

PARTNER EXPANDS ON ITS CRE CLIENT PLATFORM WITH GROWING PRACTICES IN SEISMIC RISK AND RENEWABLE ENERGY

Partner Engineering and Science, Inc. offers full-service engineering, environmental and energy consulting and design services throughout the Americas, Europe, and around the globe. Drawing on over 90 years of collective business experience, Partner's multidisciplinary approach allows the company to serve clients at all stages from initial due diligence and design to development and construction, as well as the ongoing maintenance and optimization of a real estate asset. With dual headquarters in Los Angeles, CA and Eatontown, NJ, Partner has over 900 employees in 40+ offices throughout North America and Europe. Partner was named to the 2019 Inc. 5000 list of Fastest Growing Private Companies in America, its fifth time receiving this accolade. The company was also listed as one of the top 200 environmental engineering firms in the world for the seventh straight year.

All seismic questions were answered by Jay Kumar, PE. Mr. Kumar serves as Technical Director of the Structural Engineering Group at Partner Engineering and Science, Inc. Based in Los Angeles, Mr. Kumar has over 10 years of experience in structural engineering, seismic design and construction management with a focus on structural forensic investigations, structural and seismic analysis, and of course seismic risk consulting for property owners, investors, brokers and lenders around the country. Mr. Kumar has a BS in civil engineering from San Jose State University.

All renewables questions were answered by C. Gage Kellogg who serves as the Director of Renewable Resources Services at Partner Engineering and Science, Inc. Mr. Kellogg brings over 15 years of experience in overseeing all aspects of renewable resources projects all over the United States and in India, South Africa, Chile, and Panama, among other international locations. Additionally, Mr. Kellogg brings over 20 years of business development and operations experience in the construction industry. Mr. Kellogg has a BS in Construction Management and Fundamentals of Construction from Drexel University.

Partner Engineering and Science, Inc. received an EBJ Business Achievement Award in the Mid-Size Firms category.

EBJ: Congratulations on continuing to expand your business and its rapidly growing practices. Tell us about the growth of Partner's seismic risk analysis practice. Are these generally third-party assessments of existing structures, and are insurance companies involved? Are you also finding growth for seismic analysis due to other forms of market demand?

Partner: The CRE or commercial real estate community and local municipalities

are becoming more educated about seismic risk and accordingly have adopted various policies and mandates to both manage CRE seismic risk and improve the safety of the nation's building stock.

Accordingly, the biggest driver of our practice is seismic due diligence, where we provide seismic risk assessments to estimate potential financial losses from earthquake damage to commercial buildings. These reports don't control risks; they help stakeholders understand what the risk is. Part-

ner's experienced seismic team currently supports all of the loss models available in the marketplace (several methodologies are approved under the ASTM standards) to meet the needs of various client types. Overall, we are agnostic to the model we use, as different clients have built up familiarities and allegiances to specific loss models. All of these models have pros and cons, and better or worse applicability to specific building variants. For example, a model originally created in the 1980s may not accurately consider seismic design enhancements in more modern buildings or be aware of now well-known design flaws that came to light in subsequent earthquakes. Conversely, a more modern model based on rigorous lab testing and analysis may not accurately consider actual empirical data on large sets of archaic building types that have historically exceeded performance expectations.

We have also become increasingly diversified in the services we provide for clients. In addition to seismic risk assessments, we provide structural engineering services and seismic retrofit design by our growing in-house engineering department. We are rarely involved with new ground up design and stay focused on the existing buildings market. We have performed seismic retrofit designs for several large non-ductile concrete buildings, in addition to a wide variety of other structures in accordance with recent California ordinances. We have recently added senior staff to accommodate our growing practice.

EBJ: We assume seismic risk analysis is regional. What about climate resilience? Is it comparable or a different animal?

Partner: Seismic risk analysis correlates to the level of geographic risk, which is delineated by seismic hazard zones, an area with a particular level of hazard due to earthquakes. Typically, a high seismic hazard zone is near a seismic region where there are more earthquakes, such as the

San Andreas fault in California, and a lower seismic hazard zone is farther away from a seismic zone, such as the Midwest. In higher risk regions, there is a growing trend towards mandating retrofits for certain seismically risky building types. For engineering and commercial real estate considerations, the best tool to evaluate regional risk is called Peak Ground Acceleration (PGA), equal to the maximum ground shaking intensity during an earthquake at a given location – in other words, how hard does the earth shake at a given point? Seismic hazard maps are used in CRE to determine the appropriate earthquake loading for buildings in each zone. These considerations are integrated into several due diligence reporting requirements, for example Fannie Mae's Property Needs Assessment requirements.

Climate resilience is not a consideration for these evaluations, but seismic resilience is.

Another driver of seismic risk evaluations are safety performance requirements for government agencies and buildings that house government employees. For example, the University of California system, the State of California, the US Department of Housing and Urban Development, and the United States General Services Administration all enforce stringent seismic requirements for leased or owned buildings.

EBJ: You mention recently being the first to perform a seismic evaluation using the transaction rating system developed by the U.S. Resiliency Council. Is the USRC devoted to seismic risk and resilience or does it have a broader mandate? Is it driven by insurance and property owners and the commercial real estate industry that is your core market area?

Partner: One of the fundamental challenges of providing our clients uniform seismic risk assessments that conform to an industry standard is that the current process of evaluating risk is nebulous – you can technically arrive at a variety of answers based on methodology. The aim of the USRC is a standardized resilience ratings system for buildings (not unlike LEED certification) that provides a simple star rating for considerations such as damage, safety, and recovery time. Their broader long-term aim is for the transaction rating to act as an eventual third-party certification process for PMLs. If you produce a PML report that follows good practices and is peer reviewable and reproducible, the USRC will provide a secondary rating endorsement.

Two client groups that would find this valuable are CRE developers or owners with concentrated asset risk (for example,

a small portfolio in a high-risk area) and those investing in expensive assets and either need to rely on net operating income or ROI when they sell them back on the market. It makes sense for these stakeholders to evaluate assets under these newer methods and standards because they provide a better picture of seismic risk. Parties driven by seismic resilience – building owners with a long-term ownership vision, for example, and “early adopters” may also benefit from the USRC ratings.

EBJ: Tell us how Partner originally got into the renewable energy business. And how does RE as a rapidly growing service category tie into to your core practices in the commercial real estate market.

Partner: The company has provided core services to clients in the renewable energy and energy efficiency markets since its inception. Today, Partner's dedicated team of industry veterans provides clients with expanded, specialized expertise needed to develop renewables projects while seamlessly integrating our core offerings.

What has recently changed the market is a rapid growth in the implementation of renewable energy technology (particularly solar), buoyed largely by federal tax incentives, as well as public and private sector mandates. Over 40 states now have either enforceable renewable energy portfolio standards or goals requiring utility companies to get a certain percentage of electricity generation from renewable energy. Large Corporations like Google and Apple are also requiring it for themselves and their vendors. Consequently, we've seen a rising number of lenders, developers and investors going into that space. Today solar modules are much less expensive and better understood by the industry, making project implement easier than ever before. Taken together, this has created a booming market. Ten years ago, the solar market was heavily concentrated in New Jersey and California, but now there are more than 30 viable markets for solar and renewables across the United States, and in some surprising areas too. We've experienced a

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noticeable growth in demand for solar services in the Southeast Sun Belt – Louisiana, Alabama and Florida to name a few.

Integrating renewable energy expertise alongside our core practices results in a single-source solution for clients enabling us to provide comprehensive project development services. Previously, some of our clients might have asked for environmental assessments or remediation services on a new development, but now we are continuing to serve them with additional services including site development, engineering, procurement, construction management and commissioning. Our solar experts know where all the pieces fit in the life cycle of a solar project, real estate asset and related due diligence requirements, so instead of calling eight different firms for zoning, surveys, environmental consulting, land development, etc., we can do it all internally relieving the coordination burden from our clients.

EBJ: When it comes to solar energy, tax credits and other incentives might change, but we note programs like California requiring solar on certain developments. What drivers besides lowered costs will provide incentive for solar installations across the country in the coming decade, and how do those economic incentives and installations vary by residential, institutional, commercial, and industrial or government facilities?

Partner: The energy industry is in a state of enormous transition, the biggest changes and drivers of which will also include transportation and mobility. Batteries in vehicles will be integrated into the grid to provide resiliency and other grid services when they are not used for transportation.

Solar can help solve a lot of the challenges we are facing—from sustainability, to energy independence to strengthening infrastructure and building resilience. Harnessing artificial intelligence to increase the amount of intermittent renewable energy generation by controlling grid function and distribution will be a key driver in integrating the energy sector with the “Internet of Things” technology. The cost of battery

storage is rapidly decreasing at the same time as solar installations are rising. This is vital as batteries are needed to keep the grid stable as we continue the transition to solar.

Distributed generation, which includes localized microgrids, will play a role in energy usage in the future as opposed to centralized distribution alone. In a small town or remote region, for example, critical infrastructure like a firehouse, a hospital and key institutional facilities could rely on distributed generation for resiliency. This will be equally important for those areas vulnerable to natural disasters or excessive grid outages. These systems will need a mix of generation to provide firm power while being sustainable.

Finally, utility-scale solar projects will be an important means to reach renewable goals – you can make a lot of headway with residential and commercial rooftops, but achieving scale and lower costs will necessitate integrating large-scale projects (such as solar farms) as well.

Different sector usage will depend upon mandates and other considerations. For example, Power Purchase Agreements, where a third-party handles installation and equipment and then sells electricity at a fixed rate (typically lower than local utilities) are an attractive option for both public and private sector customers. However, some private entities that can efficiently take advantage of tax incentives may get a better return on investment by buying the system themselves. Understanding these nuances to make an informed investment requires guidance from knowledgeable, experienced consultants who truly understand renewable resources, the energy markets and the commercial real estate industry. □

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