

Paul Doherty: A Remarkable Young Engineer



“At age 31, he has achieved more than most engineers do in a lifetime... Doherty has built the firm into a leading consultancy, and is sought out to resolve complex engineering problems.”

The managing director of Gavin & Doherty Geosolutions grew up in a small town near Dublin, Ireland, one of four children. Paul Doherty comes from a long line of barrel makers — coopers for the famous Guinness brewery. He describes his interest in engineering as an ad hoc process. He liked math and enjoyed solving “practical” problems, rather than theoretical ones, which, he says led him to choose engineering as a profession.

Doherty has had an exceptional career so far. His education includes a Bachelor of Engineering degree with honors, a Ph.D. in geotechnical engineering, chartered status, and last year he received another impressive honor, the “Emerging Professional Consulting Engineer Award” from the Association of Consulting Engineers of Ireland.

Gavin & Doherty Geosolutions

In 2011, Doherty started his company with his Ph.D. thesis advisor, Kenneth Gavin. The then two-person firm focused on providing geotechnical engineering services to the international market. The firm has grown, and now employs 35 highly-qualified technical staff whose collective aim is to solve challenging projects with innovative engineering solutions. Doherty actively manages the business, including offices in both the U.K. and Ireland. The co-founder, Kenneth Gavin, takes a more hands-off role and is now professor of subsurface engineering at Delft Technical University in the Netherlands, but maintains an “active interest” and consults for the firm’s more challenging projects.

Doherty says he enjoys working on marine and offshore projects because of the technical challenges and the scale of the work involved. The risk profile of offshore projects compared to their onshore counterparts is significantly higher and so, he says, accurate and reliable geotechnical design is essential for the project to succeed.

Risky projects offer opportunities, says Doherty. Designers are told to design both a robust and a conservative structure. Engineers and contractors can place longer piles, but, offshore, this means designing to

depth, which is hard to target, he says. If one is overly conservative, there are fewer risks, but conservatism can lead to a costly solution. The challenge is to figure out how to be efficient, adds Doherty.

“Nothing is Generic”

Gavin & Doherty Geosolutions has worked all over the world, including Asia and Africa. Clients approach the firm, according to Doherty, because it fills a niche: that of innovation in soil-structure interaction analysis and timely delivery of complex solutions. The firm’s design approach is tailored for each project to meet a specific need, while working on tight schedules. Doherty says the company’s approach is always flexible; nothing is generic.

The firm’s project for the Irish Rail Authority is an example of its ability to develop novel and innovative solutions. The scope of this work involved developing a high-end Decision Support Tool for the Irish Railway Network. That network has over 2,800 km (1,740 mi) of track, supported by earthwork comprising thousands of cutting and embankment components. The Decision Support Tool assists in managing these assets through quantitative risk analysis. The firm ranked all the slope assets according to risk and achieved a scientific means of supporting maintenance and remediation decisions.

The railway infrastructure contains cuttings and embankments that include naturally variable soils and slopes. The safe operation of the railway relies on ensuring slope stability and, therefore, says Doherty, “it is critical to manage the risk of slope failure.” The Irish Rail earthworks are more than 100 years old and are subject to landslides and rockfalls that sometimes result in expensive remediation, such as derailments, train damages and temporary line closures.

Geoscience Ireland Award

The Irish Rail risk model, Decision Support Tool and cost-benefit analysis software was a two-year process involving over 25,000 man-hours. Doherty successfully managed and ensured that the project was completed on time and within budget. The novel nature of this engineering tool was recognised nationally when Gavin & Doherty Geosolutions won the “Engineers Ireland Geoscience Award,” and was shortlisted for the “Innovation” award for this project.

Colleague's Comments

John R. Bowen of Bowen Consulting, says that Doherty has great engineering credentials, and is rooted in the fundamental philosophy of civil engineering, that of producing unique, achievable and appropriate solutions. “Doherty delivers insightful appraisals, his solutions are cost effective, and he has a passionate commitment to innovation.” He also has a ready wit, says Bowen, and a “can do” attitude.

Gerry O’Sullivan, a director at Gavin & Doherty, says Doherty is a “truly exceptionally talented young engineer.” At age 31, he has achieved more than most engineers do in a lifetime, according to O’Sullivan. Doherty has built the firm into a leading consultancy, and is sought out to resolve complex engineering problems. O’Sullivan adds that he has been at meetings where “Doherty earned the respect of highly-experienced world class engineers. He also has the good sense to surround himself with experience. He listens and has the confidence to make his own decisions.”

DFI Student Paper Winner

Doherty’s history with DFI goes back to 2009, when he won the Institute’s Student Paper Competition Award for his paper titled “Cyclical Axial Loading of Offshore Piles - An Issue of Concern?” His work for his Ph.D. was supported by a scholarship from Sustainable Ireland. As it happens, the

Young Professor Paper winner that year was also from Ireland, by Professor Debra Laefer, now at New York University.

Doherty says of his experience with DFI that he was accustomed to European design procedures and construction procedures as well as different equipment than what is used in the U.S. He sees DFI as “offering widespread expertise over the entire deep foundations industry: contractors, designers, equipment makers, all with an unbiased point of view.” Doherty served on two DFI Technical Committees — Marine Foundations and Driven Piles, and says the firm is now considering entering the U.S. market.

This very busy engineer takes some time off from his work to play golf “badly.” More importantly and time-consuming; he is the father of “two under two,” which translates to two young sons under two years old!

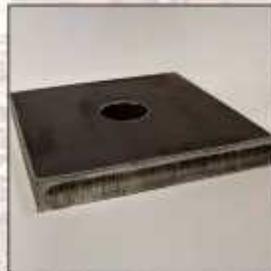


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