential to offer them training so they can even learn new skills. If you take all this together, it really has the potential of offering those two key stakeholders a superior value proposition. Once the early adopters have stepped forward, this will have helped solve a chicken and egg problem that really stymies a lot of potential innovations for the homeowners.

There are now contractors who are willing and able and well positioned to perform the work and for the contractors, they now have clients signing up to have the work done. When Mark and his colleagues accomplish this, they will have taken a big step forward to introducing a structural innovation.