

**Curriculum Vitae  2014**

**Seung Ryull Kim, Ph.D., P.E.**

**President & CEO**

**ESCO Consultant and Engineers Company Limited, Repulic of Korea www.escoeng.com**

**1.** **Name : Seung Ryull Kim**

**2. Date of Birth :   May 12, 1953**

**3. Nationality :   Korean**

**4.** **Areas of Expertise** **:** Stress-Strain and Strength of Geo-materials; Characterizations or Constitutive

 Modelling

Geotechnical Investigations and Sub-soil Characterizations

Ground Improvements

Conventional/ Mechanized Tunnelling and Underground Space Creations

Foundations, Earth Structures, Stability of Earth and Rock Slopes

Braced Excavations

**5.** **Academic Qualifications** **:** B.Sc. in Civil Engineering, Hanyang University, Seoul

M.Eng. in Geotechnical Engineering, Asian Institute of Technology, Bangkok

Dr.Eng. in Geotechnical Engineering, Asian Institute of Technology, Bangkok

**6. Professional Qualifications :** Professional Engineer (P.E.) in Soils and Foundations ( No: 93139010063)

issued by The Human Resources Development Service of Korea

APEC Engineer (ROK-C1-02-0247), APEC Engineer Coordinating Committee

**7.** **Awards :** 2013, Silver Tower, the Order of Industrial Service Merit (No-1265)

 Republic of Korea

2010, Korea Civil and Culture Grand Prize (Technology Area)

 The Korean Society of Civil Engineers (KSCE)

2006, Seoul Citizen Award (Civil Area), Seoul Metropolitan Government

2005, Industrial Service Medal (No-5285), Republic of Korea

2004, JUNGJINKI Media and Culture Award (Science and Technology Area)

 (Maeil Business Newspaper)

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| **8. Memberships of** **Professional Institutions and Societies :** | **:** Senior member, The National Academy of Engineering of Korea (NAEK)Past President, The Korean Tunnelling and Underground Space AssociationPast Vice-president, The Korean Society of Civil Engineers (KSCE)Past Vice-president, The Korean Geotechnical Society (KGS)Executive Director, The Korean Society of Geoenvironmental EngineeringLife Member, The Southeast Asian Geotechnical Society (SEAGS)Member,The International Society of Soils and Geotechnical Engineering |

**9.** **Countries of Work :** Korea, Singapore, Libya, Sudan, Indonesia

**Experience**

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**10.**  **Areas of Consultancy :** Stress-Strain and Strength Behavour of Geo-materials; characterizations or

 constitutive modelling

 Geotechnical Investigations and Sub-soil Characterizations

 Ground Improvement Design

 Conventional/ Mechanized Tunnelling and Underground Space Design

Foundations, Earth Structures, Stability of Earth and Rock Slope**s** Design

Braced Excavation Design

**11. Keynote/Invited Lectures :**-Kim, S. R., Koh K. H., and Park C. M., (2004), Experience from the

performance of ground improvement in thick marine clay deposits,

Keynote Lecture, Proceedings of the IS-Osaka2004 Japan, pp 607-621

-Kim, S. R. (2006), Technical Solutions and Case Histories for Soft

Ground Tunnelling in Urban Areas, Training Course Lecture, pp.79-116

ITA-AITES, 2006World Tunnel Congress, Seoul, Korea

-Kim, S. R. (2008), Some Experience from the Soft Ground Tunnelling in

Urban Areas, Invited Lecture, Proceedings of the Seminar on

the State-of-the-art Technology and Experience on Geotechnical Engineering

in Korea and Hong Kong, Hong Kong, pp. 71-109

-Kim, S. R. (2012), Use of Underground Space in Seoul and

its Foreseeable Future, Keynote Lecture, Proceedings of the World Tunnel

Congress 2012 (WTC2012), Bangkok, Thailand, pp. 14-34.

**12. Research Reports(Korean):** Standard Specification for Tunnelling, Ministry of Construction and

Transportation (1996)

Ground Improvement Techniques, Seoul Metropolitan Government (1996)

Ground Investigation Techniques, Seoul Metropolitan Government (1996)

Stability Assessment of the 2nd Phase of Seoul Subway,

Seoul Metropolitan Government (1996)

Waterproofing Concept for the Seoul Subway Tunnels,

Seoul Metropolitan Government (1997)

Guidelines for the Design and Construction of Waterway Tunnels, K-water (1997)

Alternative Waterproofing Method for the Incheon Subway CL1-7,

Incheon Metropolitan Government (1997)

Waterproofing Design Method for Communication Tunnels,

Korea Electricity and Communication Cooperation (1998)

Design Criteria for Tunnels, Ministry of Construction and Transportation (1999)

Impact Assessment on a Subway Tunnel Incurred by Adjacent Construction

Activities, Seoul Metro Cooperation (2000)

Reconstruction Method for the Collapsed KTX Tunnel,

Geumho Construction Company (2000)

Design Criteria for Structures (Revision), Ministry of Land and

 Maritime Affairs (2008)

**13.** **Author of Books**  **:**  **Tunnels** (Korean), Seoul Metropolitan Government (SMG)

 **Construction Technology** (Korean), Gumi Publishing Company (Co-author)

 **Theory and Practice of Geotechnical Engineering** (Korean),

Gumi Publishing Co. (Co-author)

 **Theory of Consolidation and Its Practice for Geotechnical Engineers**

(Korean) Gumi Publishing Company (Co-author)

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**14.**  **Lecture Topics for : T1-** Elasto-plastic Behaviour of Soils

**Graduate Students** **T2**- Ground Improvement Techniques **//** **T3**- Tunnelling

**15. Others : Advisor, ACECC Committee**, The Korean Society of Civil Engineers (KSCE)

**Secretary of Finance,** The 3rd CECAR, Seoul, Korea (2004)

  **16. EMPLOYMENT RECORDS**

1996~ Present Founding President & CEO, ESCO Consultant & Engineers Company, Seoul

 1994~1996 Executive Managing Director/Head of R&D Institute, Sambo Engineering, Seoul

1992~1994 General Manager, Daewoo Engineering Company, Seoul

1978~1985 Engineer~Deputy General Manager, Daewoo Engineering Company, Seoul

**SUMMARY of *Key Skills and Experience*:---------------------------------------------------------------**

**Dr. Seung Ryull Kim** obtained his Bachelor’s Degree in Civil Engineering from Hanyang University, Seoul, Korea. He then went to work at Daewoo Engineering Company, where he was assigned to the foundation design for the various plants, roads and sewerage systems, and then later for the design of subway construction works, for seven years before joining the Asian Institute of Technology(AIT) for his post-graduate studies in 1985. Here he devoted himself to the development of the constitutive relationship of soils obtaining his Master’s Degree and Ph.D. in 1987 and 1991, respectively. The constitutive relationship he had formulated for soft clay behaviour gathered significant professional recognition.

After obtaining his Ph.D. degree in geotechnical engineering, Dr. Kim worked for Daewoo Engineering Company again for two years, and he became a founding president and CEO of ESCO Consultant and Engineers Company in 1996. He has been actively working for several organizations as a technical advisor or design reviewer. He became a senior member of the National Academy of Engineering of Korea (NAEK) in 2006. He held positions as vice-president for academic affairs in both societies:

the Korean Society of Civil Engineers (KSCE) and the Korean Geotechnical Society (KGS).

Beside these, he also held many important positions in other academic societies. He is currently an advisor, as a past president for the Korean Tunnelling and Underground Space Association (KTA).

Dr. Kim has spent more than 35 years of his life after his undergraduate studies in civil engineering, especially in the design and consultancy in bored tunnelling as well as cut-and-cover tunnelling.

He was deeply involved in the subway construction of six major cities in Korea such as the Seoul subway, Busan subway, Daejeon subway and so on. Dr. Kim also devoted himself to many other tunnelling projects such as highway and railway tunnels.

His experience in tunnelling was highlighted by doing an outstanding performance from 1992 to 1994 as the head of a General Tunnelling Consultant Team for the construction of the second phase of Seoul subway, which consists of lines 5 to 8, a total of 167km in length. He also made major contributions toward enhancing tunnelling technology in Korea by giving lectures for graduate students and government officials. His publications, which are well shared with Korean tunnel engineers, reflect his zeal and enthusiasm towards tunnelling.

He had committed himself deeply into the revisions of the design criteria and specifications for tunnels published by the Ministry of Construction and Transportation. He was awarded several awards as an acknowledgement of his excellent performance from government as well as academic societies.

Dr. Kim's professional experience is not limited to tunnelling projects but expanded to many difficult

soil improvement projects such as Busan New Port Development and Masan Harbour Development Project in Korea.

17. **PROJECT INVOLVEMENTS:**

**From:** 1996 **To Date**

**Position Held: President and CEO**-Dr. Kim, the founding president and CEO of ESCO since1996,

has been leading the company quite successfully. He made many contributions to ESCO in bringing it up

to one of the renowned consulting campanies in Korea. The designation of ESCO as “Korea Brain Power”

by the Ministry of Trade, Industry and Energy in the year 2013 was a piece of his contributions.

His outstanding leadership and performance as a specialist was further recognized by the Korean

Government with ‘Industrial Service Medal’and “Silver Tower, the Order of Industrial Service Merit”.

**Description of Duties:**

Involved in many design competition projects, namely turn-key based contracts and alternative designs

for the construction of highways, railways, harbours, subways, caverns and soft ground improvements etc.

Mandates included productions, particularly, of technically sound and cost-effective solutions for subway

construction, including the 2-arch and 3-arch bored station tunnels as well as various types of shafts and

mechanized tunnelling techniques.

Produced a detail design for the construction of underground radioactive waste repositories (silos).

Participated further in diverse projects related to port development, including remediation of existing

port facilities. Research projects awarded from the government or private sectors were also carried out.

**Selected Projects:**

**(CAVERNS):**

-Underground Radioactive Waste Repositories (6 units);

the dimensions of each unit are 30m in diameter and 50m in height constructed by drill and blasting

methods at a depth of 80m~130m below the adjacent sea level

-Basic and detail design for a shallow depth buried type radioactive waste rpositories

**(GROUND IMPROVEMENT):**

-Ground improvement design for the Busan New Port Development (75m thick soft clay layer)

-Masan New Port Development

-Gwangyang Port East Complex Development

-Gwangyang Port West Entrance

-Incheon-Cheongra Industrial Complex

-Ungdong District Complex Development

-Site preparation construction and utility facilities construction for Parcel 2B-2

-Water quality restoration and construction

**(BORED TUNNELS AND CUT-AND-COVER TUNNELS):**

-Seoul Subway Lines CL701, 720, 726, 910, 911, 902, 915, 921

-Busan Subways Lines CL4, 230

-Daegu Subway Lines CL2-1

-Gyungbu High Speed Rail (KTX) CL11, 14-3

-Honam High Speed Rail CL1-2

-Suseo-Pyungtaek High Speed Rail CL9

-Great Train Express (GTX)

-Incheon Airport Rail Connection between Terminal#1 and Terminal#2

-Daejeon-Tongyoung Express Highway CL24

-Daegu-Pohang Express Highway (Dasan Tunnel)

-Donghongcheon-Yangyang Express Highway CL14 (11km long Inje Tunnel)

-Yangsan-Dongmyung National Road CL60

-Seoul 2nd Ring Road (Hwado-Yangpyung) CL3

-Belt Expressway around Busan City CL9

-etc. etc……..

**(MECHANIZED TUNNELS):**

-Bundang Line (double track) TBM shield tunnel (Han River Crossing)

-Seoul Subway Line CL921 (Basic Design)

-Seoul Subway Line CL921 (Detail Design)

-Seoul Subway Line CL726 (Detail Design)

**From:** 1993 **To:** 1995

**Position Held: Executive Managing Director/Head of Sambo Research Institute**

**Description of Duties:**

Deeply involved in design competition projects, namely turn-key based contracts and alternative designs.

Research projects awarded from the government or private sectors were also carried out.

**Selected Projects:**

-Express highway CL15 between Daejeon City and Jinju City

-Feasibility study on double track railway system between Busan City and Ulsan City

-Busan Subway CL3 (design build)

-Busan Subway CL222 (design change)

-Seohaean Express Highway CL2 (Seocheon-Gunsan)

-Express Highway between Wonju City and Gangreong City CL9

-Feasibility study on application of TBM for Seoul Subway CL720

-Daegu Subway Line 2 (Bumohdong, design build)

-Yongdong Express Highway CL9

**From:** 1992 **To:** 1994

**Position Held: Manager of Daewoo Engineering Company**

**Head of General Tunnelling Consultant (GTC) of Seoul Metropolitan Government**

**Description of Duties:**

Rejoined Daewoo Engineering Company and appointed as the Head of General Tunnelling Consultant.

The Consultant so-called as GTC supported the construction of the Second Phase (Phase II) of Seoul Subway

(Lines 5,6,7,8 constituting167km in length) by providing various types of appropriate technical solutions.

Design reviews were made and alternative solutions were addressed accordingly. On site help provided

by GTC made major contributions to the safety and cost-effectiveness of Phase II Seoul subway construction.

A large number of technical issues were investigated and the relevant technical solutions with data were

collated in a series of reports.

**Selected Projects:**

-Design and supervision for the Phase II Seoul Subway Construction (Lines 5,6,7,8; L=167km)

-Construction supervision Seoul Subway CL5-3

-Feasivility study the subsea tunnel in Incheon

**From:** 1985 **To:** 1991

**Position Held: Graduate Student-**

**Committed to graduate studies in the field of geotechnical engineering, and obtained Master’s and**

**Doctoral Degrees from the Asian Institute of Technology(AIT) in 1987 and 1991, respectively**.

-Formulated the constitutive model of geomaterials such as clay.

**From:** 1982 **To:** 1985

**Position Held: Senior Project Engineer:** Structural and Geotechnical Engineering for

the Seoul Subway Lines 3&4 in downtown area

**Description of Duties:**

Assigned for the design and supervision projects for the construction of Seoul Subway Lines 3&4,

which had been located within adverse geological conditions in densely populated downtown areas.

Geotechnical investigation and sub-ground characterization, tunnel design (mined and cut-and-cover tunnels),

instrumentation and monitoring, blasting design, costing, site supervision, and FEM or FDM analyses so on

were carried out. Actively involved in The New Austrian Tunnelling Method (NATM) which was introduced

to Korea for the first time.

**Selected Projects:**

-NATM design and supervision for the Seoul Subway Lines 3&4 (downtown area)

-Research and development project of NATM

-Han River Development Project (site grading and sewerage lines)

-Modernazation of Seoul Water Supply System

-Cable and Communication tunnels (Samsungyo)

-Seoul-Daeheon Highway (CL4)

-Iran Railway (CL6) Tunnel (Iran)

-Underground substation in Geydoing in Seoul

**From:** 1978 **To:** 1982

**Position Held: Project Engineer:** Structural Analyses, Foundation Design, Topographic Surveying

Sewer Lines and Access Roads Network Design

Development of Ship Building Yard and Housing Complex

**Description of Duties:**

Assigned for the civil engineering works for the construction of various plants and their supporting

facilities. This included planning, structural and geotechnical designs, sewer and road network designs,

bill of quantity, and costing.

Relevant calculation sheets, design reports, specifications and drawings were prepared and submitted.

**Selected Projects:**

-Ulsan Termal Power Plant Units 4,5,6

-Test road for Bupyung Automobil Factory

-Sudan Tyre Plant (Sudan)

-T-1Tank foundation (D=30m, 4 units, crude oil storage tanks

-Aozou Airport construction (Libya)

-Nalute Airport construction (Libya)

-Daewoo Ship Building Yard- dry dock, jack-up yard, access road

-Susa-Daernah Highway (Libya)

18. **LIST OF PUBLICATIONS:**

Master’s Thesis: Shear Strength of Underconsolidated Clay (1987), No. GT-86-20

 Asian Institute of Technology

Ph.D. Thesis: Stress-Strain Behaviour and Strength Characteristics of Lightly Overconsolidated

 Clays (1991), Diss. No. GT-90-2, Asian Institute of Technology

I. Towhata and Kim S. R. (1987), Shear Strength of Underconsolidated Clay, Annual Convention of

Japan Society of SMFE, pp. 421-424

I. Towhata and Kim S. R. (1988), Stability Analysis of Seabed Undergoing Rapid Deposition, Proc. of

the 43th Annual Conference of the JSCE, 3, pp.224-225

Kim S. R. (1988), Undrained Shear Strength of Clay and Stability of Submarine Slope Undergoing Rapid Deposition, Korean Society of Geotechnical Engineers, Vol.4, No. 4, pp. 5-18

I. Towhata and Kim S. R. (1990), Undrained Strength of Underconsolidated Clays and Its Application to Stability Analysis of Submarine Slopes under Rapid Sedimentation, Soils and Foundations, Vol.30 NO.1

Kim S.R., Park G.J., Park B.G. (1993), Design and Construction of Bottom Drainage Tunnel and the Watertight Tunnel, KGS Spring Geotechnical Engineering Conference, pp.49-58

A.S. Balasubramaniam, S. R. Kim and Y. Honjo (1993), Formulation of Stress-Strain Behaviour Inside the State Boundary Surface, 11th Southeast Asian Geotechnical Conference, Singapore, pp. 3-14

A.S. Balasubramaniam, S.B. Gurung, O. Kusakabe & S.R. Kim (1993), On the Plastic Volumetric Strain of Bangkok Clay, 11th Southeast Asian Geotechnical Conference, Singapore, pp. 73-78

### Kim S.R. (1993), An Evaluation of Design and Construction Technology of Seoul Subway Tunnels, KGS Seoul Symposium on Underground Space Construction Technology, PP.51-75

Kim S.R., Seah T.H., Balasubramaniam A.S. (1994), Formulation of Stress-Strain Behaviour Inside the State Boundary Surface, 13th ICSMFE, Delhi, Vol.1, PP. 51-56

Kim S.R., Ko Y.G., Ko H.B., Yang H.H. (1995), Design and Construction of Subway Station with Top-Down Method, Journal of the Korean Society of Civil Engineers(III), PP. 325-328

Kim S.R. (1995), Characteristics of Soft Ground and Representative Theory, Journal of KGS, PP.170-1

Kim S.R. (1995), Study on the Waterproof Concept of Subway Tunnel, Subway Technical Bulletin No. 90, Seoul Metropolitan

Kim, S. R., Lin, D. G., Bergado, D. T. and Balasubramaniam, A. S. (1997). Critical State Models and Their Comparison with Triaxial Behaviour of Soft Bangkok Clay, Geotechnical Engineering Journal, Vol. 28. No. 2-2, pp. 209-248

Chun B. S., Kim S. S., Kho K. H., Kim S. R., Im H. S. (1997), An Application of Lime Stabilization to Marine Clay, 14th ICSMFE, Hamburg, Vol. 3, pp. 1673-1676

Kim S. R. (1999), Some Factors Affecting the Ground Improvement Design for the Pusan New Port poject, 11th Asian Regional Conference on soil Mechanics and Geotechnical Engineering, Seoul, ATC-7 workshop, pp. 65-91

Kim S.R., Park C.M. (2001), Soil Properties of Masan Area, Journal of KGS ATC-7, PP.55-71

Balasubramaniam, A. S., Kim, S. R., and Oh, E. Y. N. (2003), Discussion

on “Numerical Interpretation of a Shape of Yield Surface Obtained From Stress Probe Tests”, By Ichizo Kobayashi, Kenichi Soga, Atsushi Izuka and Hideki Ohta. Soils and Foundations, Vol. 43, No. 3,

pp. 95-104.

Chu, J., Kim, S. R., Oh, Y. N., Balasubramaniam, A. S., and Bergado, D. T. (2004), An experimental and theoretical study on the dilatancy of sand and clays, Proceedings of the 9th Australia New Zealand Conference on Geomechanics, Auckland, New Zealand, 2, pp. 654-660

Kim, S. R., Koh, K. H., and Park C. M., (2004), Experience from the performance of ground improvement in thick marine clay deposit, Keynote Lecture, Proceedings of the IS-Osaka2004, Japan, pp 607-621

Lee, C. J., Handali, S., Kim, S. R., Lee, Y. H., Oh, E. Y. N., Bolton, M., and Balasubramaniam, A. S. (2004). New Method to Predict Pore Pressures For Settlement Calculations and Stability Analysis, Submitted to 15th Southeast Asian Geotechnical Engineering Conference, Vol.1, pp.803-808

Kim, S. R., Khan, M. R. A., Pornpong, A., Oh, E. Y. N., and Balasubramaniam A. S. (2004). Failure States For Normally and Overconsolidated Soft Bangkok Clay, Submitted to 15th Southeast Asian Geotechnical Engineering Conference,Vol.1, pp.37-42.

Kim, S. R. (2006), Technical Solutions and Case Histories for Soft Ground Tunnelling in Urban Area, Training Course Lecture, ITA-AITES World Tunnel Congress, Seoul, Korea, pp.79-116

Kim, S. R., Hwang, J. D., Park, C. M., Kwon, Y. C., Lee, H. J., Park, Y. H. (2007) Tunneling Through the Alluvial Deposit in Urban Area, Proceedings of the 13th Asian Regional Conference on Soil Mechanics and Geotechnical Engineering, Kolkata, India,Vol.1,pp.493-496

Kim, S. R.(2012), Use of Underground Space in Seoul and its Foreseeable Future, Keynote Lecture, Proceedings of the World Tunnel Congress 2012 (WTC2012), Bangkok Thailand

pp. 14-34

Kim, S.R. (2013), Utilization of Underground Space Technology and Urban Development, Invited Lecture for KGS Spring Geotechnical Engineering Conference, pp.21-32

Kim, S. R. (2015), Design and Construction Technology for the Creation of Underground Spaces in Urban Areas, Keynote Lecture, SICAT2015, Singapore

March, 2015



Seung Ryull Kim