

P-3198 – CIRIA Piling Guides – Good practice guidance

Background to CIRIA proposal

CIRIA's suite of piling guides were first published in the mid-70s and 80s and since then there has been tremendous advancement in the range of techniques, plant and equipment and materials used in the construction of piled foundations. There have also been changes to design standards, codes of practice and legislation during this time. These guides were very well received by industry at the time for their effectiveness in educating the reader on a whole range of piling related issues whether they were just starting their career or seasoned professionals.

CIRIA proposes to undertake research to produce a new suite of guides covering the techniques, plant and equipment and materials of today. The intention is to produce a second generation of these guides building on the success of the earlier guides. Some of the topics covered will remain the same and some will be new. We do not intend to cover in detail topics where there is existing guidance in place.

To start, we propose to develop good practice guidance on **problems associated with cast-in-place concrete piles** as this is likely to provide the greatest financial benefit to specialist contractors and clients managing large infrastructure projects. This will also complement another CIRIA project underway on zero defects for cast in-situ concrete.

The project's key long term objective will be to produce new guidance based on earlier guidance:

- A review of bearing pile types (PG1 – 1988 2nd Edition) and will be complementary to ICE Specification for Piling and Embedded Retaining Walls.
- Review of problems associated with the construction of cast-in-place concrete piles (PG2 – Jan 77). This will include piling techniques such as Continuous Flight Auger (CFA), sectional casing use and new materials e.g polymer, which have developed since the original publication.
- Pile load testing procedures (PG7 – March 1980).
- Survey of problems associated with the installation of displacement piles (PG8 – Oct 1980). This will include bored displacement piles and screw piles.
- Noise and vibration from piling operations (PG9 – Oct 1980). BS5228 - Code of practice for noise and vibration control on construction and open sites probably covers most aspects but basic principles can be covered elsewhere.

Presently out of scope as a single guide but some aspects will be incorporated into the outputs:

- PG3 – Sept 1977 – The use and influence of bentonite in bored pile construction. Now covered by The European Federation of Foundation Contractors (EFFC) and Deep Foundations Institute (DFI) guide for the use of support fluids in deep foundations.
- Integrity testing of piles: A review (PG4 – Sept 1977). Integrity Testing in Piling Practice: R144 is still current.
- PG5-1978 – Piling in 'boulder clay' and other glacial tills.
- PG6-Sept 1979 - Piling in chalk.

The project's key outputs will be:

- A suite of good practice guides.
- Industry dissemination.

The project outcomes are to:

- Provide the piling industry with a suite of guides to enable the training of site personnel, designers, construction managers and ground engineering specialists.
- Better project outcomes for managing geotechnical risk.

The project will start in Dec 19 / Jan 20 with the first outputs delivered by the winter of 2020 and project completion anticipated in October 2022. Financial support is required to cover the costs of the project (£300k).

The benefits of funding a CIRIA project

- **Industry leadership** – leadership by influencing and shaping industry guidance.
- **Industry collaboration** – Collaboration at a strategic level to address an industry issue.
- **Industry expertise** – Recognition of an organisation’s reputation.
- **Setting the standards for industry** - CIRIA guidance is often cited in client specifications and engineering standards as good practice to adopt.
- **Business marketing** – The work of CIRIA is widely reported in industry press and social media. Those who fund the project are formally acknowledged in the publication. Recognition in this manner is long lasting and in an instant it positions an organisation as a leader, collaborator and expert.
- **Industry dissemination** – This is an opportunity for funders, project members and sponsors to promote their involvement. These events will also be highlighted in CIRIA communications.
- **Business impact** – Involvement with a CIRIA project can only help to raise an organisation’s profile with a wider audience of practitioners. Whether you are a client or practitioner, industry wants to see that the service they are getting is based on good practice. Clients want to be able to assess their operational performance against good practice. Practitioners want to know they are working to good practice.

About CIRIA

The Construction Industry Research and Information Association (CIRIA) is the technical centre of gravity for the construction industry. We share knowledge and generate continuous improvement across the sector by delivering good practice guidance, training courses and networking events. CIRIA aims to be the leading provider of guidance in the infrastructure sector. CIRIA has been active in this community for many years and the guidance produced has played an important role in shaping the understanding and the adoption of the techniques developed over this time. Further details can be found via our website www.ciria.org or get in touch with kieran.tully@ciria.org regarding this project proposal.

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