

On-site Interview

Interviewer: Ms. Hongjuan He
IPA Secretariat

IPA has just opened the new corner of the On-Site Interview in the IPA Newsletter. I have interviewed Mr. Morishita and Mr. Okabayashi who are working for Giken Seko Co., Ltd., and have constructed a retaining wall at Hachioji city in Tokyo using large diameter of steel tubular piles by Gyopress (Rotary Cutting Press-in) Method. I thank them for giving us valuable insights during this interview.

Profile of Mr. Takeshi Morishita, Assistant Manager of Giken Seko Co., Ltd.

Mr. Morishita joined the company on April 1993, and has engaged in Press-in Method for over 23 years. He had experienced working on “Steel Tubular Sheet Pile Press-in Method”, “Hard Ground Press-in Method”, “Gyopress Method” and so on. Also he had also experienced working in Australia. He was engaged as a Chief Site Engineer in this project. He has qualifications of “First-class Press-in Operation Engineer, The Second-class Civil Engineering Works Execution Managing Engineer, Superintendent, Safety and Health Controller” and so on.



Profile of Mr. Kei Okabayashi, Chief of Giken Seko Co., Ltd.

Mr. Okabayashi joined the company on April 1997 and has over 19 years of field experiences of “Steel Tubular Sheet Pile Press-in Method”, “Hard Ground Press-in Method”, “Gyopress Method” and so on. He was engaged as a main operator for this project. He has qualifications of “First-class Press-in Operation Engineer, The Second-class Civil Engineering Works Execution Managing Engineer, Superintendent, Safety and Health Controller” and so on.



Q1. Can you tell us why the Gyopress Method was adopted and what are the features of this construction?

Mr. Morishita: Because of the population increase in Hachioji city in recent years, traffic congestion has become a social issue. That's why Ministry of Land, Infrastructure, Transport and Tourism planned to mitigate the traffic congestion by widening the road and decided to order the project. Our scope was to construct a retaining wall by Steel Tubular Pile. The Gyopress Method was adopted because this method is able to reduce total cost with no adverse impact on surrounding environments and regional economy though the project shall be carried out in a narrow site with adjacent housing and road.

Mr. Okabayashi: Feature of the project was to use the $\phi 2000\text{mm}$ of Large Diameter Steel Tubular Piles because of the limited construction space due to the adjacent housing where the high retaining wall to bear big earth pressure is required.

Q2. Was the construction carried out smoothly? If there were any difficulties, can you tell us about it and how did you solve it?

Mr. Okabayashi: Yes, the construction was carried out smoothly, but there were some difficulties because it was the first time to adopt the $\phi 2000\text{mm}$ of Large Diameter Steel Tubular Pile, compared to other projects. There are two water-pipes inside a tubular pile for lubrication to assist piling smoothly. We use fixing plates to fasten the water-pipes. On this operation, we considered the ground condition, and found that it was still possible to conduct the piling with less fixing plates than usual. But when we started operation, the soil resistance of large diameter steel tubular pile is larger than the prediction, so it was necessary to increase the number of the fixing plates more than we planned. Through this experience, we found that it is necessary to feed back issues beyond the scope of assumption to the future projects.

Q3. You said that you try predicting the problems before the operation, can you tell me more in detail?

Mr. Morishita: Firstly, the construction promotion section of our company evaluates all information such as ground conditions and site requirements which are given by the client, the prime contractor and the designer then make the appropriate site planning for safe and smooth operation. Secondly, the construction development section which takes charge of site operation, re-examines the planning, then deploys on-site members by providing the meeting to disseminate the site planning. However, it is difficult to predict problems completely in advance, so it is necessary to deal with those unforeseeable problems at site.

Q4. I heard that this project has drawn high attention from project clients, designers and neighborhoods. What is the reason behind there?

Mr. Morishita: The site tour was held many times. The visitors were not only people affiliated with construction but also neighborhoods, parents and children so that we felt their keen interest to the project. I was happy that so many people came to the site tour and it have been good opportunities for them to appreciate the Gyropress Method.

Q5. Please share with us your toughest operational experience.

Mr. Okabayashi: One of the tough projects was the aseismic reinforcement to bridge piers in which sheet piling had been conducted in the river during the mid-winter in Yamagata Prefecture, Japan. It was very freezing since my feet were in the cold river water while I had operated the Silent Piler under the bridge even I had tried my best to warm myself. The other one was the project at shipyard in the Hiroshima Prefecture. Gyropress Method was adopted but the toe bits had been worn out quickly since the piling was conducted throughout bedrock. We had carefully re-examined the situation and had decided to introduce Pre-auguring Pile Method ^{*1}. This method enables piles to be embedded properly to hard bedrock and we had carefully continued the piling operation.

Pre-auguring Pile Method ^{*1}: pile(s) specially used for pre-augering when there is an underground obstacle or hard bedrock during Press-in operation with rotary cutting (Gyropress Method)

Mr. Morishita: I have experienced different difficulties through all projects so far and I still can clearly remember my first operation in particular. That was Press-in operation of steel sheet piles. I had learned about Press-in machine before I was assigned to the project, but I didn't have on-site experience. So, I had asked all kinds of questions to my seniors and colleagues to obtain whatever I need to know about Press-in technology.



Photo 1: Gyro Piler is installing a $\phi 2000\text{mm}$ large diameter of steel tubular pile.

Q6. Did you have any overseas project experience? What's the difference between Japan and overseas?

Mr. Morishiita: Yes, I had experienced to engage in a subway project in Australia. I had pressed-in steel sheet piles for starting and arrival shaft for shield machine. Languages and cultures were of course different, in addition there were difference in operating time and role allotment. Besides, the strength of Australian sheet piles were weaker than Japanese one, so I had to pay a careful attention to the piles causing no damage during the piling operation.



Photo 2: Site tour

Q7. I believe that the training to local operators for Press-in technology is needed when overseas construction is expected more and more. What are the important things for it in your opinion?

Mr. Morishita: The perspective of pile and piling, for usages and functions, varies in countries, the same as languages, cultures. For example, sheet piles are mostly used for temporary works in Japan, on the other hand those are often used for permanent work in overseas. It is of course important to complete the project as planned but our objective is to complete the project with aesthetic and accuracy. However, we found some cases in overseas projects that aesthetic and accuracy are not concerned as far as the final products perform the required functions. Bear in mind, if each pile is off by 1 cm and the continuation of 10 piles installation ends up with 10 cm off in total. I believe it is very essential to share this basic Press-in concept with local operators for proper understanding. I had conveyed this to local operators while working in Australia, then I had observed that they had become very responsible for piling. But it is a time consuming and costly process if you conduct this through one to one. We can consolidate all the know-how based on whatever we had so far and compile those to the Silent Piler for automated operation, so that we can shorten the time to convey the know-how to local operators effectively and the piling process can be carried out with a simple manner to complete project just as planned.

I understand that GIKEN Ltd. as the manufacture of the Silent Piler has been already in the process for the above together with GTOSS (Giken Total Support System) program for machines and operators so that the Press-in technology to be globally disseminated.

Q8. What is your prediction about the future of Press-in technology?

Mr. Morishita: When I was engaged in overseas projects, I was praised by local staffs because our Silent Piler was very quiet in operation without disturbance to the surrounding ground. They said there are more places where the Press-in technology is applicable. I am looking forward to splendid social environment being brought by adopting the Press-in technology throughout the world.

Mr. Okabayashi: Giken Seko Co., Ltd. is being performed the Press-in piling which has been done by no one before under the stringent ground conditions and strict construction requirements. I believe that new technology will be innovated by challenging new projects, then the new technology enables the further difficult projects to be accomplished.

Mr. Morishita and Mr. Okabayashi were shy to answer the questions during the interview, but they tried their best to answer to all questions with their thoughts to me. When I joined the site tour in Hachioji city, the site was so quiet that I can hear the explanation of the site staff clearly. It was very impressed to me observing huge $\phi 2000$ mm tubular steel piles were rotating into the ground without noise, vibration and ground disturbance. Through this interview, I made myself sure that Press-in technology will be disseminated globally because of the further advancement of Press-in Technology and machines.



Photo 3: Interviewing with Mr. Morishita and Mr. Okabayashi

I would like to express my sincere appreciation toward Mr. Morishita, Mr. Obayashi and all who are concerned in this interview. Thank you so much.



Photo 4: Mr. Okabayashi is instructing co-workers to check a piling situation through a mobile wireless radio.



Photo 5: Mr. Morishita is checking the operation manual on site.

We welcome the on-site operators who are able to accept the interview. If you have any questions, please contact to IPA Secretariat address to Ms. Hongjuan He (ipa.ka@press-in.org). We are waiting for you!