

A Look at Practice From Three Perspectives

With this edition of *Civil Engineering Practice*, the Editorial Board brings you three articles that each highlight quite different aspects of the practice of civil engineering, but each has great relevance to the future of our practice in the field. Offshore wind turbines may be an important part of our future energy supply, and Sanjeev Malhotra provides a substantial description of the considerations that go into foundation system design. Enhancing the urban landscape by partially “righting our previous environmental wrongs” is the theme of Vladimir Novotny. Jerome Selissen’s and Michael J. Walsh’s article on the implementation of a town-wide sewer installation program in Tewksbury, Massachusetts, provides a valuable lesson on the “soft-side” of civil engineering — that is, the absolute necessity to secure public support and funding for infrastructure expansions, such as sewer system expansion.

We look to future energy generation in the article by Malhotra on design considerations for foundations for offshore wind turbines. One of these years, we may actually see a network of these constructed off the south coast of Massachusetts. The description of the various aspects of design that must be accommodated is extensive, and well presented. Many decades of construction and operation of offshore oil and gas platforms provides the wind turbine designers with much background that greatly aids their deliberations on design methods and structure loadings. As with onshore construction, the soil and/or bedrock conditions, and water depth will have considerable bearing on applicable foundation systems and their design, and can prove to be the tipping point with regard to project financial viability.

Righting some part of our past environmental “wrongs” is the theme of the article by Novotny. He describes, with some remorse, the “engineered” solution to stream flooding that has been employed for centuries — that is, stream “removal” or channelization. A primary example in Boston is Stony Brook, now housed in the huge Stony Brook Culvert that conveys the stream from Jamaica Plain to the Fenway and Charles River. I first encountered Stony Brook while working on the Southwest Corridor Project and our geologist called in and said that a test boring that was being drilled for the project had hit 15 feet of air! Mark that one up to an old map. Stony Brook was prone to flooding, so it was buried in the late 1800s. It runs right under Parker Street and crosses under Huntington Avenue at the corner by the Museum of Fine Arts. Novotny summarizes several proposals for “daylighting” a portion of Stony Brook in the area

of the Northeastern University campus. These proposals were developed by civil engineering students at Northeastern as their senior capstone design projects. Stream daylighting can add substantially to the urban environment and is a growing trend in urban planning, and illustrates how the civil engineers of today can correct some of the environmental "damage" done by our well-intentioned predecessors.

In their description of the multi-year process to win and maintain Tewksbury voter/resident approval for a \$80 million expansion of the sewer system, Selissen and Walsh explain the "other" side of civil engineering — that is, getting the project approved and funded, and then maintaining public acceptance throughout the multi-year construction period. They do not mention the pipe size, volume of flow, slopes or any other technical design details. However, we civil engineers must always remember that there would be no public infrastructure projects to design and build if it were not for there having been an initial visioning, planning and development of the public support process. A primary lesson that can be drawn from the Tewksbury experience is the need for clear, up-front communication to citizens who not only will be affected by the construction disruption, but who also will benefit greatly over the long term by having a town-wide sewerage network. This lesson on project formation and public support development is not only important for our practicing members, but should also be emphasized in undergraduate education as a vital element of professional practice.

Since these three articles give us different views of the future of civil engineering practice, the Editorial Board also constantly looks to the future of *Civil Engineering Practice* in our mission to present timely practice-oriented papers. As you can see from the diversity of articles in this edition, practice encompasses a wide variety of both technical and professional and societal topics. We continue to search for new technical articles and to reach out to the membership to help us identify topics and authors. It is interesting to note that one of articles is an outgrowth from civil engineering student senior design project course, and we suggest that there may be other such articles lurking in those voluminous design reports. The Fall 2009 Structural Engineering Lecture Series on "Our Aging Infrastructure, Evaluation, Repair and Replacement" may also prove a source for one or two interesting articles. Please contact me or any member of the Editorial Board with ideas, suggestions or draft papers on an aspect of civil engineering practice that you would like to see or offer for publication.

Sincerely yours,

A handwritten signature in black ink that reads "Jim Lambrechts". The signature is written in a cursive, flowing style.

Professor Jim Lambrechts, P.E.
Wentworth Institute of Technology
(lambrechtsj@wit.edu)