

JUNE 2008 MEETING

Wednesday, June 11, 2008

TECHNICAL PROGRAM

Helical Piles - Design Theory and Applications.

Speaker: Darin Willis, P.E., Ram Jack Distribution, LLC, Garland TX, Tel. No. 972-494-3800

PRESENTATION SUMMARY

To a room of about 65, Darin Willis, P.E, senior engineer for Ram Jack Distribution, LLC and a licensed professional engineer in Texas presented, "Helical Piles - Design Theory and Applications".

Mr. Willis said the first helical pile use was in 1836 by Alexander Mitchell in England. His company, Ram Jack has offered helical piles since 1984 and currently build them at their headquarters in Ada OK. The Ram Jack design is made from API drill pipe varying in diameter from 2 7/8" to 4 1/2". The pipe joints are screwed only for the smaller sizes and through-bolts are added for the larger sizes. The fins are plate steel welded to the drill pipe. Up to 6 fins may be added to a helical pile, varying from 8" to 16" in diameter and from 3/8" to 1/2" in plate thickness. The smaller plates are used at the bottom of the pile.

Mr. Willis said that Ram Jack's helical piles can be designed for ultimate capacities up to 200 kips in tension or compression and with batters if needed for lateral resistance. When in compression, IBC Section 1808.2.9.2 requires a design unbraced length of 5 ft. for firm soil and 10 ft for soft soil conditions. Minimum spacing to avoid group effects is 5D, but 3 ft minimum, where D is the diameter of the largest fin. The Ram Jack helical piles can be used for new construction or repair of foundations. They offer a "Moly Bolt" type of connector for lifting a slab through an interior 10" diameter hole. There is no welding, drilling spoils or vibration during pile installation. Because the piles are torqued to penetration, no structure is needed for reaction resistance during driving.

According to Mr. Willis, Ram Jack is a primarily a hardware supplier and the engineer of record on the particular project must do his or her own design calculations. Free design software is offered by Ram Jack at: <http://www.ramjack.com/engineers/>. The company also offer free consulting advice. The geotechnical engineers needs to specify the design parameters and safety factors of the soil.

Mr. Willis also presented several case histories that can be viewed in the attached slide presentation, beginning with Slide No. 38.

To download Mr. Willis' slide presentation [click here](#).

