

THE WORLD HAS CHANGED. NOW WHAT?

By: William Larson and Frank Came

PNBRC, November 28, 2018 - Americans recently received a sobering reminder that the world has changed forever, and that fact has far-reaching implications for the industries that build our cities, towns, and the systems that sustain our way of life.

The National Climate Assessment report sums it up clearly. "The nation's economy, security, and culture all depend on the resilience of urban infrastructure systems."

The report explores many dimensions of the nation's economy, society and natural environment affected by climate change and makes it clear that adaptation to new and harsher realities is unavoidable.

It is predicted that extreme weather events will become more frequent and more potentially devastating. Catastrophic disasters from floods, wildfires, cyclones and periods of bitter cold will be the new realities driving the need for adaptation.



But the need for adaptation in the built environment go far beyond basic measures to bolster resiliency against potential climate-related impacts.

The very fabric of urban form is changing and the imperative to deal with these new climate risks adds an element of urgency to how those industries most responsible for the built environment must adapt.

Our cities and towns are becoming larger and more densely populated and our capacity to provide housing and other critical infrastructure is growing faster than our already tight budgets and increasingly outdated “business as usual” approaches will permit.

As the climate assessment report notes, paradoxically as the economy and population of urban areas grew over past decades, the built environment within and connected to cities deteriorated, becoming “increasingly fragile and deficient.”

As a consequence, the vulnerability of those who live in cities multiplies when the effects of climate change interact with pre-existing urban stressors, such as deteriorating and fragile infrastructure.

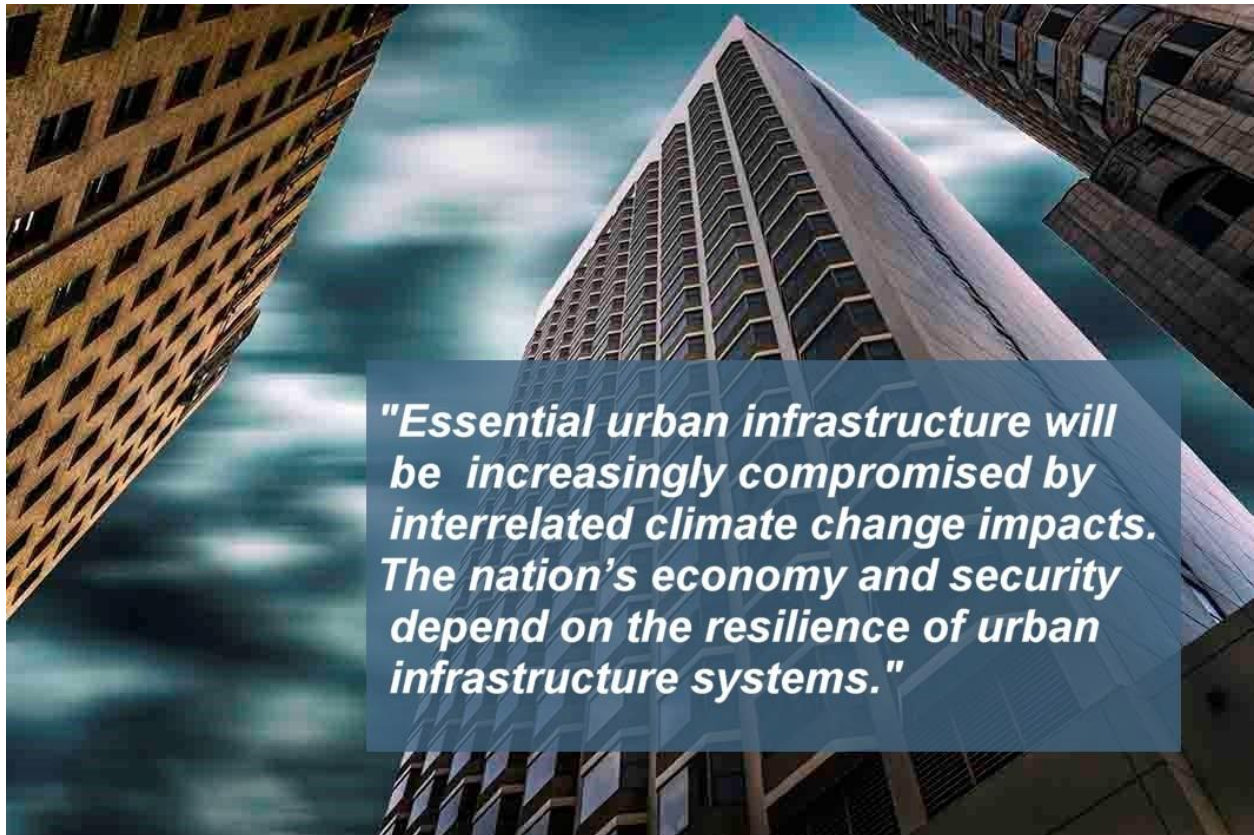
As the report notes, climate change increases the risk, frequency, and intensity of certain extreme events such as intense heat waves, heavy downpours, high velocity winds and flooding from intense precipitation and coastal storm surges. This is not good news for the approximately 245 million people that live in U.S. urban areas today. Their numbers will grow to 364 million by 2050. That’s little more than one generation from now.

What Does it Mean for Us?

So what does it mean for industries such as ours that design, build and maintain our cities?

Simply put we must think differently about how we plan, design, build and manage our physical and social infrastructure. Building better buildings is part of the answer, but it goes much further.

As the climate assessment report notes, although urban infrastructure systems such as transportation, water supply or energy often are considered individually, they are highly interactive and interdependent.



As evidenced by many recent climate incidents such as Hurricanes Sandy, Hazel and Florence, in times of acute stress, it is not just one system that fails. Everything fails! Communications systems, transportation access, energy for heat and power, healthcare – they all collapse at once.

This means we need to change how we build, what we build with, where we build, and we must ensure that our buildings and communities are more resilient, more efficient, and more livable.

These are profound challenges for industries already grappling with severe economic and social pressures. Even without the added imperative of climate change, we must build faster, more efficiently and at lower costs, both economic and environmental.

We know already that concrete, the building block of modern societies, can and is changing to meet new consumer demands. Prefabrication, modular construction, design and build approaches, and changing the very fabric of concrete are transforming our industry.

Informatics, blockchain financing, social equity, and sequestration are terms not often associated with construction, but they are part of the new realities and the new tools we will need to adopt to the changing economic and climate realities.

There are No Simple Answers

Climate change is an extremely complex issue. For decades we have seen fake news, factual misrepresentations, and paralyzing denials of even the most obvious realities.

Over the past two years the message is finally sinking in. Catastrophic damages to cities and towns at risks from tidal surges, and devastating wildfires that have literally erased thriving communities have left little room for doubt about the need for change.



There are no easy answers and no quick pathways to a more sustainable and resilient future. For example, laying waste to our forests – the true lungs of our planet – to build high rise structures with mass timber is not an environmentally sane solution for dealing with climate change. Once felled, contrary to popular allegations, forests require several centuries to replace the amount of carbon initially sequestered by the original “old growth”.

So What Must We Do?

To start with, we must recognize that we are the industries that build our cities, towns, homes and physical infrastructure. Therefore, leadership must start with us.

We can't wait for someone else to solve these problems. Our industries can lead the way to greater resiliency in our buildings and communities.

We can and must work to change public awareness of the need for more durable and resilient infrastructure, and in doing so, change the minds of those elected and non-elected civic officials that make the crucial decisions that can have far reaching implications for catastrophic collapse or manageable recovery when disasters strike.

We must publicly and loudly support truth, science, and the facts. We must use every available means to engage consumers, investors and public officials about the need for greater resiliency planning. And we must rethink our investment decisions and move toward greater sustainability.

We can build the better buildings and the better infrastructure. But we need to work closely with other sectors to reduce the risks of failures, to sustain essential services and to lower our vulnerability to catastrophe.

Changing policies and planning measures such as building codes, zoning regulations, land-use plans, water supply management, green infrastructure initiatives, health care planning, and disaster mitigation efforts, all can support adaptation.

Integrating disaster preparedness and resiliency planning into on-going public policy processes is a low cost, no regrets approach, that allows us to use existing funding sources for climate adaptation.

But to be successful, these adaptation efforts require that private sector players and governments must come together in common cause.

Only by working together can we reduce our exposure to climate-related stresses and strengthen ability to adapt to changing conditions. We can do it. We must do it. There is too much at stake for inaction on our part.

[The National Climate Assessment Report is available here.](#)

[The Chapter on the Pacific Northwest is available here.](#)

About the Authors



William Larson, is Vice President Marketing at CalPortland. He also serves as Chairman, of the Steering Committee coordinating the development of the Pacific Northwest Building Resilience Coalition since its inception in October 2016.



Frank Came is Managing Director of Globe Advisors. He was the Project Director for the Globe Advisors study on Carbon Sequestration of Forest-Based Wood Building Products completed in 2017 for the Pacific Northwest Building Resilience Coalition.

About the Pacific Northwest Building Resilience Coalition



The Pacific Northwest Building Resilience Coalition is a gathering of organizations, primarily in the cement, concrete and masonry industries, committed to furthering the planning, development, and construction of buildings and associated infrastructure better able to recover from and to adapt to the growing impacts of an ever-changing urban and physical environment. [Read more here.](#)