Building a **More Resilient America**

Brought to you by Greenbuild

Contents

Experts in the Greenbuild Community

Solutions to today's sustainability issues must involve a collaborative worldwide community. We must build a country that will stand the test of time and lead the rest of the planet in making fundamental changes.

As Tony Cho, CEO and Founder of Future of Cities says,

"The power of change lies in the hands of individuals, who together are more powerful."

— *Tony Cho, CEO, and Founder, Future of Cities*

The Greenbuild Community represents more than 100,000 professionals dedicated to creating green buildings, green communities, and greener tomorrows.

Leaders of this Community helped shape this report by sharing their thoughts on the interconnection between sustainability and resiliency, the real impact of government regulations, and what will be required to reach key sustainability goals.

Thank you to these fellow sustainability leaders. We appreciate your insights, passions, and dedication to the movement.

Sarah Adams, Chief Sustainability Officer, Vert Asset Management
Richard Berliner, AIA, Principal, Berliner Architects
Annie Bevan, CEO, mindful MATERIALS
Arlene Blum, Founder and Executive Director, Green Science Policy Institute
Tony Cho, CEO and Founder, Future of Cities
Eric Corey Freed, Director of Sustainability, CannonDesign
Peter Grabell, Senior Vice President, Dividend Finance Inc.
Nathan Kipnis, FAIA, Principal, Kipnis Architecture + Planning
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Robert Matthew Noblett, Partner, Behnisch Architekten
Ganesh Nayak, Principal, Metier Consulting, Inc
Devesh Nirmul, Executive Director, Counterpointe Sustainable Real Estate
Gerald Olesker, Founder/CEO, ADG Lighting
Josh Richards, Director of Sustainability, Transwestern
Rochelle Routman, Chief Sustainability and Impact Officer, HMTX Industries
Sam Ruben, Co-Founder, Mighty Buildings
Nicholas Rubenstein, Senior Project Manager, evolveEA
Carol Schmitt, Chief Evangelist for Smart Energy, RealPage
Deborah Tan Lucking, Director of Sustainability, Fentress Architects
Brent Trenga, Director of Sustainability, North America for Kingspan

Sustainability vs. Resilience: What's the Difference?

Ask a dozen people what sustainability means and you'll likely get a dozen different answers.

Whatever definition you use, "sustainability" entered the conversation in the early 70's. That's when awareness began to surface about the finite state of Earth's natural resources and the potential for irreparable damage to our planet that could affect its ability to sustain human life.

Resilience is "the capacity to recover quickly from difficulties (Oxford)." When referring to our built environment, it's about developing buildings and communities that can withstand natural and manmade disasters.

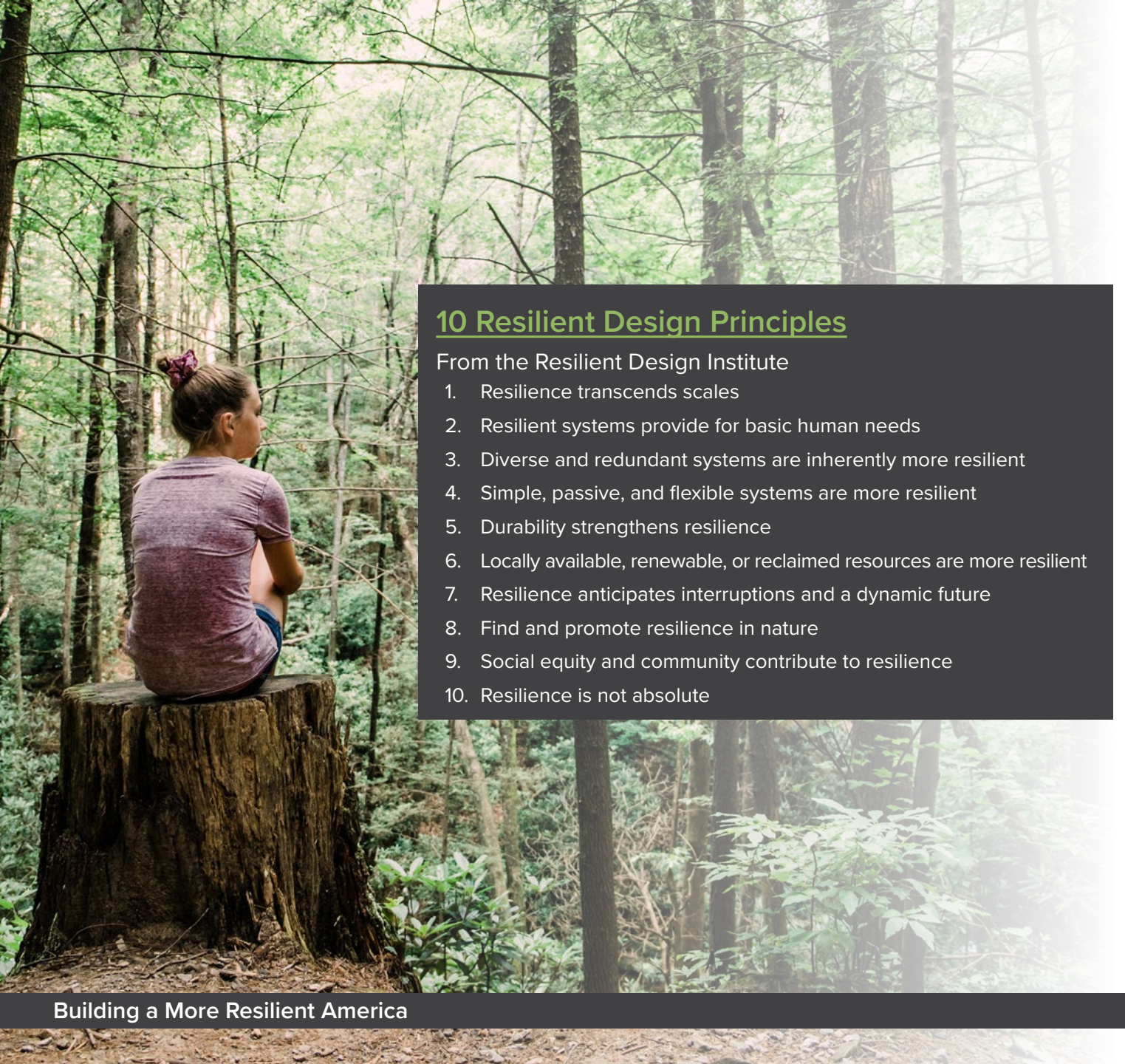
The term resilience has become a dominant topic in the sustainability conversation over the last couple of decades.

And resilient design has taken center stage as those responsible for the built environment strive to create buildings and communities that can:

- Counter the growing intensity of natural disasters wreaking billions of dollars in damage.
- Keep people and their property healthy and safe
- Flex to adapt to changes in the environment

See a brief history of green building in this infographic.

SEE INFOGRAPHIC



10 Resilient Design Principles

From the Resilient Design Institute

1. Resilience transcends scales
2. Resilient systems provide for basic human needs
3. Diverse and redundant systems are inherently more resilient
4. Simple, passive, and flexible systems are more resilient
5. Durability strengthens resilience
6. Locally available, renewable, or reclaimed resources are more resilient
7. Resilience anticipates interruptions and a dynamic future
8. Find and promote resilience in nature
9. Social equity and community contribute to resilience
10. Resilience is not absolute

Some would say that our inability to prioritize sustainability has directly created the need for resiliency.

In the words of our community experts...

"Sustainability and resilience are sometimes used interchangeably, and while they're related, they're not the same. When originally developed, sustainability was meant to ensure the survival of our planet and the minimization of resources. Expanding the idea of sustainability to resilience means understanding the strengths and weaknesses of the systems we depend on and encourages a systemic, multi-scaled approach."

– *Dr. Angela Loder, VP Research, International WELL Building Institute*

"I have always found the definition of sustainability contained in the 1987 Brundtland Report very succinct and helpful in terms of orienting our efforts: 'Sustainable development is a way to meet the needs of the present without compromising the ability of future generations to meet their own needs.' The term 'resilience' has emerged over the past 10 years in response to the built environment's need to respond to rapidly evolving climatic and natural conditions, conditions that have worsened largely as a result of mankind's failure to embrace precisely that definition."

– *Robert Matthew Noblett, Partner, Behnisch Architekten*

"Sustainability is about the long-term viability of a resource, asset, or system. But sustainability can only be achieved if that long-term viability is shared across all overlapping resources, assets, or systems – not in isolation. Resilience stems from the holistic view of our world, minimizing shocks to its (eco)systems while supporting their quick return to equilibrium."

– *Josh Richards, Director of Sustainability, Transwestern*

The Relationship Between **Sustainability & Resilience**

However we got here, we can agree that sustainability and resiliency are deeply interconnected. We can no longer think about one without the other.

When we asked community experts to describe how sustainability can contribute to resilience, their responses brilliantly captured the relationship between these two concepts.

- Sustainability builds resilience
- Sustainability is the catalyst for resilience
- Sustainability done right eliminates the need for resilience

Sustainability and resilience go hand in hand.

"Sustainability and resiliency go hand-in-hand. Sustainability requires thoughtful resource management, which directly impacts resilient outcomes."

– *Nicholas Rubenstein, Senior Project Manager, evolveEA*

"There is now a huge weight sitting on the shoulders of architects who are designing new buildings and retrofitting old ones. They must create resilient buildings that can withstand extreme weather from climate change, while using sustainable materials that reduce embodied and operational carbon. Materials must be used efficiently and must be durable. Resilient buildings must feature materials that have longer life cycles to reduce the number of refit/replacement cycles."

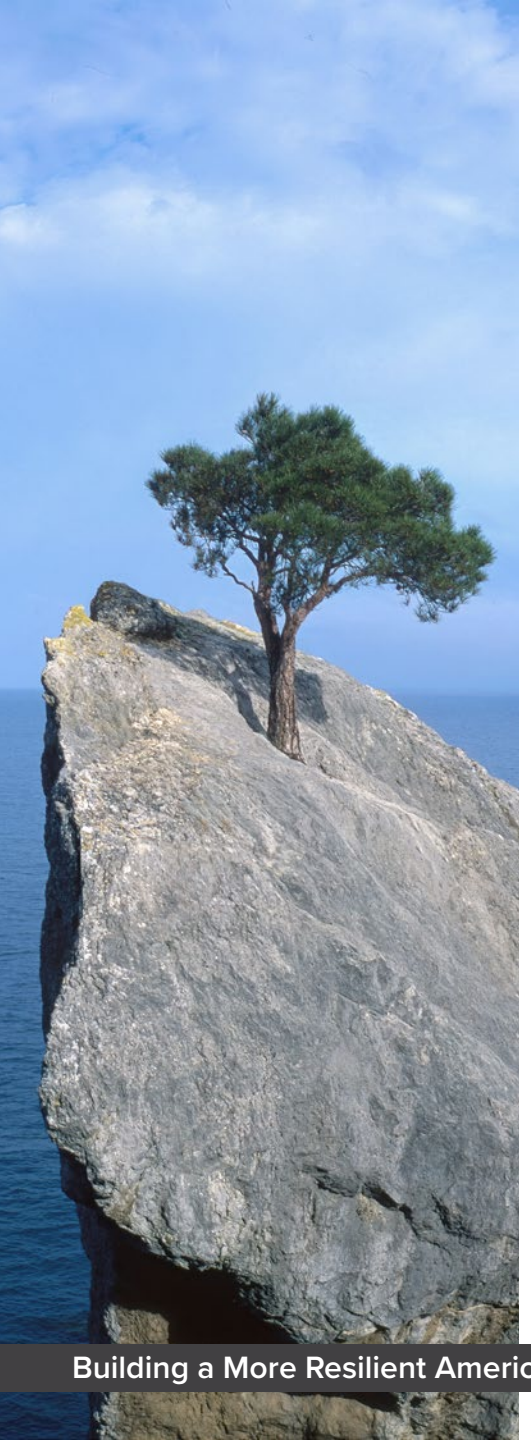
Brent Trenga, Director of Sustainability, North America for Kingspan

"A pragmatic way for sustainability to contribute to resilience is [by] (1) being able to bundle high-performance building improvements / features together to maximize the benefits and (2) implementing measures that contribute both to sustainability and resiliency."

– *Devesh Nirmul, Executive Director, Counterpointe Sustainable Real Estate*

"I think sustainability is a necessary component of a resilient system, be it at any scale. Resilience is the capacity to absorb shocks and adapt to change; sustainability helps cushion those shocks (which are occurring more frequently due to climate change) and helps the renewal and restoration quicker and with a lesser impact on both man and nature."

Ganesh Nayak, Principal, Metier Consulting, Inc



Sustainability builds resilience.

"With a sustainable built environment, a smaller carbon footprint, a thriving local economy, and healthier people, we create strong communities more prepared to recover from the uncertainties of modern life."

– *Richard Berliner, AIA, Principal, Berliner Architects*

"I think of the bigger definition of resilience: how sustainability can enable the earth to bounce after these disruptions while avoiding future ones."

– *Rochelle Routman, Chief Sustainability and Impact Officer, HMTX Industries*

"Sustainability strategy enables one to consider a more long-term thinking and approach to risks. We need to consider sustainable approaches to all aspects of the built environment to ensure the resilience of our communities."

– *Annie Bevan, CEO, mindful MATERIALS*

"Resilient design is the ability to handle natural or manmade disruptions and recover quickly. Having a sustainable home reduces its energy load and therefore makes resilience easier to achieve."

– *Nathan Kipnis, FAIA, Principal, Kipnis Architecture + Planning*

"Expanding the idea of sustainability to resilience means understanding the strengths and weaknesses of the systems we depend on and encourages a systemic, multi-scaled approach. Sustainability can inform resilience strategies through existing reporting structures and knowledge."

– *Dr. Angela Loder, VP Research, International WELL Building Institute*

Sustainability is the catalyst for resilience.

"If mindful sustainable development equates to delivering a building that is more resilient than it would have been under more relaxed standards, then sustainability becomes the catalyst for resiliency."

Peter Grabell, Senior Vice President, Dividend Finance Inc.

"Healthier consumer products and building materials without the six classes of chemicals of concern contribute to a healthier population and environment. Both a healthier population and environment are more resilient to climate change and other stresses."

Arlene Blum, Founder and Executive Director, Green Science Policy Institute

Sustainability done right eliminates the need for resilience.

"Yet sustainability is the way that we break the cycle of more buildings continuing to cause harm to the environment which, in turn, demands ever more resilient solutions. If we successfully implement sustainable development, we mitigate the need to innovate for resiliency."

Robert Matthew Noblett, Partner, Behnisch Architekten

"By creating systems/products that are better able to withstand the impacts of the climate crisis, both those already here as well as those still coming. Additionally, there is an opportunity to contribute to regeneration which helps mitigate the future impacts of the climate crisis."

Sam Ruben, Co-Founder, Mighty Buildings

The Government's Role in **Furthering Sustainable Development**

The Federal Sustainability Executive Order is a hot topic of conversation. The Biden-Harris Administration committed to achieving a carbon pollution-free electricity sector by 2035 and net-zero emissions economy-wide by no later than 2050.

When we asked our experts how Federal mandates have impacted their roles, they responded with a mix of optimism and skepticism.

A bold and much needed move

The majority of our community expressed that new government goals and regulations make it easier to move sustainable projects forward. Markets for sustainable development and rehabs of existing structures are expanding. And property owners are paying attention.

"The new regulations are making it clear we need to push our clients on full electrification, better refrigerant management (low GWP), and avoiding unnecessary demolition."

– *Eric Corey Freed, Director of Sustainability, CannonDesign*

"[The government] has made my advocacy for sustainability more compelling and urgent. [This] makes my job easier in one way and more difficult in another [because there's] more to cover, more to research."

– *Deborah Tan Lucking, Director of Sustainability, Fentress Architects*

"The infusion of cash and focus on emissions by the current administration has led to more cash being funneled into programs such as HUD Green Loans and Department of Energy. Commitment to achieve Net Zero as a nation cannot be understated."

– *Carol Schmitt, Chief Evangelist for Smart Energy, RealPage*

"Having building performance standard mandates at any level--Federal, state or local--are forcing building owners to confront environmental obsolescence in their properties."

– *Peter Grabell, Senior Vice President, Dividend Finance Inc.*

Get a breakdown of the key points in the Executive Order, what implications it has on your teams, and how this can make your community more resilient.

GET THE WHITEPAPER

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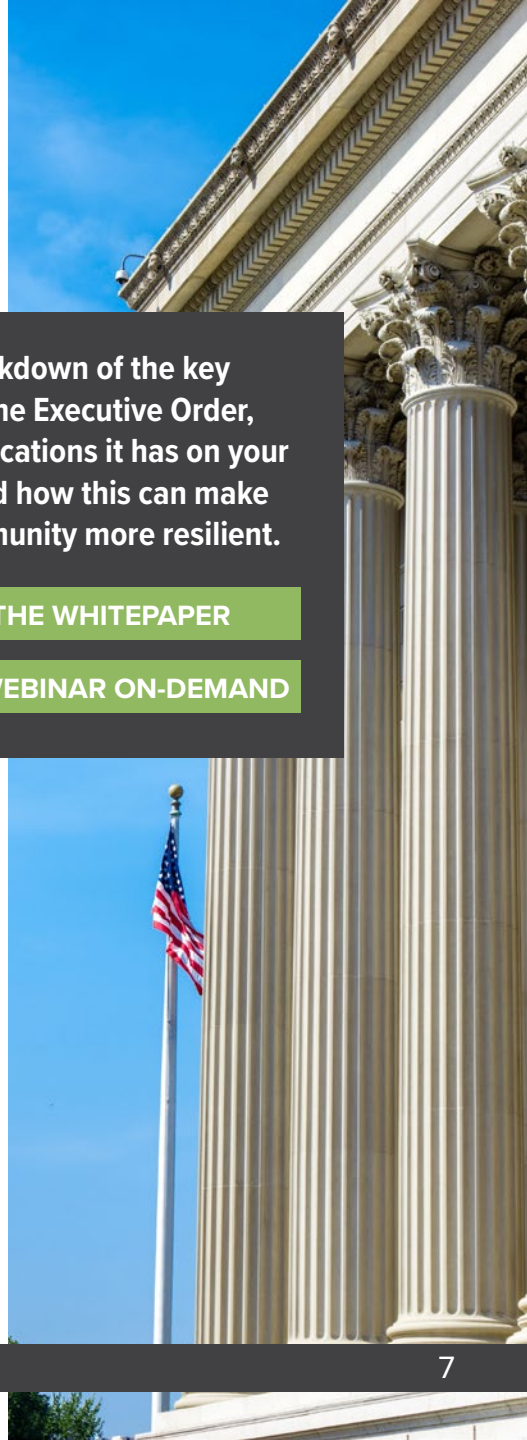

"Federal mandates and building codes that require improved building performance help us in convincing owners to make greater capital investments in more energy-efficient and healthier buildings. These mandates and building code changes provide the stick, and the benefits of reduced operating costs and improved student performance are the carrot."

– *Richard Berliner, AIA, Principal, Berliner Architects*

"Federal mandates—and even just the possibility of regulation—can motivate manufacturers, trade associations and industry leaders to collaborate with us to learn about the potential harm of some chemicals and better alternatives."

– *Arlene Blum, Founder and Executive Director, Green Science Policy Institute*

"Federal mandates have effectively baked sustainability goals and project requirements. Value engineering is traditionally a first-cost exercise, which usually incorporates key components to sustainable design. Now that goals are based on a triple bottom line rather than first-cost, measures that result in sustainable outcomes are less likely to be removed from projects."

– *Nicholas Rubenstein, Senior Project Manager, evolveEA*

"It is fantastic to see the Build Back Better program (and other bills) feature a focus on operational and embodied carbon reduction. We must as an industry collaborate throughout the entire ecosystem to figure out ways to procure lower carbon materials."

– *Annie Bevan, CEO, mindful MATERIALS*

A Long Way to Go

Some professionals feel that Federal mandates are inadequate and have little to no impact.

"By necessity, federal, state and local mandates tend towards the lowest common denominator of development as well as what is feasible politically, which in the United States has, unfortunately, been woefully inadequate with regard to the scale of the task."

– *Robert Matthew Noblett, Partner, Behnisch Architekten*

"Building codes remain the primary driver behind sustainable development. It is too soon to tell if the push for government-wide net zero will motivate investors to incorporate similar philosophies in the near-term. It is more likely that we will see a slow evolution of development for several years."

– *Josh Richards, Director of Sustainability, Transwestern*

The Greenbuild team is energized by federal commitments. We also recognize that state, regional, and local governments are critical in furthering sustainable development.

"Movement at the regional and state level has recently been far more impactful on sustainable development. The move to electrify buildings is happening city by city moving residential and commercial buildings away from natural gas pipelines."

– *Sarah Adams, Chief Sustainability Officer, Vert Asset Management*

Exciting work is happening across the country with efficient and renewable energy initiatives. More than 40 cities in California now require new buildings to be completely electric. Carbon-free transportation options are rolling out in cities around the country. And cities in Arizona are embracing the sun and other renewable sources. 14% of Phoenix's energy is from renewable energy.

The Challenges of Reaching **a More Resilient America**

While these signs are optimistic, we still have a long way to go if we want to change our current trajectory. And we face some major challenges in the way of reaching our sustainability and resiliency goals.

The most significant obstacles we face today are: :

- Human behavior and perception
- Special interests, misinformation, and political divide
- Focus limited only to climate change
- Financial and psychological burnout

Human behavior and perception

The majority of people don't fully grasp the consequences that lie ahead if we fail to meet critical net zero energy goals. And many of those who are aware don't really understand the magnitude of change required to chart a new course.

"Resistance to behavior change [is our biggest challenge]. On both institutional and personal levels."
– *Deborah Tan Lucking, Director of Sustainability, Fentress Architects*

"[People] doubt the existence of climate change and the ability of humans to modify their behavior in response to it... We have to break the false equivalence between sustainability and economic ruin... We have to define a new, sustainable economy in which the perceived loss of economic value as a result of abandoning fossil fuel sources of energy is replaced by renewable sources of equal or greater economic value."
– *Robert Matthew Noblett, Partner, Behnisch Architekten*

Special interests, misinformation and political divide

Special interests in fossil fuels run deep. Oil and gas companies lobby politicians to support their cause. They distribute misinformation that creates fear and confusion in the public's mind. This fear is responsible for carving a political divide around the survival of our planet and species.

Given that hitting sustainability goals requires a national and global commitment, this divide is a major deterrent in our potential for success.

"Countering the misinformation that is being served up by those that have a financial stake in keeping the status quo running."
– *Nathan Kipnis, FAIA, Principal, Kipnis Architecture + Planning*

"The disinformation campaigns by fossil fuel interests place FUD (fear, uncertainty and doubt) in voters' minds. The lobbying stalls major infrastructure investments and causes citizens to doubt the science and their own common sense."
– *Carol Schmitt, Chief Evangelist for Smart Energy, RealPage*

"The polarization of society, which makes any discussion political when it should not be. The erosion of trust between different sides, in some part due to half-truths and fake news, makes working towards a common, more sustainable future that much more challenging."

– *Ganesh Nayak, Principal, Metier Consulting, Inc*

"The political divide is our country's biggest roadblock to hitting our sustainability goals. The topic has been politicized and it should not be, because it is about the quality of life for everyone, no matter which side of the aisle you are on."

– *Rochelle Routman, Chief Sustainability and Impact Officer, HMTX Industries*

"That a significant portion of our political leadership, to say nothing of their corresponding constituents, continue to sow doubt about [climate change] is a travesty of historical proportions."

– *Robert Matthew Noblett, Partner, Behnisch Architekten*

"Lack of long-term thinking and political posturing that undermines evidenced-based action."

– *Dr. Angela Loder, VP Research, International WELL Building Institute*

Focus limited only to climate change

Our time to address climate change is running out and a worldwide commitment to net zero energy is crucial. But climate change is not the only threat. As we shift our dependency away from fossil fuels, we can't simply replace them with equally unhealthy materials.

Sustainability policies must expand focus to address other issues like plastic pollution and chemical toxicity.

"The three-headed hydra of climate, plastic pollution, and chemical toxicity gravely threatens public health and sustainability… A narrow focus on climate may unintentionally incentivize the shift from fossil fuels to plastics and chemicals that are unsafe and unsustainable. It's urent that all sectors take a systems approach to sustainability."

– *Arlene Blum, Founder and Executive Director, Green Science Policy Institute*

"The EPA needs to dramatically shift its focus to the broader definition of sustainability. The agency is in place and science is progressing. The EPA should be enforcing laws and regulations that deal with the bigger aspects of sustainability."

– *Rochelle Routman, Chief Sustainability and Impact Officer, HMTX Industries*

Financial and psychological burnout

The road ahead is long and the outcome uncertain. Even with a focused worldwide commitment to clean energy and climate action, some warn that the extended time frames we've given ourselves to achieve net zero goals may actually be the biggest barrier to achieving them.

"Given the long-term nature of many issues surrounding sustainability, the single biggest challenge would be burnout – both financial and psychological. The decade- and century-long time frames for achieving net zero and/or lowering the level of atmospheric carbon present major roadblocks to the commitment and accomplishment of our sustainability goals as political administrations change and… the total cost of the project steadily increases over time."

– *Josh Richards, Director of Sustainability, Transwestern*

Raising Awareness and Commitment for Sustainability

The job to be done is bigger than any one administration, organization, or population can accomplish on its own. Reaching key sustainability goals will take an “all in” approach and require a major shift in business and consumer behavior.

“Climate change is an existential threat that seems too big to solve alone, so no one does anything. But if we all work together, we can make big changes in a short amount of time.”

– Eric Corey Freed, Director of Sustainability, CannonDesign

But how can we motivate the masses to join the movement? When we asked sustainability leaders what they believe needs to happen to raise awareness and commitment to sustainability efforts in the U.S., five main themes arose.

- Education
- Examples
- Unity
- Communication
- Carbon Tax

Change starts with education.

Education may be the single most important factor in rallying people behind the changes that need to take place to preserve our future. Yet climate change is still not widely taught in American public schools. In fact, only 36% of U.S. students attend schools that teach the Next Generation of Science Standards (NGSS) climate literacy curriculum. And only 30% of middle school and 45% of high school science teachers fully understand the scientific consensus on climate change.

Our country has been trying to pass the Climate Change Education Act since 2007. This piece of legislation has been introduced to Congress eight times in the last fifteen years. When passed, the National Oceanic and Atmospheric Administration will be required to establish a nationwide Climate Change Education Program.

“Start at the schools, start at home and teach responsibility. That will heal everything. But it needs to be master planned by communities that invest in people.” Gerald Olesker, Founder/CEO, ADG Lighting

“Education and helping people see that it’s not a partisan issue - it’s good business.”

– Sam Ruben, Co-Founder, Mighty Buildings

“Beginning at an early age, children need to be exposed to sustainable materials and systems at home, in school, and throughout their community. Growing up in a community that values a healthy environment and [energy efficient] buildings...improves the wellness of children and adults. Teaching children about the natural world and how humans can impact it in positive and negative ways is essential.”

– Richard Berliner, AIA, Principal, Berliner Architects

People need to see real-world, relatable examples.

Many people simply don't understand the practical applications of sustainable development. Nor are they aware of the benefits these innovations deliver to everyday populations.

Highlighting sustainable development projects across multiple media formats and emphasizing the real-world benefits is key to gaining the awareness of more people.

"The U.S. suffers from an ideology problem- they can't imagine a different future because they've never experienced it. Use a combination of large-scale funded energy projects and biodiversity protection with small-scale community level interventions in which people can live and see a different world."

– *Dr. Angela Loder, VP Research, International WELL Building Institute*

"Government policies are most effective in the short term. In the long term, making sustainability "sexy" - ([like] how Tesla is driving the demand for electric cars and EV charging in the housing market."

– *Deborah Tan Lucking, Director of Sustainability, Fentress Architects*

"Seeing more communities adopt strategies such as tighter building performance standards, beneficial electrification, energy benchmarking and Zero Net Energy mandates with strict enforcement provisions will drive awareness and commitment to America's sustainability efforts."

– *Peter Grabell, Senior Vice President, Dividend Finance Inc.*

"Sustainability has been reduced to a buzzword. We need to convey the benefits of sustainability in more concrete, direct, and easy-to-understand ways, such as the impact on energy bills, measurable health benefits, direct cost savings, and long-term benefits of living in a sustainable environment."

– *Ganesh Nayak, Principal, Metier Consulting, Inc*

"More projects in urban areas should be showcased to demonstrate to more people how heat exchangers work, how heat pumps work for a single-family home, how window tinting works, and how LED lights help reduce your energy bill."

– *Sarah Adams, Chief Sustainability Officer, Vert Asset Management*

"We must demonstrate how investing in sustainable and healthy buildings is both an advantage for the community and for the planet."

– *Richard Berliner, AIA, Principal, Berliner Architects*

Now is the time to transcend politics and special interests.

We acknowledged that special interest groups and political divide are among the biggest barriers to reaching our sustainability goals. The future of our species should not be a partisan issue.

If we stop disputing the facts and efficacy of science, and instead start collaborating on solutions, we can change course.

"We need to counter the massive misinformation that is being delivered by... the gas and oil industry. We obviously need to move to a fossil fuel-free future, and that is an existential threat to the fossil fuel companies."

– *Nathan Kipnis, FAIA, Principal, Kipnis Architecture + Planning*

"Everyone must understand this is not a political issue. This is about the future of our society and our communities. We are all directly affected. To make a difference, it is time to have an honest conversation about science and remove politics from the equation."

– *Brent Trenga, Director of Sustainability, North America for Kingspan*

"Without government support, environmentally conscious projects will simply not pencil. A perfect example of this is how vaccine development occurred. Processes were fast-tracked thanks to private-public partnerships and subsidies. In a matter of months, there were multiple vaccines. Imagine what we could do in sustainable real estate if we took this type of joint approach."

– *Tony Cho, CEO and Founder, Future of Cities*

Science needs a PR & communications strategy.

Part of the problem is that scientists are highly academic. Their learnings aren't conveyed in simple terms. And they don't have a reliable plan for sharing information in ways that people can process it.

Most of their work resides in scientific journals that only other scientists read. And what does make its way into the public domain is often difficult to understand.

Scientists need a PR and Communications strategy to simplify their learnings and share them through widely adopted channels that will reach a broader audience. Our friends at Green Science Policy Institute have put together a great library of communications resources to support this initiative.

"Scientists and practitioners in the health and sustainability fields must better communicate their work to reach the right audiences. For example, studies finding harms from chemicals in building materials are often published with no readership beyond the journals they're published in. With the right press release and communications strategy, such studies could move policymakers, manufacturers, and builders to fix the problem."

– Arlene Blum, Founder and Executive Director, Green Science Policy Institute

"We do need to invest more in our science-based talkers. That would be nurturing scientists to deliver their insights in common speak. [This would] break down the barriers that delay interconnection of renewables to the grid as well as funding for innovations."

– Carol Schmitt, Chief Evangelist for Smart Energy, RealPage

"There need to be more grassroots conversations on how sustainability and resiliency affect communities on a unique level."

– Nicholas Rubenstein, Senior Project Manager, evolveEA

A carbon tax would quickly grab everyone's attention.

Carbon tax is a highly discussed topic in the sustainability community. We've been talking about it for decades. It's a tax based on the carbon emissions created as a result of producing goods and services.

While it would come as a major shock to Americans, it would definitely get people's attention. If set high enough, a carbon tax could be a strong incentive to cause people to rethink purchases and behaviors.

"[We need] more regulations and a carbon tax. We've been talking about this for 30+ years. Every President since JFK has been briefed on the threat of climate change. Raising awareness doesn't do enough."

– Eric Corey Freed, Director of Sustainability, CannonDesign

"The true cost of fossil fuels and their impact on climate change needs to be reflected in cost[s] to consumers. If we factored in the cost of these impacts, the differential between sustainably designed buildings would disappear, and the benefits of creating healthy environments and reduced operating costs would be even further enhanced."

– Richard Berliner, AIA, Principal, Berliner Architects

"The time has come for the federal government to get serious about a price on carbon."

– Brent Trenga, Director of Sustainability, North America for Kingspan

"A key advancement… would be a formal valuation of the social cost of carbon and a taxation on goods and services to reflect that cost. Embedding the downstream costs of deleterious health, safety, or social access outcomes into the production and/or sale of a product would curb unnecessary consumer demand while providing dedicated funding to bolster at-risk communities and individuals, while supporting sustainable infrastructure."

– Josh Richards, Director of Sustainability, Transwestern

Getting Ahead of **Resiliency**

The pace of climate change is accelerating and with it we're seeing an increasing number of natural disasters as a result of human influence. The number of major floods and heavy rains has quadrupled in the last forty years. Droughts and wildfires have doubled in that same time frame.

The costs to rebuild communities after disasters strike is staggering. Natural disasters in 2021 alone caused $283 billion in damage, $88 billion of which was caused between Hurricane Ida and the Texas Winter Storm.

We must do a better job of proactively protecting highly populated areas from destruction.

How can the Federal government help communities build resiliency when faced with the aftermath of natural disasters? And how can it help us better prepare our infrastructure for possible future extreme weather?

Here are four core areas the government needs to think about to ensure our communities can withstand increasingly harsh environmental conditions.

- Proactively invest in infrastructure
- Strengthen at-risk areas and communities
- Restrict where we build
- Build back better

Proactively invest in infrastructure

Reinforcing now is preferable to rebuilding later. Our experts call out loud and clear for the government to proactively invest in updating buildings, systems, and infrastructure.

"The Federal Government has a key role to play by ensuring that we have the infrastructure/systems in place to react quickly to natural disasters and extreme weather. This is work that needs to happen before the disasters occur and requires investment in new technologies including sustainable/resilient infrastructure, rapid response teams/supplies, etc."

– *Sam Ruben, Co-Founder, Mighty Buildings*

"The single biggest help the Federal government can provide is to update their FEMA maps on a more regular basis so that the information accurately reflects an area's susceptibility to weather events i.e. flood risk, heat stress."

– *Sarah Adams, Chief Sustainability Officer, Vert Asset Management*

"The government must ensure our infrastructure can not only physically withstand extreme weather, but is also free from harmful materials that pose a risk to surrounding neighborhoods now or in the event of a natural disaster."

– *Arlene Blum, Founder and Executive Director, Green Science Policy Institute*

"Aging infrastructure and buildings must be updated to 21st century standards. Public and private stakeholders can align through the creation of Public-Private Partnerships (PPPs) that marry efficient private capital with mandated resiliency initiatives."

– *Peter Grabell, Senior Vice President, Dividend Finance Inc.*

Strengthen at-risk areas and communities.

This effort is a big task to undertake. Efforts should be prioritized around highly-populated, at-risk communities within areas that are at the forefront of climate change.

"Fund cities who are at the forefront of climate change adaptation and mitigation and create policy tools that encourage multi-pronged solutions such as nature-based solutions. Subsidizing clean energy and focusing on biodiversity at a federal level will also be key drivers of change."

– *Dr. Angela Loder, VP Research, International WELL Building Institute*

"Equity needs to be addressed as the victims of a natural disaster in most cases are those who cannot afford to move, or rebuild."

– *Ganesh Nayak, Principal, Metier Consulting, Inc*

"Key to this is equity and making sure that as new technologies/ infrastructure are deployed that they are done so in a way that is equitable, especially to those communities that have been long left behind by these types of projects."

– *Sam Ruben, Co-Founder, Mighty Buildings*

"The Federal government has an obligation to enable the sustainability of population centers. Part of the role the federal government can play is helping communities reduce risk in advance of climate events, which can be facilitated by finance, insurance, and risk management policies."

– *Devesh Nirmul, Executive Director, Counterpointe Sustainable Real Estate*

Restrict where we build.

The human population can no longer afford the luxury of building wherever they choose. The government needs to consider restricting people from building in endangered areas. More extreme measures would include transitioning people out of areas that are highly susceptible to disasters.

"This is a community-scale issue. There needs to be a disincentive to build in endangered areas, a plan to transition people out of there, a way to strengthen homes that stay in those areas, and better codes and building techniques that address the local issues that impact resilient design."

– *Nathan Kipnis, FAIA, Principal, Kipnis Architecture + Planning*

"The Federal government could work to restructure the Federal Flood Insurance Program to dissuade the building and rebuilding of physical assets, including residential, commercial, and hospitality, in areas prone to flooding and increased flooding in the future."

– *Josh Richards, Director of Sustainability, Transwestern*

"The federal government has to lay down guidelines that need to be enforced for development in areas vulnerable to natural disasters - codes have to be logical, commonsensical, and adapt to the local conditions. They have to be accompanied by financial incentives for individual property owners and small businesses to make the process itself sustainable over the long term."

– *Ganesh Nayak, Principal, Metier Consulting, Inc*

"Because of climate change, the government must become more restrictive about where people can build."

– *Rochelle Routman, Chief Sustainability and Impact Officer, HMTX Industries*

Build back better.

There's clearly a call for proactive solutions that will help communities better weather the storms (or lack thereof). But we will certainly experience more disasters before this happens.

We cannot afford to think short-term when we rebuild these areas. The status quo is not good enough. New buildings must be constructed with sustainability and resilience in mind. Building back better now will reduce the need to build back again in the future.

"Require and fund the build-back to be sustainable to meet 2040/2050 carbon goals. Same with infrastructure. We have the forecasting tools; these are not adequately utilized."

– *Deborah Tan Lucking, Director of Sustainability, Fentress Architects*

"Don't merely build it back as it was before, but question if there is a better way to do it. We're replacing 50-year-old infrastructure with brand new versions of the same thing and using 20th-century assumptions as our baseline."

– *Eric Corey Freed, Director of Sustainability, CannonDesign*

"We have seen communities rebuilt in the same way they have always rebuilt following natural disasters. We must treat rebuilds differently and steer away from low cost or "business as usual" solutions. The federal government must implement standards that rely on resilient, healthy materials that can stand up to extreme weather. We cannot stop climate change, so we must build to withstand its impacts."

– *Brent Trenga, Director of Sustainability, North America for Kingspan*

"FEMA projects should prioritize multifamily builds and rebuilds that are affordable and built to high green standards day one. Stop shipping plastic water bottles and rather deploy emergency solar desalination systems at flood, tsunami and hurricane emergencies."

– *Carol Schmitt, Chief Evangelist for Smart Energy, RealPage*

"We must rebuild wisely. Federal policies, insurance policies, and other forms of support for rebuilding places that are impacted by climate change must not support going back to the status quo… Rebuilding in areas prone to flooding, wildfires, storm surge, and other impacts of climate change must stop."

– *Richard Berliner, AIA, Principal, Berliner Architects*

Resilience is About **More than Just Buildings**

Sustainability and resilience are about so much more than just physical buildings.

Our experts captured it well...

"In the past, environmental problems were considered separate from social problems, but in my opinion, they are permanently intertwined. You cannot address one without the other."

– *Rochelle Routman, Chief Sustainability and Impact Officer, HMTX Industries*

"Sustainability extends beyond strict natural environment and climate solutions. Sustainability can protect communities by creating a more equitable, inclusive urban environment. Climate resilient building solutions and design guards against displacement, which disproportionately impacts lower-income, minority neighborhoods."

– *Tony Cho, CEO and Founder, Future of Cities*

"Preserving all elements of a community, for instance, creates resilience for the very fabric of our culture."

– *Josh Richards, Director of Sustainability, Transwestern*

Building a more resilient America is about building knowledge, equity, community, and culture. It's about building a movement.

Here is Where a More Resilient America Is Built

Over the past two decades, thousands of committed sustainability professionals from various disciplines gather at a central location to discuss the pressing issues facing our country.

As the movement grew, we attracted national and local policymakers, architects, building industry professionals, major brands, and the many influencers who are making change and inspiring others.

These live gatherings were on hold for two years and were supplemented by digital experiences, so the community could gather virtually. In 2021, we resumed our live meetings and we believe that 2022 will be a banner year for the continuation of our gathering.

We hope you can join us in 2022 for both our live gathering, as well as our digital experiences.

Please let us know if you want to contribute to an upcoming report or sponsor one of our online experiences. Contact Jeff Stasko at sales@greenbuildexpo.com.

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