Foundation Specialists Group

Name:
Jim Slatter

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Areas of expertise:

Deep foundation engineering, geotechnical engineering, foundation construction, concept design, early tender involvement, risk management, constructability, program, cost planning, alliancing, pile design, deep excavations, basements, retaining walls, bridge foundations, bored piles, drilled shafts, hard rock drilling, driven piles, CFA piles, displacement piles, secant pile walls, sheet piling, piled retaining walls, diaphragm walls, soil mixing, drilling fluids, bentonite slurry, polymer slurry, static load testing, dynamic pile testing, mine filling.

Post Nominals

BEng, PhD, FIEAust, NPER, CPENG, RPEQ.

Qualifications:

- Bachelor of Civil Engineering (Hons), 1995, Monash University, Melbourne, Australia
- Doctor of Philosophy in Geomechanics, 2001, Monash University, Melbourne, Australia
  Thesis: The Fundamental Behaviour of Displacement Piling Augers

Professional Memberships and Affiliations:

- Registered Professional Engineer of Queensland (RPEQ) (Registration # 13421)
- Registered Building Practitioner (Registration # EC 29499)
- Fellow of Engineers Australia (FIEAust Membership # 1060224);
- Chartered Professional Engineer (CPEng - Civil)

Career Overview:

Jim is a Principal Geotechnical Engineer with 20 years experience spanning geotechnical consulting, academic research and contracting. As Managing Director of two of Australia's largest piling contractors (Vibropile and Piling Contractors), he has been involved in tendering, design, project and construction management for some of Australia's largest and most challenging piling projects. Jim extensive experience in design and construction of a broad range of piling systems provides essential practical and technical experience to what is often a high risk component of the design and construction process.

Jim was also a founding member, and later Chairman, of the Keller Global Piling Committee (GPC), a committee tasked with driving innovation and sharing best practice in construction, risk management and design across the Keller Group's global piling businesses, with an annual turnover in excess of $2.5B AUD. He is well informed on the latest construction techniques and technical innovations in the piling sector as well as risk management processes during construction.

Jim has been involved in a wide variety of projects nationally and has a detailed understanding of pile design, testing and installation specifications including all relevant RMS specifications. Jim is regularly invited to speak at

technical seminars on pile design, construction techniques, testing and verification.

Key Skills and Expertise:

Jim has wide ranging and proven expertise in the following:

- Construction of major foundation and earth retention projects in commercial construction, infrastructure and resource sectors;
- Concept design and detailed design of piled foundation and retention systems;
- Risk management and cost planning of foundation and retention piling projects;
- Geotechnical design and RPEQ certification of foundation and retention schemes for major building, infrastructure and resource projects.
- Detailed knowledge of a wide range of pile construction techniques;
- Specification, testing, verification and sign off of piled foundation and retention systems.

Employment History:

2012–current:
Director, Foundation QA Pty Ltd & Foundation Specialists Group Pty Ltd
Consulting in all aspects of foundation engineering projects throughout Australia and internationally. Specialising in early tender involvement, concept design, risk and opportunity, constructability, program and cost.

2010-2012:
Managing Director, Piling Contractors Pty Ltd
Overall accountability for Safety, Quality, Financial performance and strategic direction of Australia's largest piling subcontractor. Provide direction and leadership to Senior Management Team, set company strategy, review major bid submissions for technical merit, risk, cost and program, contract negotiation and dispute resolution.

2000-2010:
Vibropile Pty Ltd: Managing Director (2006 – 2010), General Manager (2005-2006), Victorian Manager (2003-2005), Contracts Manager (2002-2003), Design Engineer (2000-2002).

As Managing Director had overall accountability for: Safety, Quality, Financial performance and strategic direction of the company. Provided direction and leadership to Senior Management Team, set company strategy, review major bid submissions for technical merit, risk, cost and program, contract negotiation and dispute resolution.
Also performed a range of project engineering, project management, construction and contract management roles for a wide variety of foundation construction projects, involving deep CFA piles (up to 47m), bored piles, sheet piles, secant/contiguous/soldier retaining piles; encompassing engineering design, tendering, estimating and contract negotiation,

1995-1996:
Geotechnical Engineer, Douglas Partners Pty Ltd
Planning, execution and reporting of geotechnical site investigation works and geo-environmental site assessments, including site operations, geotechnical logging, sampling, testing, modelling, and formulation of technical recommendations. Supervision and certification of pile foundation and pad footings during construction.

Selected Projects:

Foundation Specialists Group (2012-current):

Kingsford Smith Drive Upgrade - Tender Design
Client: BMD Leighton Joint Venture
Contract Value: $110,000
Tender design of piled foundations for ~ 1.1km bridge structure in Brisbane River. Tender design of ~ 1.3km of marine retention structures in the Brisbane river including slope stability assessment and scour protection works. Tender design of ground improvement works associated with marine retention structures.

Newcastle Coal Infrastructure Group (NCIG) Rail Bridge (2014)
Client: Lend Lease
Contract Value: $110,000
Detailed design of piled foundations, reinforced soil walls and assessment of interaction effects with ground improvement and 8m high embankments on soft soils for new rail bridge at the NCIG site. The project involved 2D and 3D finite element modelling of foundation and ground improvement elements, along with reinforced soil retention structures

Mackay Ring Road Project - Detailed Design
Client: Department of Transport and Main Roads Queensland
Contract Value: $200,000
Detailed design of piled foundations for 14 # bridge structures for the Mackay Ring Road Project including main bridge over the Pioneer river, input into geotechnical site investigation scope (SI performed by TMR), responsibility for interpretative report and design reports pertaining to bridge structures. Foundation types include prestressed, driven piles and bored piles. Ground conditions on site were particularly challenging for piled foundations with dykes and igneous intrusions encountered across the site.

Yeppen Floodplain Upgrade Project - Alternative Foundation Concept Design
Client: Department of Transport and Main Roads Queensland
Contract Value: $40,000
Peer review of conforming design and concept design and budget pricing of five alternative piled foundation alternatives for 1.2km elevated road structure. Risk and opportunity review was also conducted on alternative and conforming schemes in order to assist DTMR with selection of the appropriate foundation scheme for the project. Project piling specification was also reviewed and updated.

Yeppen Floodplain Upgrade Project - Pile testing, engineering supervision and sign off and acceptance of piles.
Client: John Holland
Contract Value: $480,000
Project comprised ~ 1000 prestressed octagonal piles and 70 bored retention piles. FSG provided full time engineering supervision and support of piling works. Scope included driveability analysis for hammer selection and assessment of driving stresses, assessment of prebore lengths and freestanding of piles, PDA testing of 12.5% of piles and PDM testing of 100% of piles. FSG's PileManager database was also utilised on the project to track piling progress and QA/QC.

Cape Lambert Expansion – CLA Link
Contract Value: $150,000
Concept design, budgeting and cost/benefit analysis of three alternative pile solutions. Assistance with review of bid during procurement phase, writing of technical specifications and detailed design of the final piling solution for the transfer station and 3 # conveyors. FSG was also engaged to carry out the construction supervision and sign off of piles. FSG's end to end involvement in the project allowed a different piling solution to be adopted on the site (previously Frankipiles had been used). This offered substantial time and cost savings to the client and was delivered ahead of time and on budget.

Pacific Hwy Exit 54 - Coomera Interchange
Client: Seymour Whyte
Contract Value: $65,000
Site investigation for foundation piles and retaining walls. Construction supervision and RPEQ sign off of bored foundation and retention piles. Plate load tests and certification and sign off of bearing capacity for pad footings. Design of piling access platforms including slope stability of embankments and design of sheet pile retention structures. Alternative design of soil nail walls.

Piling Contractors Pty Ltd (2010-2012):

APLNG Downstream Processing plant Structures (2012)
Main Contractor: Bechtel Pty Ltd
Contract Value: $16M

Project comprised the supply, installation and testing of approximately 1,600 coated, driven steel piles on Curtis Island, Queensland. The project was particularly challenging from a logistics standpoint with all plant, personnel and materials being ferried to the Island from Gladstone Port. Piles were driven to a depth of approximately 18m through engineered fill and alluvial soils and were founded in the underlying weathered rock. The project also comprised three static load tests (compression, tension and lateral) and approximately 70 dynamic load tests.

QCLNG Upstream Gasfield Infrastructure (2012)
Main Contractor: Thiess Contractors Pty Ltd
Contract Value: $12M

The project comprised the installation of approximately 3,000 bored piles for compressor stations and associated infrastructure. All piles were sleeved in order to cater for reactive soils (shrink/swell). Particular challenges for this series of projects included extremely variable ground conditions across the difference gas fields requiring a wide range of drilling techniques ranging from truck mounted rigs for soils and weak rocks through to heavy duty crawler mounted rigs required to drill high strength rock. A rapidly evolving design brief and stringent site operational constraints across a number of different concurrently operating sites also posed challenges for the project team.

Hunter Expressway Alliance - Minefilling (2011- 2012)
Main Contractor: HEA (Thiess, PB, Hyder)
Contract Value: Approx. $48M
This $48M sub-alliance involved the targeted drilling filling of 100 year old decommissioned coal mines to depths of up to 120m to facilitate the construction of the Hunter Expressway viaduct structures and sensitive at grade structures. Drilling and filling works comprised approximately 145 km of directional drilling across some 1,500 holes and the injection of 200,000m^3 of grout paste into the mine workings. The mine fill project at the Hunter Expressway represented one of the largest and most challenging mine filling projects ever carried out in Australia. Stringent environmental and indigenous heritage restrictions combined with dense bush land and extremely hilly terrain provided further challenges and required extremely accurate directional drilling and grouting patterns.

Publications:

- Slatter, Seidel, Kingwell (2000). A Proposed Model for Soil/Auger Interaction during Installation of Screw Piling Augers. Deep Foundations Institute.
- Slatter (2000). The Fundamental Behaviour of Displacement Screw Piling Augers. Monash University, PhD Thesis
- Slatter (2006). Recent Developments in Continuous Flight Auger (CFA) and Cast-in-Situ Displacement Screw Piling in Melbourne. Australian Geomechanics Journal, Vol. 41, September 06
- Slatter, Tchepak (2008). Design and Construction Aspects of Piled Foundations for Eureka Tower Project, Bored and Augered Piles Conference V (BAPV)

Referees:

Upon request.