Geology and the Aggregate Industry: No Plan for the Future

Donald G. Mikulic and Joanne Kluessendorf
Illinois State Geological Survey, Prairie Research Institute,
University of Illinois, Champaign, Illinois, and Weis Earth Science Museum, Menasha, Wisconsin

Geology is a critical, but often overlooked, aspect of successful aggregate production. No modern operation can stay in business or remain profitable without a comprehensive site-specific understanding of geology. The enormous growth in the stone industry during the twentieth century has demonstrated that many locations thought to have “unlimited” resources could be depleted rapidly with changes in demand, rock quality, and room for expansion. As a considerable financial investment is now required to open new sites and even to continue operations at existing locations, the need for accurate geological information is more important than ever before.

Two significant issues must be considered to meet future needs for geologic information by the aggregate industry. First is the proper use of the company geologist. In the past, many companies mistakenly relied on engineers to make geological decisions. Although many larger companies began to employ a geologist in recent decades, their talents often are not utilized effectively, as they spend much time on projects unrelated to geology. They seldom have the opportunity to do a basic comprehensive study, supported by drilling programs and testing, of company sites. As a result, their expertise comes into play only when a problem occurs, rather than predicting where issues might arise beforehand. Companies need to provide the time and opportunity for geologists to develop comprehensive geologic knowledge of their operations as well as a good understanding of local geology, independent of engineering programs. Doing so will help minimize production problems and provide the background needed to locate new sites for expansion.

The second issue relates to training geologists for this type of work in the future. In the past there weren’t specific university programs that trained students to work as aggregate geologists, either for an individual producer or as an industry consultant. Most geologists employed in the industry were able to use what they learned in basic geology courses, but, without a program to follow, it is unlikely they took all of the course work needed for this field. The same is true for many geologists employed as consultants. The situation has now become critical, as most universities and colleges no longer offer even many of the basic courses, let alone aggregate-specific training. It would be possible to develop an aggregate program at any school by offering basic instruction in such subjects as mineralogy, petrology, geophysics, stratigraphy, sedimentology, structural geology, geohydrology, environmental geology and glacial geology, as well as pertinent regional geology. A graduate of this program would be a valuable asset to any aggregate producer.