April, 2023

【Notice (Live Streaming)】

RRR
www.rrr-sys.gr.jp/en/

RRR Construction Technology Lectures

The RRR (Reinforced soil Road structures with Rigid facing) construction technology is now legitimately regarded as a high performance and high cost-effectiveness soil-reinforcement technology. A great number of those geosynthetic-reinforced soil (GRS) structures have been constructed in Japan and abroad, including, in particular, those for Japanese high-speed "bullet" railways, conventional railways and roads. RRR GRS Retaining Walls (RWs) are constructed following its unique staged procedure: firstly the embankment which is reinforced by many layers of planar reinforcements (geogrids) is constructed; then after sufficient deformation of the supporting ground and embankment has taken place, a full-height rigid (FHR) facing is constructed by casting-in-place concrete on the vertical wall face of the embankment ensuring a strong connection between the FHR facing and the reinforcement layers. RRR GRS RWs exhibit excellent constructability and high cost-effectiveness in comparison with conventional cantilever or gravity type retaining walls. Even when constructed on soft ground, detrimental effects of excessive settlements can be removed by this procedure. In addition, if necessary, the problem can be completely alleviated by preloading. With RRR GRS RWs, pile foundations for the facing become then unnecessary.

RRR structures performed extremely well during the 1995 Great Hanshin Earthquake, the 2011 Great East Japan Earthquake and the 2016 Kumamoto Earthquake among other major earthquakes in Japan and during extreme heavy rains including those in 1990 and 2012 in Kyushu-island. On the other hand, a number of conventional-type RWs and embankments collapsed in these events. Many of them have been reconstructed following the RRR technology, including sea walls for National Road No.1 in southwest Tokyo, following the 2007 Typhoon No.9; or bridges and embankments that collapsed by tsunami waves during the 2011 Great East Japan Earthquake in Northern Japan.

For bridges, RRR GRS Bridge Abutments support a simple-supported girder of a bridge by placing one end of the girder via a fixed bearing shoe place at the top of the FHR facing of the RRR GRS RW. A number of RRR GRS Bridge Abutments (about 185) have been constructed in place of conventional bridge abutments thanks to its high seismic and long-term stability, low construction cost and low maintenance cost particularly by essentially exhibiting zero bumps immediately behind the FHR facing.

Lastly, RRR GRS Integral Bridge is the more advanced recent bridge technology, for which, at the last stage of construction, both ends of a continuous girder are structurally integrated to the top ends of FHR facings of GRS RWs constructed as abutments. Because of its high performance and high cost-effectiveness due particularly to no bumps and no need for shoes maintenance works, a number of RRR GRS Integral Bridges have been constructed for railways at intersections with roads and waterways in Japan. Among them, several have been constructed to replace conventional simple girder bridges that were washed away tsunami waves in the 2011 Tohoku Earthquake. Relatedly, RRR-GRS Box Culverts (RRR-Box) also substantially reduce differential settlements and bumps, so they have been regularly constructed for railways including high-speed railways.

In this seminar, Professor Emeritus F. Tatsuoka (University of Tokyo) and Dr. S. Nakajima (Railway Technical Research Institute, Japan) will introduce in details the theoretical background and the actual design/construction aspects of RRR technology. The International Association of RRR Construction Method highly encourages all concerned agencies and engineers to participate in this seminar to understand the beneficial advantages of RRR technology in construction projects. Technical discussions among the attendees are also highly welcome.

Respectfully yours,

The International Association of RRR Construction System

www.rrr-sys.gr.jp/en/

Registration（For non-Japanese attendees）

1. Subject： RRR Construction Method Technology Lecture (Live Stream)

2. Date & Time： May 24th（Wednesday）2023　14:00～16:30（Japan time）
   (for reference)　Philippine time 13:00～15:30　Myanmar time 11:30～14:00
   India time 10:30～13:00　Indonesia time 12:00～14:30

3. Attending fees： None (free)

4. How to Apply： Please fill in and submit the application form (Google form) below,
   a ZOOM invitation will then be sent back to you (limited to the first 200 submissions)

5. Schedule：May 24th（Wednesday）2023

Time (Japan)	Contents (Live Streaming)	Speaker
14:00～14:05	Opening address	International Association of RRR Construction System
14:05～15:05 (1 hour)	Geosynthetic-reinforced soil structures - Developments from walls to bridges -	University of Tokyo Professor Emeritus Fumio Tatsuoka
15:05～16:05 (1 hour)	(Tentative) Design, construction, and material of RRR construction method	Railway Technical Research Institute (Japan) Dr. Susumu Nakajima
16:05～16:25	Questions&Discussion	
16:25～16:30	Closing address	International Association of RRR Construction System

6. Application form: https://forms.gle/11ETL82niJytU8DKA

   Please fill out and submit the Google Form from the link
   or the QR code above

If you have any questions or difficulties registering for the event, do not hesitate to contact the RRR International secretariat.

【Contact information】

International Association of RRR Construction System
5F 1-23-6 Yotsuya, Shinjuku-ku, Tokyo, Japan
TEL: +81-3-5368-4103　FAX: +81-3-5368-4105
Email : RRR-I@igi.co.jp
URL: https://www.rrr-sys.gr.jp/en/