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Engineering the future in the Hudson Valley

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In today's world, saving energy no longer means: "Don't forget to turn off the lights!" And, planning traffic patterns at major intersections cannot rely on the courteous driver concept of "OK, buddy, you can go first!"

From concept to design, from construction to complex building systems we depend upon engineers to help bring order and harmony to projects of the future. Engineers are playing critical roles in designing residential and commercial areas, sanitation, streets and the control of traffic. They plan building systems such as mechanical, electrical, HVAC and lighting systems, to name a few. Engineers plan for telecommunications and systems integration. Their technical strength can also be seen in how they troubleshoot complex problems. They bring imagination to life.

John J. Farrell, an Orange County resident, is a professional engineer and a partner with AKF Engineers in New York. He offers some insight into the future for the region.

Q. How important are engineering services to the growth of Hudson Valley?

A. The need for engineering services becomes more important and vital to the growth of the region for several reasons. As the region grows, the size and complexity of projects becomes greater. This is evidenced by the steady movement towards more office complexes and industrial parks to complement the staple retail and residential markets. It is highlighted by specific projects such as the new hospital that will be constructed in Middletown and the construction of I-86. Projects of this magnitude not only require careful planning but a creative and cost effective approach from the initial concept stage through commissioning and turning over (the project) for use.

Recent changes to codes for ventilation and energy usage have made it imperative to choose the correct systems and components so that project budgets can be accurately established at the beginning to ensure that the project economic and technical objectives are met.

Q. Are there specific concerns for the I-86 project?

A. On projects such as I-86 it is essential to address complex logistics so that construction can progress while maintaining traffic flow with minimal disruptions and inconvenience. Careful planning is required to successfully address these issues from all aspects. For example, when changing highway exit and entrance ramps, planning for alternate access especially for emergency vehicles is a top criteria. Prefabrication of major structural items such as bridge components further expedites the construction schedule.

Q. How about the Casinos?

A. The casinos that will soon be built require the latest technology and infrastructure to support the casino operations. High-end hotels and dining facilities associated with the casino business also require great attention when creating an atmosphere or theme through the use of sophisticated lighting, water falls, atriums and other features. And, you'll need technical engineers for table functions and security. Also, gamblers want to be pampered. So, planning must include such amenities in hotel suites as Internet access, remote controlled air conditioning systems, communications, cable TV, keyless access, right down to coffee makers.

Q. How should owners and developers view engineering services?

A. It is important on every project to review the options available for meeting a specific need. There is a strong need to think "outside the box." Engineers help an owner to manage and meet his expectations. Creative solutions to design and construction problems can expedite the delivery of a project, improve its quality and most importantly, reduce cost. To meet these requirements engineers are needed by contractors, owners and developers.

Of course, engineers do not have all of the answers, but it is in the best interest of any project to include engineers as part of the project team from the outset. This helps to ensure a comprehensive and cohesive effort so as to bring the project to successful fruition.

Q. What happens when engineers are left out of the process?

A. A team consisting of an owner, designers, engineers and contractors accomplishes the most successful projects. Many times, however, there is a tendency to look upon engineering as a costly appendage that can be avoided for as long as possible. Unfortunately this mind-set usually results in unfulfilled project expectations and project cost overruns.

Q. What is the construction outlook for Hudson Valley?

A. I believe the construction outlook is becoming brighter. Historically the volume of business for engineers and architects lags the stock market by approximately six months. Increase of construction activity usually follows soon after.

With what appears to be a slow and steady upturn in the stock market I would expect to see an upturn in design and construction toward the end of the fourth quarter of this year. And, that's good news. More offices and industry would keep dollars in Hudson Valley. Based upon the projects we've already discussed and those that are yet to develop such as Stewart Airport, I expect the business to flourish long term.

Q. What should be our focus?

A. As we prepare for the next construction boom I believe that owners and developers need to realize that involving engineers at the onset of a project can help them to deliver a quality project, on time and on budget. In other words a dollar spent on engineering often will save many dollars in avoiding or minimizing construction problems and related costs. The owners should seek a firm best qualified for their project based upon those demonstrated strengths. In order to accomplish this an owner may need either engineers on staff or a consultant to assist him in defining the objectives and goals for a project.

An equal focus should be to qualify engineers for a specific project prior to negotiating a fee. Many engineering firms have particular strengths in certain areas of their practice. On the other hand, engineering services that do not properly address a project's specific needs not only affects the quality of the immediate project but other industries as well.

John Farrell's firm, AKF, has worked on projects including St. Barnabas Hospital and Montefiore Medical Center in the Bronx; Mt. Sinai Medical Center in Manhattan; AIG Life and Shriner's Hospital in Mexico City; the Oneida Nation's Turning Stone Casino in Verona, N. Y. and many others.

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