The Hub of Engineering

This issue of *Civil Engineering Practice: Journal of the Boston Society of Civil Engineers Section/ASCE* has been specially prepared for the 1998 ASCE National Convention in Boston. It also commemorates the 150-year anniversary of BSCES. Convention attendees with full registration will receive a copy of this issue compliments of BSCES.

Boston and the New England region have a long history of civil engineering achievements. Many of these are celebrated in the convention's series of History and Heritage seminars. BSCES is proud to sponsor the designations of two National Historic Civil Engineering Landmarks: the Canton Viaduct, a stone masonry railroad trestle south of Boston, and the Moseley Wrought Iron Bridge, located on the campus of Merrimack College north of the city.

In planning for the convention, the Boston Local Organizing Committee (BLOC) chose not just to celebrate the past, but to examine the present and look forward to the future. Recently, the Boston area has been graced by several huge projects. The multi-billion dollar Central Artery/Tunnel Project features just about every type of civil engineering analysis, design and construction. This Massachusetts Highway Department/Massachusetts Turnpike project includes miles of cut-and-cover tunnels, two immersed tube tunnels, a cable-stayed bridge, large steel and concrete viaducts, underpinning, new subway construction and stations, and many other features. MASSPORT has the Logan modernization program, a large billion dollar plus ongoing project to reconfigure Logan Airport. The Massachusetts Water Resources Authority has sponsored multi-billion dollar projects to rebuild the Boston area's water supply and transmission, and wastewater treatment facilities, including a deep underwater outfall tunnel into Boston Harbor and a massive new wastewater treatment plant at Deer Island. The Massachusetts Bay Transit Authority (MBTA) has many current and future projects of its own, including the construction of a multi-modal "Super Station" at North Station for transit and commuter rail, and a future Rail Link tunnel connecting North and South stations. As a group, these projects represent an impressive, comprehensive contribution to the work of civil engineering analysis, design and construction. Bostonians are not shy about their perceived status in the order of things. The city's nickname is the "Hub," as in the "Hub of the Universe." For the 1998 ASCE Convention, we consider ourselves to be the Hub of the Civil Engineering Universe as well.

Aspects of some of these local projects are described, in part, in this issue of *Civil Engineering Practice*. Cranston Rogers writes about the merger of BSCE and ASCE, and about the construction of the original Central Artery expressway viaduct. Paul Harrington describes the existing artery's current underpinning efforts prior to tunnel excavation below it. Clay Schofield contributes a paper about the history of mass transit in Boston, and on current and future MBTA projects. A retrospective and still timely paper by Karl Terzaghi on engineering practice is reprinted from an earlier *Journal* issue. Trent Parkhill contributes a retrospective about the development of geotechnical engineering, a discipline that to an extent originated in Boston. Katherine Weeks writes about

James B. Francis, a pre-eminent hydraulics engineer of the nineteenth century. Irene Woodfall describes the inventive methods used to renovate a part of Boston's water/sewer line infrastructure. A.J. Powderham explores ways to best apply the observational method on construction projects. Finally, Steve Benz examines the great changes introduced by computer-aided civil engineering. Together, these papers present some of the details of Boston civil engineering practice: past, present and future.

Civil Engineering Practice is prepared under the guidance, and with the constributions, of its Editorial Board. Many thanks are due to its members. Special thanks are given to Elizabeth Lewis, who coordinated this issue, and Cindy Chabot, who serves as the chair of the Board's Committee for Editorial Affairs. Also, the Society owes its gratitude to its Editor, Gian Lombardo, who is largely responsible for the document's excellent standards and quality.

Thanks are also due to the following members of BLOC for their work in planning the 1998 ASCE Convention: Jack Henderson, Chair, Charles Brackett, Anni H. Autio, Daniel P. Bisson, Brian Brenner, Gary S. Brierly, Robin B. Dill, Sar Wadia-Fascetti, Bill Galbraith, Abbie Goodman, Charles Kalauskas, Michael Oakland, Ed Nazaretian and Dennis Tewksbury.

For our visitors, on behalf of BSCES, welcome to the Hub. We hope you enjoy this issue and your stay.

Brian Brenner

Brian Brenner,
Chair, *Civil Engineering Practice* Editorial Board