

JULY 16, 2003 - FPA Committee Paper FPA-RC-01, "Post Foundation Repair Performance. A Study of Foundation Repair Failure"

Speaker: [Ann Nelson](#) (tel. 713-473-2382, 281-420-1739), Member, past president of the FRAT, a founding member of FRAT and chair of the FPA's [Repair Committee](#).

PRESENTATION SUMMARY

Ms. Nelson, Owner/Operator/President of Nelson Construction and Foundation Repair along with committee members Dan Jagers of Olshan Foundations, Kenny Dutton of Du-West Foundation Repair and Chris Cates, also with Du-West presented their Repair Committee's paper entitled, "Post Foundation Repair Performance - A Study of Foundation Repair Failure". Revision C, which had been successfully peer-reviewed by the FPA was presented and handed out to the audience. Some changes will be incorporated based on the audience's comments and questions. The final revision will be published at: <https://foundationperformance.org/events/committees/repair/#gsc.tab=0> by August 1, 2003.

Their combined presentations to a room of about 50 addressed the various types of foundation repairs available such as mud jacking or helical piers along with maintenance systems such as root and moisture barriers, giving common reasons why they do not always perform as intended.

Some points made by the speakers:

- Mud jacking, mud pumping and foam injection to lift foundations remains a risky operation due to the possibility of over-pressuring and clogging leaking sewer lines.
- Piling systems such as Ram Jacking or Pressed Piling need to be driven to refusal, i.e., to the point of lifting the foundation rather than just a certain pressure reading, and refusal should not be checked after setup occurs (in clay). Doing so can give about a 4:1 safety factor on the piles.
- Brackets for helical piles and ram jack piles need to be hot-dipped galvanized or epoxy-coated or they will not last in this area due to corrosion.
- Often the repairs fail because large trees were removed, trees which were there decades before the foundation or the foundation addition (being repaired) was constructed. In these cases, the removal of the trees allowed rehydration of the clays which heaved the foundation off the repair piles or piers.
- French drains and sprinkler systems if used should be at least several feet from the foundation. Downspouts should not be tied into French drains. They should go into a closed system.
- Root barriers are helpful in controlling subsidence from nearby trees, but roots tend to grow over and under them. The owner needs to maintain the roots growing over. Maintenance is not feasible for the roots growing below. Root barriers can cause heave due to rehydration as a result of cutting the roots.
- Sometimes pier caps of drilled and cast-in-place concrete bell-bottomed piers are too thin and break off when the jack is removed from the center and load is transferred to the thinner edges.
- Helical piers tend to lay over if not accurately installed at the correct angle of about three (3) degrees.

[PAST PRESENTATIONS \(click here\)](#)