Engineering Firm Sets the Standard for Innovation

SC SOLUTIONS
Value Through Innovation.

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>
> Farid Nobari
> Senior Engineering Consultant, SC Solutions

When it comes to earthquakes, engineers will tell you it's better to be safe than sorry.

After the Loma Prieta earthquake in 1989, most businesses didn't have access to supercomputing capabilities. A small company in Palo Alto with expertise in processing complex data-driven problems turned its attention to infrastructure—pioneering the application of high-speed computer software and modeling techniques to structural engineering.

Now based in Sunnyvale, **SC Solutions** grew into an engineering consulting company providing innovative engineering solutions for structures and dynamic systems. For over 30 years, the certified small business has specialized in analyzing and conceptualizing structural and geotechnical systems in the transportation infrastructure, port and marine, oil and gas, water resources, and nuclear industries.

Senior Engineering Consultant Farid Nobari described the Loma Prieta earthquake as a "milestone event" for the company. The aftermath of the quake required Caltrans to explore new methods to analyze and monitor structures to ensure they were safe.


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1. SC Solutions contributed to a seismic design criteria update for Bay Area Rapid Transit (BART) structures.
2. Principal Engineer Matt Bowers
3. Senior Engineering Consultant Farid Nobari

"Running analysis calculations out in the field on structures that were being retrofitted and replaced created a bridge from early computational services to engineering services," said Principal Engineer Matt Bowers.

With experience working on Taiwan's high-speed rail program, SC Solutions joined the California High-Speed Rail program in 2006 as part of the Project Management Team. They became a Rail Delivery Partner in 2015, providing structural design requirements review and oversight over many facets of the project, including preliminary engineering designs, construction procurement documents and change orders.

"We've been around long enough now that our engineering support spans through the entire life cycle of each segment from initial planning to environmental clearance," said Nobari. "One of the important highlights of what we did, which benefits us and the program, is the international research of all design requirements for the high-speed rail system."

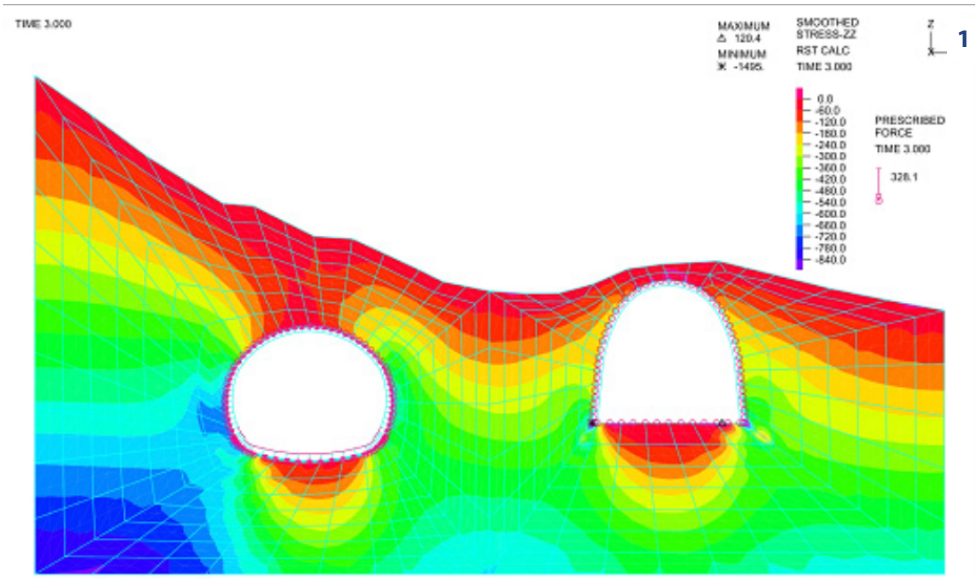
"We had to do our own special studies and apply never known before laws and codes coming from the Federal Railroad Administration, knowing we will be the first regulated under them," said Bowers. "On the one hand, we work with international standards but also provide reliable concurrence that will meet codes that are already in place."

"As a multidisciplinary company, we pride ourselves on holding higher standards of quality and performance than any one industry. We usually are the first to bring state-of-the-art to practice, and we always have to be ahead of the curve, or others will catch up," said Nobari.

The company's founders recognized the value of their staff's collective effort and contribution to the business's success. Ownership of the company was turned over to employees in 2022, making SC Solutions 100% employee-owned through an employee stock ownership program. "We are proud that our staff are not only the most important asset of the company, but now also are owners of the company they work for," said Nobari.

Looking to the future, SC Solutions wants to build on the opportunities the California High-Speed Rail Authority's Small Business Program provides. "It is a badge of honor that has opened doors, and it's up to us to keep them open," Nobari concluded. "We work hard and want to make every client as satisfied as possible. That's how a small business survives."

Anthony Lopez



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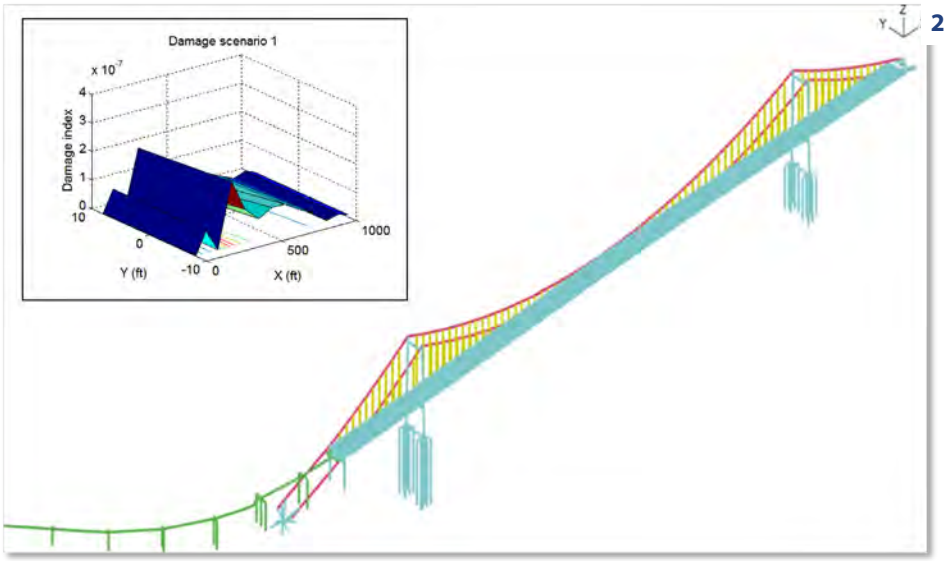

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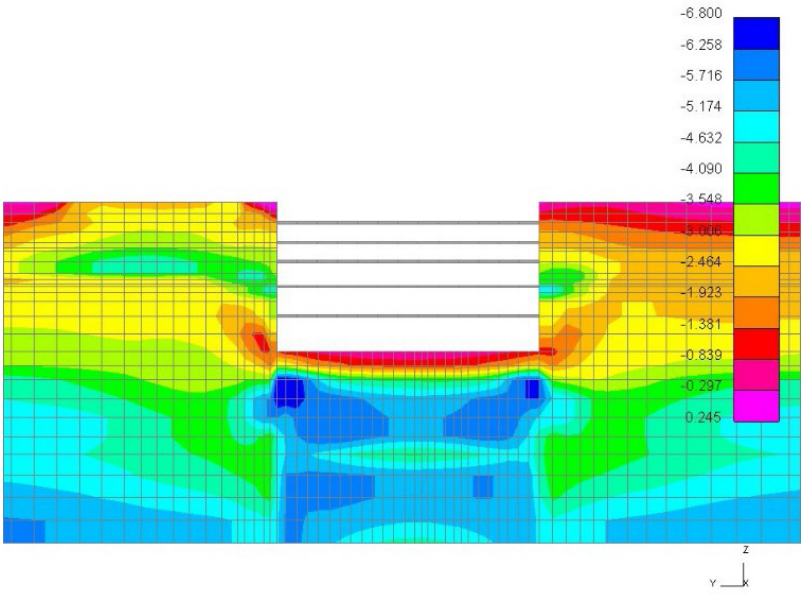

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1. Seismic validation data modeled for the fourth bore of the Caldecott Tunnel in the Berkeley Hills.
2. Visualization from a model-based data analysis and structural health monitoring project for the Carquinez Bridge connecting Crockett and Vallejo, California. In collaboration with the University of Michigan, a wireless system was developed and deployed on the bridge to aid in cost-effective long-term infrastructure management.
3. Seismic design validation data was used to safeguard Los Angeles County Metropolitan.