

Special Talk with a corporate member

IPA Secretariat

Dr. O. Kusakabe, the President of IPA interviewed Mr. David Liaw Wie Sein, the Managing Director of Guan Chuan Engineering Construction PTE Ltd., in Singapore, on April 24 Tuesday 2018 at IPA office in Tokyo.

Dr. Kusakabe: David, welcome to the IPA headquarters and I am very grateful for having this opportunity. IPA places a special importance on the role of operators in Press-in Engineering. Operators' experiences of solving unexpected difficult problems during piling operation and their feedback to project managers, geotechnical designers and machine designers plays an essential role for improving geotechnical design, mechanical design and satisfactory accomplishment of projects. That is why IPA newsletter includes on-site interview regularly, trying to convey messages from operators to IPA members.

Mr. David Liaw Wie Sein: Thank you for inviting me for the interview. I cannot agree more what you have said. Yes, I fully agreed that operators are taking the most important roles in piling projects.



Figure 1 Dr. O Kusakabe

Q: Let me ask, first of all, why you entered in piling business.

A: Having some working experiences in Hong Kong after my study at university, I joined the father's business. He was doing a bit of sheet piling business. When I took over his business, the major problems were dealing with hard ground. I have experienced some accidents as my dark side. In the 1990s, the most, I would say 70%, of accident caused on sheet piling works were toe failure due to insufficient penetration depth into the hard ground. I had gone through the stages where I used electric hammer, diesel hammer, and vibro-hammer, causing prolong vibration and noise.

Q: What is your view on those toe failures occurred?

A: I thought there are two major reasons behind there. First one is "poor workmanship" and second one is "poor machinery" to deal with hard ground. Then, I also learned through my experience that the design on sheet piling is the other problems too. Excessive design because of the designers' liabilities concerns and the deviation between design and construction site conditions are the essential reasons, I believe.



Figure 2

Mr. David Liaw Wie Sein

Nicoll Highway collapsed on 20 April 2004 was a very important wake-up call for Singapore Authorities and construction industry. Singapore learned from this bitter experience. The whole things were changed, and regulations became strict such as an allowable movement limit on Earth Retaining Structures. Concurrently, Building and Construction Authority (BCA) issued the new Submission Requirements and Procedures.

Then we decided to purchase a Crush Piler for sheet piling to deal with hard ground some ten years ago, though it was so expensive. Now we are an integrated design and build specialist in hard ground and sensitive environment piling work. Our website (<http://guanchuan.com/>) compiles completed projects, including Singapore General Hospital project as our remarkable one.

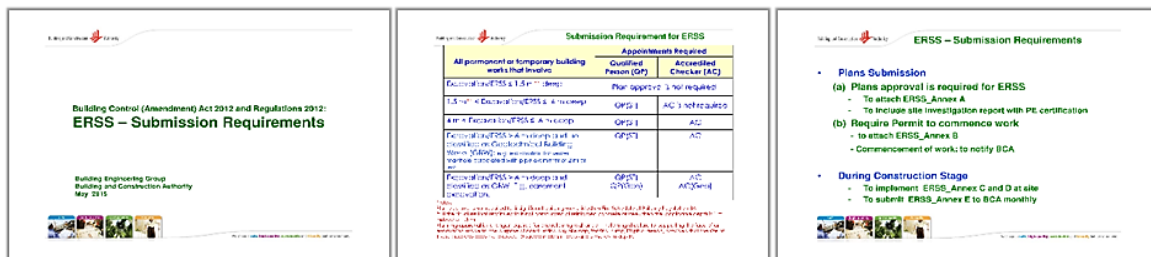


Figure 3 Submission requirement for Earth Retaining Stabilizing Structure (ERSS) issued by BCA



Figure 4 Singapore General Hospital

Q: What is your opinion to deal with those criteria?

A: As I said, toe failure is the biggest concerns and major cause of accidents, so my objective is to guarantee sufficient penetration depth with high quality of workmanship and machinery to satisfactory comply with the strict guidelines and regulations. In my view, the quality of workmanship by operators is very important not only for the proper piling execution under the constrained circumstances but for feedback of site conditions to the client and designers to minimize deviations in design and actual site reality.

Q: How do you train operators from the views of both skill-up and mindset?

A: I strongly believe that there are several key points for operators' skill-up. Firstly, the operators have to be skillful with good understanding on machine mechanism. Secondly, the operators should have basic understanding on soil characteristics and piling mechanism. Thirdly, the operators should have a right mindset to accomplish works safely.

In order to train operators and to share the same understanding of my company's policy with operators, I hold "regular morning meeting" on a daily basis and also hold "internal weekly meeting" for problem finding and solving to share accumulated experiences among operators/workers who are actually conducting piling works on site. Further, I am very keen to provide continuous trainings for operators by the proper trainer deployed by the manufacture and I have continued this training every year ever since I purchased Silent Piler. I always made a request to the trainer to accurately evaluate our operators as his view. I also sent a few operators to the manufacture for initial training at the time. I guess this continuous training on operators is very essential not only to maintain the quality of operators since I employed many foreign operators but also to properly disseminate the Press-in Method in Singapore.

Q: Can you share with me of your company's achievement with introduction of some successful projects?

A: All the past projects are introduced on my company website at <http://guanchuan.com/crush-piler-page1/> . My business philosophy is to produce the high quality of work with safety assurance for piling work, not a profit making.

As everyone is aware that Land Transport Authority (LTA) is the most stringent Government Authority in Singapore, may be in the world. One day, I was invited by LTA to present the project plan with pricing on the particular project under tough situation and I raised all concerns and predicted difficulties with my solution scheme in detail. As the consequence, my company was directly nominated by the Authority to be a specialty contractor without price negotiation even before a prime contractor was selected by bidding. Then, the Authority provided a special condition in the project specification to select my company to be a nominated subcontractor in the bid document for the selection of prime contractors. I was very proud of it and had a confidence on my approach.

I was also invited to IPA Workshop held in Singapore in 2012, a few years later I purchased a Crush Piler, and having an opportunity to introduce my experiences utilizing a Crush Piler in Singapore market. My speech was introduced as an article on newspapers and magazine so that I was able to demonstrate Press-in technology for hard ground and that was one of my good turning points to have a wider awareness of Press-in technology for hard ground.

Q: How do you foresee the future of Press-in technology?

A: This is the way to forward though it is still limited use in Singapore. But I believe that it is the matter of time to gain a wider acceptance of the technology. I must say that there is still a room, even in Singapore, to improve awareness of the Press-in technology. I set the business targets sharing with all employees including operators, which are accumulating “Self-confidence”, aiming for “Good achievement” without accidents, obtaining “Satisfaction” from Authorities and finally making “Contribution to society”

Europe and USA may have some difficulties, though. There are Union issue, strong vested interest on conventional methods and the maturity degree on codes and regulations in construction industry, in my view. Therefore, the other approach may have to be considered for positive acceptance of Press-in technology as compared to Asian region.

Q: What kind of messages do you want to convey to operators?

A: Again, I like to send a strong message to operators as “be responsible on quality of piling”, “proud of your skill with continuous effort to improve” and “maintain good mindset” as qualified operators. Again, as I mentioned earlier and agreed on Dr. Kusakabe’s view that operators’ role is very essential without any doubt.

Q: Considering the recent move to automated construction machine for higher productivity in the construction industry, it would lead to change of role of operators. What is your view on this?

A: I totally agree with your view. It is very essential issue to equalize quality with higher productivity. I believe that even achieving that direction, good feedback from operators and site engineers on design and further development on machineries are of essence.

David, I thank you to visit IPA headquarters today to share very valuable information and you’re thought on Press-in technology. Receiving of your message will be published on the next IPA newsletter then to be distributed over 2000 readers throughout the world.



Figure 5 Picture with Mr. David Liaw Wie Sein after the interview

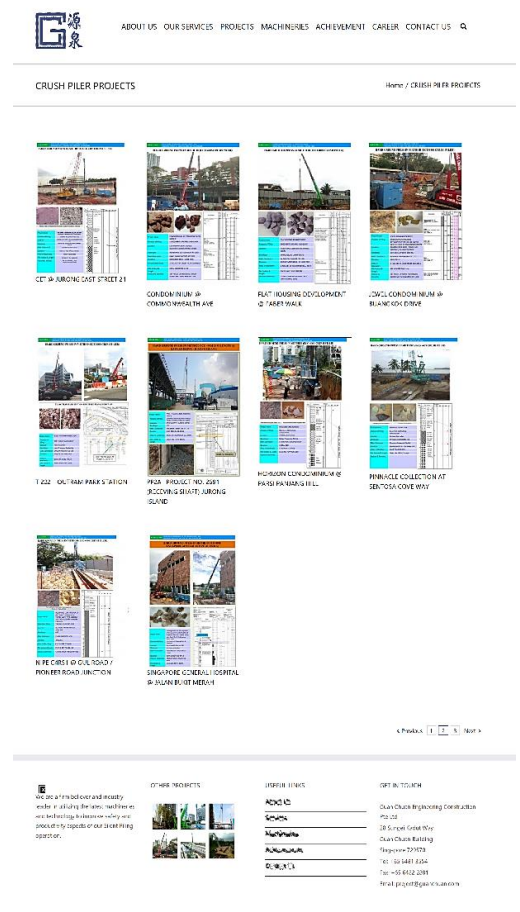


Figure 6 Guan Chuan Engineering Construction PTE Ltd. home page