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The Green New Deal is really about designing an entirely new world

It involves unbuilding our mistakes—and building an equitable, just, and sustainable future

By **Diana Budds** | Sep 19, 2019, 12:36pm EDT

Seattle's Denny Substation, by the architecture firm NBBJ, represents a new wave of multi-use infrastructure that enhances civic experience. | Benjamin Benschneider / Courtesy NBBJ

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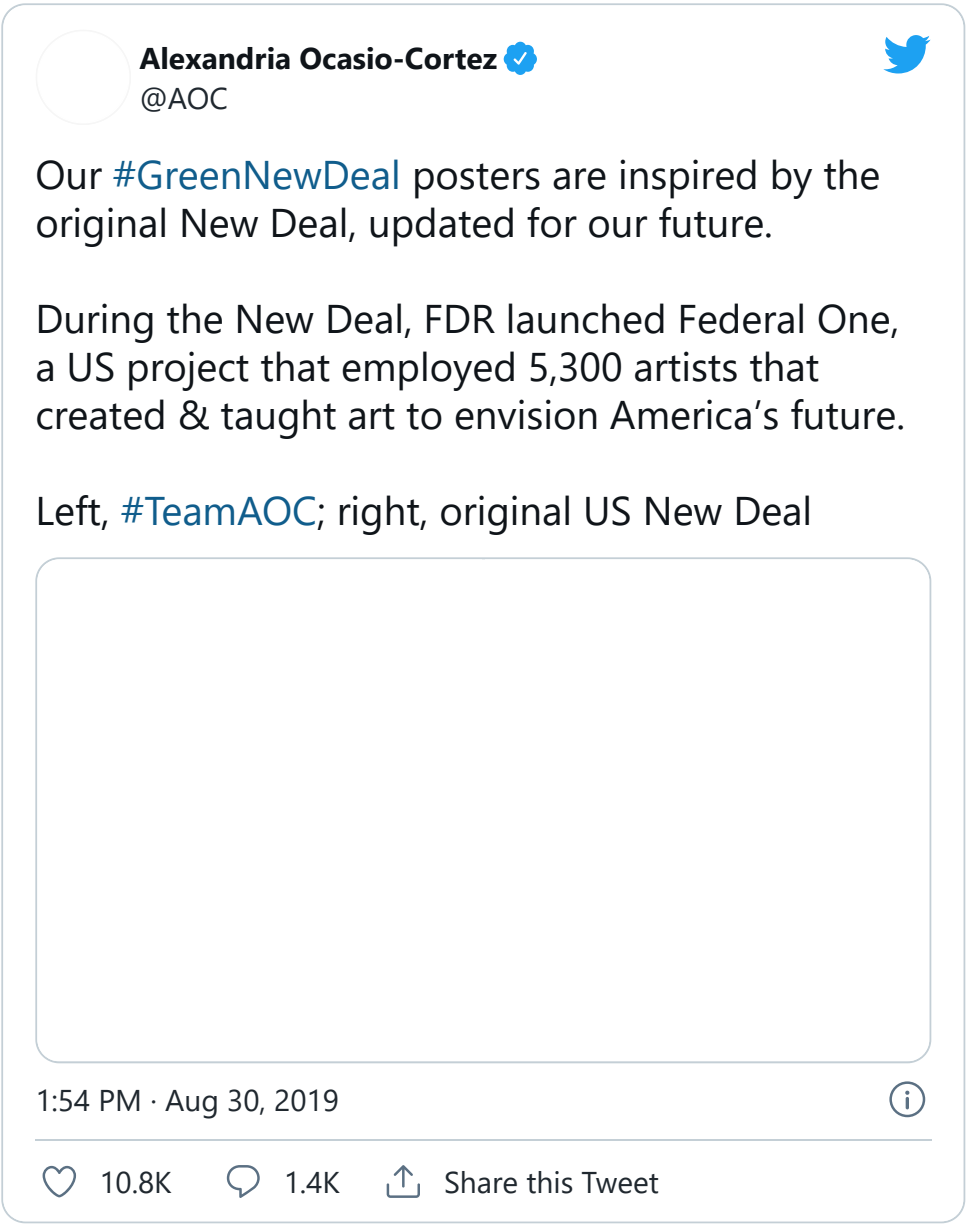
Rep. Alexandria Ocasio-Cortez recently released two beautiful posters advertising the Green New Deal, the first in a series meant to build excitement for policy on net-zero carbon emissions, new sustainable infrastructure, and millions of new jobs. The posters are evocative and optimistic, depicting high-speed rail alongside iconic monuments in Flushing Meadows-Corona Park and Pelham Bay Park, two New York City public works projects funded with 1930s New Deal money. Tandem, the posters' designers, riffed on the beloved National Parks promotional posters from the WPA, the agency behind many New Deal infrastructure projects.

The posters are a look forward that mines heavily from the past, just like the Green New Deal framework itself. But to get to where we really need to go, nostalgia won't be enough. We'll have to imagine public works as we've never seen them before.



The New Deal was about building—and employing millions of people to do it. It was responsible for funding hundreds of thousands of miles of new roads and highways, 78,000 new bridges, 1,000 libraries, 5,900 schools, airports, power-generating dams, electrical grids, hospitals, parks, stadiums, and other pieces of critical infrastructure. It essentially created systems where there previously were none—systems that, in many cases, have led to the very problems the Green New Deal wants to solve: fossil fuel–dependent transportation, car-dependent land use, social inequality, and industry based on extraction of resources, like mining and fossil fuel production.

Our infrastructure is already in terrible shape due to deferred maintenance and poor investment. The American Society of Civil Engineers estimates it will take $3.6 trillion to repair our country's crumbling roads, rails, pipes, and power grids. But we can't just build it back as it was. For the true spirit of the Green New Deal—economic transformation rooted in sustainability and social justice—to come to fruition, we'll have to rescript our future through new infrastructure. And this infrastructure will be about unbuilding our mistakes as much as it is building an equitable, just, and sustainable future.

When the original New Deal was created, we were dealing with a fundamentally different built landscape. The country simply wasn't as developed in the 1930s as it is now. We don't have carte blanche like we once did, and adaptation will be even more challenging. This is where designers, architects, and engineers enter the picture.

The Green New Deal resolution states it's the duty of the U.S. "to invest in the infrastructure and industry of the United States to sustainably meet the challenges of the 21st century." The language is intentionally ambiguous and open-ended, giving designers and policymakers space to imagine. Creating "sustainable environments" and "building resiliency," as HR 109 states, will look very different for coastal cities of millions versus sparsely populated inland rural areas. That ambiguity becomes slightly more concrete in the sections that call for "guaranteeing universal access to clean water," "upgrading buildings," and "cleaning up existing hazardous waste and abandoned sites."

Physically, infrastructure changes will need to involve moving us away from fossil-fuel use entirely, adapting the built landscape to sustain severe weather and extreme climatic conditions, using materials and building techniques that are robust and aren't extractive, and moving people, many of them displaced by natural disasters, to safer and more resilient areas. And most importantly, new infrastructure will need to center quality of life for all people, especially those whom previous policy left behind, ignored, or flat out exploited.

Kate Orff—the resiliency expert, MacArthur fellow, and landscape architect who founded SCAPE—recently presented ideas for new infrastructure at the University of Pennsylvania's "Designing a Green New Deal" conference. She focused on water and resource management across the country alongside new ideas for the governmental agencies that might manage them: A national park around the Mississippi River could reflect new ideologies about living with water. Developing the park could bring together stakeholders across different states and different business industries and could be managed by a Green New Army Corps of Engineers. Rethinking the "American Shoreway"—meaning the coastline—through the perspective of equitable retreat could be the focus of a Green New Coast Guard. Thinking about the Great Lakes as a source of freshwater could be the purview of a Green New EPA. A Green New USDA could explore what regenerative agriculture for the country would look like. Rethinking brownfields as sites for renewable energy production and as restorative elements to address environmental racism could be carried out by a Green New Department of Energy. Forest management and habitat reconstruction could be the impetus for a Green New Forest Service. And finally, tying low-carbon housing to better transportation investments could be the product of a Green New HUD.

Exploring how bureaucracy could enable the large-scale infrastructure projects the Green New Deal will need was also the focus of landscape architect Billy Flemming, one of the Designing a Green New Deal conference organizers. In an April *Places* article, he proposed reviving a number of New Deal agencies that were dissolved, like a 21st-century Resettlement Administration to manage internal migration, a new Farm Services Administration to reorient agriculture, and a Civilian Conservation Corps to realize the green jobs element, among others.

At Penn's "Designing a Green New Deal" conference, landscape architect Kate Orff presented ideas for new infrastructure projects that could make the country more resilient and equitable, overseen by governmental agencies with a green agenda. | Courtesy SCAPE

To Orff, speculative infrastructure has the power to influence new policy through the very process of imagining it. Through the workshopping process, architects and designers could build the diverse coalitions of policymakers, lawyers, community members, engineers, and other stakeholders needed to realize a project and make sure it meets the goals of the Green New Deal.

"We need to visualize and give form to the exciting, new low-carbon landscape," she said during her presentation. "Let's convene lawyers, policymakers, and designers to link scales of design to policy… The answer isn't just for designers to be political, but to design in a political context."

To Nicholas Pevzner, a landscape architect and lecturer at the University of Pennsylvania, one of the great challenges of the future of infrastructure is land use, especially as it relates to renewable energy, which has a larger footprint than fossil fuels. Energy will have to be produced closer to where it will be used and will need new transmission networks, which will compete for space with prime farmland, public lands, privately owned land, and wildlife conservation areas, he said during his presentation. He envisioned the right of way for new transmission lines doubling as multi-use recreation trails and advocated for the expanded use of agrivoltaics, or agricultural land doubling as solar farms.

“Conflicts can be reduced with careful design and planning, so that land uses can coexist and enhance one another, but only if spatial planning and landscape design are considered early enough in the infrastructure planning process,” he said at the conference, echoing arguments he presented in a *Landscape Architecture Magazine* story published earlier this year.

Landscape architect Nicholas Pevzner says future infrastructure will have to be multipurpose, like this speculative transmission line and recreational trail, to negotiate land-use conflicts. | Courtesy Nicholas Pevzner / Uncertain Terrain

But before any new infrastructure can be designed, we have to reframe what infrastructure actually means in America’s consciousness. “Right now the term ‘infrastructure’ as used by politicians is problematic,” says Vishaan Chakrabarti, an architect, incoming dean at UC Berkeley’s College of Environmental Design, and author *A Country of Cities: A Manifesto for an Urban America*. In the book, he presented an idea for the “American Smart Infrastructure Act,” policy calling for infrastructure that encourages urban density, lowers greenhouse gas emissions, and promotes access to economic opportunity.

“For a lot of Americans, [infrastructure] is an abstraction,” Chakrabarti says. “They see it as people talking about public expenditures. What comes to mind is, ‘Oh: the [project] started at $4 billion and ended at $165 billion.’ It’s the perception of Calatrava bankrupting Valencia, the boondoggle. We need to shift the conversation around infrastructure to what it does for people, that their commutes are better, their safety is protected… Infrastructure is an engine of social mobility. It’s not about delivering water and power and transit. It’s the backbone of prosperity.”

The Architecture Lobby, a progressive architecture organization, advances a similar sentiment. It recently annotated the Green New Deal with an eye to how the policy’s goals intersect with the construction industry, and called out reframing infrastructure—along with a number of other themes, like organizing labor, environmental justice, new funding and contracting mechanisms, and democratic participation—as an important focus. “How does new physical infrastructure make possible different ways of life, different social relations, different ways for humans to support each other?” one of the notes reads.

The future of infrastructure is already taking shape across the country, as cities begin to implement their own policies that address climate change.

Berkeley recently banned natural gas in new construction, and other cities are creating policies to wean themselves off fossil fuels. San Luis Obispo recently adopted an ordinance to incentivize all-electric power in new buildings. Earlier this year, New York City passed a bill called the “Climate Mobilization Act,” which it’s touting as a local version of a Green New Deal policy. It’s mostly focused on building retrofits, but also calls for feasibility assessment to see if the city’s gas-fueled power plants could be replaced with renewables.

Electrical substations are typically eyesores, but NBBJ was able to house a new one in Seattle in an attractive shell and include new public space, too. | Benjamin Benschneider / Courtesy NBBJ

Some individual projects—which on their own won't move the needle, but show possible directions for the future—are also coming online.

Seattle recently celebrated the grand opening of the Denny Substation, the city's first substation in 30 years. Electrical substations, which transform and distribute power, are typically eyesores, but with new technologies that allow its machinery and components to be much smaller, the design firm NBBJ was able to reimagine it as a civic amenity complete with a terraced public promenade, a dog park, artwork, and an interpretive center alongside an evocative stainless-steel structure.

"It's a combination of pieces that don't coexist in urban placemaking," says Jose Sama, the project's lead architect. "It creates unusual and interesting tension and out of that tension comes opportunity for redefining the urban experience… When we were first going after the project, we said we want to celebrate a substation. It was about developing a process whereby the community in general, as well as the locals, have a voice in challenging the norms and defining new ways of designing infrastructure."

The process involved bringing together many community groups, some of whom weren't excited about heavy infrastructure entering their neighborhood. But thanks to rigorous

design reviews, many of the substation's harshest critics are now its biggest fans—particularly residents of a senior living community across the street.

"It's incredible to see the excitement from retirement folks, who were first suspicious of the project, become stewards and take ownership of it," Sama says. "The day before the grand opening, I walked up the substation's ramp and stumbled across an older lady and asked if it was her first time there. She said no and that they like to walk here as much as they can."

The Harvard District Energy Facility shows how resilient infrastructure could be integrated into cities. | Courtesy Leers Weinzapfel Associates

Harvard's District Energy Facility, designed by Leers Weinzapfel, is soon to be completed and combines electricity production, heating, and cooling in an ultra-efficient system. All equipment is elevated above flood levels for resiliency. The architects adopted a "tech on display" approach to the facility, which has a beautiful shell that lets passersby peek inside and see how the machinery creates energy.

Jane Weinzapfel, one of the firm's principals, has worked on a number of similar energy facilities, and believes they augur the future of our electrical grid, which will have to be overhauled in the move away from fossil fuels. "Our grid has gotten much cleaner, but we still have to look at lower transmission loss, increased storage capacity, and microgrid

distribution, which is what we see the District Energy Facility facilitate—a network of smaller grids that increase resilience," she says.

Climate policy is a key issue leading into the 2020 election, and candidates are making their positions known and promising to invest trillions. Joe Biden says he will commit $5 trillion to a climate plan, which includes a call to improve the country's rail network. Elizabeth Warren is pledging $3 trillion for her climate plan, which includes calls for green infrastructure, like solar and wind farms, and $400 billion earmarked for research and development of green technology. Bernie Sanders has a $16 trillion plan, which aims to decarbonize the country's transportation and energy systems by 2030. These plans, like the Green New Deal house resolution, are also just policy frameworks. Where policy manifests and becomes real and tangible is in our infrastructure—our transportation systems, energy grid, parks, schools, public spaces, cultural and civic buildings, and the very streets on which we live.

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