

**STUDY OF PREBORED PRECAST PILE SYSTEM  
- A QUALITATIVE APPROACH**



**INSTITUT PENYELIDIKAN, PEMBANGUNAN  
DAN PENGKOMERSILAN  
UNIVERSITI TEKNOLOGI MARA  
40450 SHAH ALAM, SELANGOR  
MALAYSIA**

**BY:**

**LIM JIT KHENG  
NG WEN KUAN  
MOHD FARID BIN AHMAD @ MAJID**

**DECEMBER 2006**

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Surat Kami : 600-IRDC/ST 5/3/891  
Tarikh : 5 November 2004

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### PERLANTIKAN BAGI MENJALANKAN PENYELIDIKAN

Merujuk kepada perkara di atas, bersama-sama ini dimajukan salinan surat kelulusan menjalankan penyelidikan serta ringkasan kos perbelanjaan bagi penyelidikan yang dijalankan oleh pensyarah dari UiTM Cawangan Pulau Pinang ;

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Ketua Projek : Lim Jit Kheng  
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Sekian, terima kasih.

Yang benar

**PROF DR AZNI ZAIN AHMED**  
Penolong Naib Canselor (Penyelidikan)

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*(Sila hantarkan geran penyelidikan bagi projek ini ke Kampus Cawangan)*

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Tarikh: 29 Disember 2006

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Prof,

**LAPORAN AKHIR PENYELIDIKAN “STUDY OF PREBORED PRECAST  
PILE SYSTEM – A QUALITATIVE APPROACH”**

Merujuk kepada perkara di atas, bersama-sama ini disertakan 2 (dua) naskah Laporan Akhir Penyelidikan tersebut untuk makluman pihak Prof.

Sekian, terima kasih.

Yang benar,



**LIM JIT KHENG**  
Ketua  
Projek Penyelidikan

## ABSTRACT

In recent years, an alternative foundation system which known as “prebored precast pile system” (PPP) has been introduced in northern region of Malaysia to replace micropile system for areas with shallow rock stratum. It is an integrated system that combining the conventional bored pile and driven pile system. The construction processes involve preboring a slightly bigger hole using micropile machine into rock layer, inserting a precast spun pile section and followed by tapping action to satisfy certain set criteria.

Feeling of doubtfulness among the practising engineers about the system has urged the researchers and engineers to look into the problem. A preliminary study has been carried out by conducting face-to-face interview with recognised geotechnical experts in Malaysia, to figure out the acceptance level among them and collect their opinions and comments on the system. The study aims to provide more professional insights and indication on the viability and validity of the system which could be used as a practical reference for practicing engineers.

The expert opinions were pooled together and presented in details using sub-headings of: *System Overview, How to Treat the Gap? Tap-to-Set, Design Considerations, Construction Challenges, Pile Load Test, and Accepted or Not?* The result showed that most of the experts cannot accept the system at the present stage until more researches have been done. Preliminary criteria to be fulfilled to apply the system satisfactorily have been identified and future research areas on this system were recommended.