

## Report

### Lecture Tour in Brazil

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South America is one of the blank areas where Press-in Technology has not been implemented in construction projects yet, as is shown in gray color, in Fig. 1. IPA organized a team of lecture tour in Brazil in November, 2018. The team consisted of IPA President, O. Kusakabe, an IPA Director, Prof. J. Takemura and the in-coming Deputy Secretary General, Mr. T. Takuma to disseminate the Press-in Technology and to gather pieces of information on piling practice in the country.

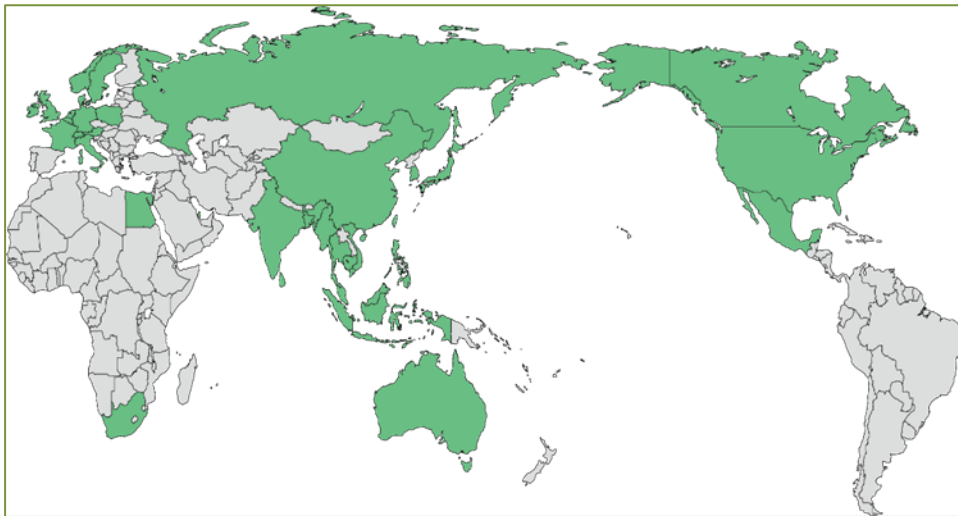


Fig. 1. Expansion of Press-in Method

The IPA team visited Sao Paulo, and Rio de Janeiro during the period of from Nov.23 to Nov.30, 2018. The two internationally well-known geotechnical engineers, Dr. S. Niyama (second from right in Photo 1), the Past President of Brazilian Geotechnical Society, and Prof. M. Almeida (second from left in Photo 2), a Professor of the Federal University of Rio de Janeiro had given the team great supports to arrange the lecture tour and a series of meeting with academia, contractors, consultants, construction machinery agents and steel makers, including Prof. N. Aoki, a Professor Emeritus of the Sao Paulo University, Prof. W. Hachich, a Professor of the Sao Paulo University as well as the former Vice President for South America of International Society for Soil Mechanics and Geotechnical Engineering, Mr. A. Negro, the Past President of Brazilian Geotechnical Society, Prof. E. Watanabe, Director of COPPE (Alberto Luiz Coimbra Institute for Graduate Studies and Research in Engineering) at the Federal University of Rio de Janeiro, Prof. E. Lopes and Prof. F. Danziger also of COPPE and many other eminent academia.



Photo 1. Group photo at Alianca Cultural Brasil-Japao

The lectures were given at four occasions, including those for the members of the Sao Paulo Branch of the Brazilian Geotechnical Society, and for professors and students of COPPE at the Federal University of Rio de Janeiro. The presentations were also given at GERDAU, the large steel maker in the South America region and for the Board members of SindusCon, Constructors Association in Sao Paulo. At these occasions, the IPA team got a strong impression that the audience showed a great interest in the Press-in Technology by asking many questions and even discussing a possibility of adopting the Press-in Technology in a real construction project that they were currently dealing with. The team was also given an opportunity to visit the site of a sheet piling operation in the suburb of Rio de Janeiro.

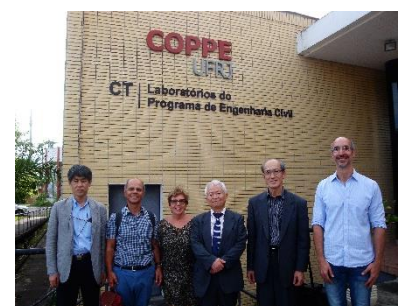


Photo 2. Group photo at COPPE

The IPA team has learned a lot about the piling practice in the country by the series of the meetings as well as the site visit. The team feels that the lecture tour in Brazil was very meaningful and successful, greatly thanks to the careful and thoughtful arrangements prepared by Dr. S. Niyama and Prof. M. Almeida. IPA very much appreciates their effort.

The following is the summary of contents of each lecture given during the lecture tour and a few snapshots.

## ➤ Summary of Kusakabe's Presentation

Although the contents of the four lectures given varied according to the audience, the purpose of the lectures remained the same, consisting of two parts: the introduction of Press-in Technology and of the International Press-in Association (IPA). In the first part, Kusakabe explained the historical development of Silent Piler and unique machinery features of the Piler, such as how this unique piler operates and how versatile the Silent Piler is. The presentation was followed by application examples in piling projects in North America as well as in Japan. In the second part, Kusakabe presented the concept of IPA which has dual functions as a learned society and as an industrial association. He introduced current main activities, including research activities, publications, Newsletter and Seminars & International conference as efforts of disseminating the Press-in Technology across the world.



Photo 3. Presentation by Dr. Kusakabe

## ➤ Summary of Takemura's Presentation

A research activity of IPA TC1 "Application of cantilever type steel tubular pile wall embedded to stiff ground" was introduced in this presentation. Thanks to the innovative pile installation method by Press-in technology, Gyropress method in particular, the applicability of self retaining tubular pile walls has increased significantly, such as large diameter pile wall in very hard ground. However, the design method of the new application has not been well established due to limited data on the critical performances, which should be rationally examined for the safe and economical design. Takemura presented results of centrifuge model tests, in which the performance of wall embedded in soft rock can be modeled from the serviceability to extreme load conditions, namely failure of the wall. He suggested the advantages and concerns of the wall confirmed from the model tests, which will be taken into account for the new design method.



Tubular steel pile wall

Failure of model wall

Fig. 2. Photos from Takemura's presentation

## ➤ Summary of Takuma's Presentation

Takefumi presented the following case studies, highlighting the advantages of the Press-in Piling Method utilized in densely populated urban areas or in physically tight project conditions in North America as well as in Japan.

1. Sandalwood Canal Improvement (Jacksonville, Florida, U.S.A.)
2. West Toronto Diamond Grade Separation (Toronto, Ontario, Canada)
3. Myoshoji River Restoration (Tokyo, Japan)
4. Route 134 Seawall Restoration (Kamakura, Kanagawa, Japan)
5. Foundation Reinforcement of San Juan de Ulua Fortress (Veracruz, Mexico)
6. Trabuco Creek Channel Protection Phase 7 (Orange County, California, U.S.A.)
7. Kumakami River Railway Bridge Foundation Repair (Ukiha, Fukuoka, Japan)