

## Engineering Consultants for Infrastructure, Environmental and Wireless Telecommunications Projects from Planning to Construction



**Donald Benvie**  
CEO

Tectonic Engineering & Surveying Consultants P.C.

**CEOCFO:** *Mr. Benvie, there is a thirty year history at Tectonic. What is the focus today?*

**Mr. Benvie:** As engineering consultants, we focus on construction phase professional service for projects that include transportation infrastructure, environmental and wireless telecommunications.

**CEOCFO:** *Who is using your services in general?*

**Mr. Benvie:** Both public and private clients utilize our services, with the public sector being the largest user. Our major public agency clients are concentrated within the transportation and public works agencies in the metropolitan tri-state area that includes New York, New Jersey and Connecticut.

**CEOCFO:** *How have you learned to navigate some of the challenges working with the government? What is the key?*

**Mr. Benvie:** One of the main keys in navigating the challenges of working in the public sector has been to establish personal relationships within the agencies with employees who we have worked with directly as a prime or indirectly as a sub-consultant to another firm. These relationships have proven invaluable in providing the guidance and direction that we need to map our way through the often times very rigorous and very difficult pathways that have to be followed to work with government agencies. Another approach is actually hiring staff who have worked directly with the agencies. Although there are certain restrictions that govern how and when a previous employee can interact with an agency they were formerly employed by, the greatest benefit of hiring a

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former employee is the ability to establish ourselves as a firm that is familiar with the agencies practices and what their needs and expectations are.

**CEOCFO:** *When you are working on long term projects are there many changes in regulations? Where does the regulatory environment and the environmental environment come in?*

**Mr. Benvie:** We do design work involving the preparation of the plans and specifications and the contract documents that are needed to build a particular project. The design phase has to take into account the regulatory requirements that have to be met in order to obtain the necessary permits to build a project, and if the project has a lengthy design schedule, regulations may change and the final design has to reflect the most up to date permit requirements. However, the larger percentage of our work is during the construction phase and although there are some regulatory changes that may occur during the course of a project, for the most part you are locked in to the regulations that are in place at the time the project is approved and starts construction. As we finish one project and start another we do generally see increased environmental and regulatory requirements necessitating a higher level of oversight in our role on a project. What we are seeing more and more of, especially in urban areas such as New York City, is that regulatory requirements to reduce environmental impacts on the adjacent neighbors to the properties that are under construction are much stricter. Air monitoring for dust control, noise monitoring, and preparation of noise abatement plans, are routinely stipulated as part of the permit approval process. Another area where regulatory requirements have increased is health and safety. Preparation of a project specific health and safety plan to protect both the workers and the general public is now a necessity on most construction projects to minimize risk and provide for a safe working environment.

**CEOCFO:** *What is involved in constructing a bridge, like the replacement on the Tappan Zee Bridge that seems such a monumental task? What might you look at due to your experience that others would not?*

**Mr. Benvie:** The construction of the Tappan Zee replacement bridge is a monumental task that requires the involvement of virtually every discipline of civil engineering. Our role on the project is to perform construction inspection and oversight to ensure the quality of the built structure meets the intent of the design plans and specifications and adheres to the numerous Federal, State and industry regulatory and administrative codes governing highway and bridge structures. To support our construction inspection staff, we also have an onsite materials testing laboratory to expedite the testing of soils, aggregate, asphalt, concrete and masonry materials being use on the project. The main focus of our inspection and testing effort is to ensure that the materials and procedures they use, whether it is placement of embankment fill for the new highway approaches to the bridge, fabrication and erection of the bridge beams, pouring concrete for the towers that support the suspension cables or the pile driving for the bridge foundations are in accordance with design and regulatory requirements. We play a relatively small role on this project but the key to the success on this herculean effort as with any project large and small, is communications between all the entities involved. I am using communications in the broad sense of the word, because in a project this large and complicated, you have so much coordination that needs to be

done. A basic communication issue is to ensure that our staff is working with the most updated and revised set of plans and specifications. Another communication issue is providing the necessary training to our staff so they understand the actual construction process that they are monitoring and how the specific elements in the project are supposed to be built, so they can make sure that they are looking at all of the critical activities and critical materials that they need to.

Some of the things that might stand out to us more so because of our experience is the ability to identify whether the contractors means and methods are the most appropriate for the type of work they are doing. Is the type of equipment that they are using suitable for the work that they are performing? Is the sequence of the contractors' activities efficient enough to meet the contract schedule? Does the schedule account for the delivery of items that may require a long lead time? Are the means and methods that the contractor is using able to get the project built without adding undue additional work? Those are the types of thing that, from our perspective, we may see more so than someone who is not familiar with the actual construction of a large infrastructure project.

**CEOCFO: *Are there particular types of projects that you would prefer given a choice?***

**Mr. Benvie:** My interest has always been on projects involving large scale heavy civil works where you see a lot of "yellow iron" moving the earth. So that being said, projects such as highways and bridges, tunnels, dams, airport runways, pipelines and railways are high on my list of preferred projects. Most of these projects are on the public sector side of the business and that's where we have had a strong focus, providing construction engineering and inspection services. On the private sector side we have established ourselves with the wireless communication carriers; Verizon, Sprint, AT&T and T-Mobile as the go to A/E firm that has been really involved with the planning, design, zoning, environmental permitting and program management for wireless cell sites going back to 1990 when cell phone service was still in it's infancy. We've been involved with the design and construction of tens of thousands of cell sites throughout the continental United States.

**CEOCFO: *You have projects throughout the country. What are some of the challenges in being a CEO with a scattered workforce?***

**Mr. Benvie:** I think that one of the biggest challenges is finding the right people for the positions that we need to constantly fill. Timing is everything and the hope is that when we get a new project, we will be able to assign our experienced individuals finishing another project. If the timing does not work out, then we have to reach outside of the company and go through the recruiting process, which for the most part is constantly ongoing. The most difficult positions to fill are at the project management, project engineering and senior engineering levels requiring people with experience in the seven to ten and twelve year range. These positions are very difficult to fill and most firms will develop that talent in house with a new hire out of college, cultivating that person, training and teaching them as part of the career development process. More often than not, you generally don't have the luxury of time to do that. You have a new assignment come in, you have your current staff committed and that's when you have to hope that your personnel networking is deep enough. Our inventory of potential job candidates has been built from a multi prong effort involving social media, referrals from current employees, recruiting on campus and traditional advertising with the

news media. Ensuring that every supervisor: the project managers and the executive level department managers, the field resident engineers have the human resources they need to do their jobs is one of my most critical responsibilities and challenge to managing a spread out work force.

**CEOCFO:** *The construction industry over the years has had somewhat of a negative feeling surrounding it. Is it more professional today? Is it easier to work with all levels of people involved in projects today?*

**Mr. Benvie:** I do believe that the construction industry is more professional today. There is a higher level of education and training that is necessary to not only design and construct a project but to also manage the work itself, interact with the stakeholders and meet the multitude of regulatory requirements that are required as part of the permitting process to get a project approved. Looking back over my own career and looking at how we function as an organization today, it has always been about having a professional group of people who support each other and who work together to get the job done. The construction industry is not an industry where you have a few stars who outperform and make things happen. To accomplish the work requires a team effort, involving everyone from top to bottom, from technician to project executive, non-degreed and degreed/licensed engineer, architect, surveyor, construction manager and everyone in between. The projects are more and more complex so that you really cannot have just a few people out there bearing the load. It has to be balanced and distributed with everybody working together to deliver a final product that meets the client's expectations.

**CEOCFO:** *Tectonic is clearly one of the top design firms. You have been recognized many times. What surprised you as the firm has grown and evolved?*

**Mr. Benvie:** I think the biggest surprise that I have seen since the time that we started the firm, with the size that we are, is that contrary to firms nowadays that have huge turnover of staff with few career employees, we have been able to maintain a workforce that has longevity, comprised of a loyal and dedicated group of employees. We started the company back thirty years ago, when the historical model of companies was going through a major transition. My parent's generation worked for years and years with the same companies that they started working for and ended their careers with. My father worked for the phone company for his entire career. There are other examples of companies where not just blue collar, but also white collar workers would remain for their entire careers. IBM is another example. Up until we started the firm in the late 1980s the policy of IBM was not to lay people off. Right after we started the company, the stock market crash of 1987 occurred and shortly thereafter IBM which is headquartered in the Hudson Valley where we are located, began a major cut back involving layoffs. Another example was a large engineering and construction firm that I worked for and left when we started the company. That company which is no longer in business was winding down from the nuclear power plant expansion that had been ongoing from the late 1960s until the early 1980s. As safety concerns with nuclear power grew, the demand dropped and the huge workforce that had been built up over almost two decades was no longer needed and as a result, many people were let go in a relatively short period of time. There was a lot of bitterness on the part of the people who were let go who had dedicated themselves for twenty, thirty or forty years to the

same company. These examples exemplified the monumental shift that was occurring in the corporate structure of companies, pointing to a future with a work force that would be more transient and independent. Seeing this change, my thoughts when we started the company were, "We better be prepared for this transient, mobile and independent workforce and be able to adjust as it seems this will be the way business is done". With some luck and a lot of hard work, we were able to provide a continuous pipeline of work, and maintain the ability to grow which is a key element in maintaining a stable work force. There were a few years where we grew in leaps and bounds and suffered some real growth pains, but overall we have been able to maintain steady growth over thirty years. That steady growth allowed us the ability to maintain staff consistently and provide challenging and meaningful work. It has allowed us to provide the opportunities for employees to grow as they develop their careers. It has allowed us to pay reasonable wages and provide fringe benefits that are fair and equitable. The ability to do these things has engendered loyalty and dedication on the part of our staff. Although we do not maintain a family style organization, we do provide an independent work environment that for most the part is challenging and interesting. Most importantly, the people who we know that can perform the work and handle the responsibility, we let them do their jobs without interfering and micromanaging them. We have corporate rules and regulations and guidelines that we use alongside the clients requirements, but we let those who we have entrusted to do what they do best; get the work and do the work. When they need support, if there are technical problems on a project, if we are not meeting the client's performance requirements or expectations or if there are financial problems on a project, which usually come when you have technical issues that you are dealing with, then we will get involved. We will dedicate the resources to help the person, the manager get through it. What I am saying in a long winded way is that what has surprised me the most is that we have been able to maintain the loyalty and the dedication of the people who have worked with us far longer than I had envisioned when we started the firm. Today, some of these people have been here twenty five plus years. That says to me that we have built a company that our people feel proud to be part of it.

Interview conducted by: Lynn Fosse, Senior Editor, CEOCFO Magazine

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