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## **Resume**

### **Education**

10/1998-9/1999 Postdoc  
Massachusetts Institute of Technology, Cambridge, MA, USA

March 1996 PhD  
Technical University Carolo Wilhelmina, Braunschweig, Germany

April 1990 M.S., Civil Engineering (Diplom)  
Technical University Carolo Wilhelmina, Braunschweig, Germany

### **Professional Experience**

since 12/1996 Consulting Engineer and Partner  
Dr. Koelsch Geo- und Umwelttechnik GmbH, Braunschweig (D)

- Realizing monitoring projects at 20+ landfills (ordered by public agencies and private companies), consulting of landfill operators, developing environmental monitoring strategies in dialog with regional administrations
- Geotechnical design of landfills, implementing long-term safety concepts, contributing to official German technical regulations
- Developing and realizing of innovative waste concepts, design and monitoring of plants for the biological pretreatment of MSW
- Preparing a risk assessment and feasibility study for the damaged Payatas landfill, Metro Manila/Phillipines, Leuwigajah landfill, Bandung (Indonesia)

since 4/2001 Scientist and lecturer  
TU Braunschweig, Dept. Waste Management (Prof. Fricke)

- International research projects  
*Brazil: Safe landfills in tropic climate areas (DAAD-CAPES)*  
*Japan: Reutilization of old landfill sites (DFG-JSPS)*  
Initiating, coordination, budgeting, report to funding institutions, organizing of bilateral meetings, presentation to policy makers
- International development projects  
*Indonesia: Community based landfill monitoring (EU Comm.)*  
*China: CDM project -Gaobeidian MSW biotreatment plant (KfW)*  
Concept, design, analysis, implementation, consulting, funding application, report, publication
- International education projects  
*Thailand/Vietnam: postgraduate lectures(DAAD), 40 participants*

- 2-3/2003 Independent Consultant  
Asian Development Bank
- Preparation of Summary Initial Environmental Examination for the Tajikistan Social Sector Development Project  
Screening of environmental impacts, mitigation measures, developing of an environmental management plan
  - Tajikistan Urban Environmental Profile  
On site inspections of facilities (water, waste water, waste), data evaluation, collection of information in ministries, identifying of opportunities and constraints for bank activities, proposal of innovative development projects
- 6-7/2002 Visiting Scholar  
Tokyo University, Dept. Civil Engineering, Tokyo, Japan
- Initiating and realizing a research project on seismic stability of landfills regarding its reutilization (funded by Japanese Gov.)
  - Feasibility study on biological pretreatment of waste water sludge mixed with municipal solid waste, presentation to Tokyo Metropolitan Authority
- 10/1998-9/1999 Visiting Scholar  
Massachusetts Institute of Technology, Cambridge, MA, USA
- Initiating a research project on dynamical properties of biological pretreated waste and the potential use as an isolating ground material protecting against Earthquake damages (funded by Deutsche Forschungsgemeinschaft, DFG)
  - Feasibility prestudy on a biological pretreatment plant for the Bovoni landfill at St. Thomas, US Virgin Islands
  - Investigation on an innovative design of a capillary barrier as a landfill closure using recycling materials
- 5/1990 – 11/1996 Research assistant  
Technical University Braunschweig, Germany  
Dept. of waste management (Prof. Collins)  
Head of working group „geotechnique“ (10 employees)
- Bearing behaviour and mechanical properties of waste  
Managing of research project (1990-1996, funds: 600k EURO)
  - Design of monitoring systems for landfill layers
  - Investigation on the reliability and rehabilitation of drainage systems of landfills
  - Design of biological pretreatment plants for MSW
- 1983/1985 Internship  
Construction company H.Schmidt II, Bad Homburg, Germany
- 6 monthes practical work (concrete, bricklayer, carpentry)

## **Languages**

German:	Mother-tongue
English:	Fluent
Spanish:	Basic

## **References**

- Prof. Eduardo Kausel  
Massachusetts Institute of Technology  
Department of Civil and Environmental Engineering, 1-271  
Cambridge, MA, USA  
phone: +1 (617) 253-5336  
E-Mail: KAUSEL @ MIT.EDU
- Prof. Ikuo Towhata  
Tokyo University  
Tokyo, Japan  
phone: +81 (3) 5841-6121  
E-Mail: TOWATHA @ GEOT.T.U-TOKYO.AC.JP
- Richard T. Reynolds, P.E.  
Consulting Geotechnical Engineer  
Boston, MA, USA  
phone: +1 (617) 523-0873  
E-Mail: RTR @ SOFTSOIL.COM
- Prof. Klaus Fricke  
Technical University Braunschweig  
Leichtweiss-Institute for Hydraulic Engineering  
phone: +49 (531) 391-3970  
E-Mail: KLAUS.FRICKE @ TU-BS.DE
- Dr. Werner Liepach  
Asian Development Bank  
Manila, Phillipines  
phone: +63 2 632-4444  
E-Mail: WLIEPACH @ ADB.ORG

## **Memberships**

- ISWA – International Solid Waste Association
- DGGT - German Society of Geotechnics  
member of subcommittees „waste mechanics“,  
"landfill technology in developing countries"
- MIT Club of Germany
- Lower Saxony Council of Professional Engineers (Germany)
- Trading and Industry Council, Braunschweig

## Journal Publications

**Kölsch, Ziehmman (2004):** Landfill stability – risks and challenges. *Waste Management World*, issue Mai/June, ISWA, Copenhagen

**Kölsch, Reynolds (2000):** Biological pretreatment of MSW as a measure to save landfill volume and deter birds. *Journal of Solid Waste Technology and Management*.

**Kölsch, Reynolds (1999):** Birds shun pretreated waste. *WasteAge* 30, No. 10, Atlanta (USA): Intertec Publishing

## Presentations

**Bahr, Fricke, Hillebrecht, Kölsch, Reinhard (2006):** Clean Development Mechanism, waste management and methane oxidation to minimize methane emissions. In: Li Rundong, Raninger, Gehring (eds.): *Bioorganic municipal waste and landfill management*. 1<sup>st</sup> ICEEE Int. Conference, Shenyang (China)

**Kölsch, Fricke (2006):** Community based landfill monitoring. In: Gidakos, Nikolaidis, Christodoulatos et al. (eds.): *Protection and restoration of the environment VIII* (proceedings). Technical University Chania (GR)

**Kölsch, Fricke, Mahler, Damanhuri (2005):** Stability of landfills – The Bandung disaster. CISA (Hrsg.): *Proceedings of the 10th International Landfill Symposium*, Cagliari (Italy)

**Towhata, Kawano, Yonai, Kölsch (2004):** Laboratory tests on dynamic properties of municipal waste. 11<sup>th</sup> International Conference Soil Dynamics and Earthquake Engineering, Berkeley

**Kölsch (2003):** Monitoring of landfills. 18<sup>th</sup> International Conference on Solid Waste Technology and Management. Philadelphia (USA)

In total 30+ journal publications and presentations in German and English concerning stability of landfills, monitoring, waste treatment

## Special lectures

**KfW banking Group (Frankfurt, 2006):** Abfallwirtschaft in Asien. Netzwerkveranstaltung Technik.

**Asian Development Bank** (Manila, Philippines, 2006): Community based monitoring – The EU ASIA PROECO project Bandung (Indonesia), greenbag seminar for Bank staff

**Worldbank** (Washington, 2005): The Bandung dumpsite disaster - Problems of waste management and disposal in tropical countries. BBL seminar for Bank staff

**Asian Development Bank** (Manila, Philippines, 2004): Current waste management situation in selected regions in Asia (Vietnam, Thailand, Tajikistan, Philippines, Japan), greenbag seminar for Bank staff

**COMLURB** (Rio de Janeiro, Brasilien, 2004): Stability problems of landfills. Seminar for COMLURB (Companhia Municipal de Limpeza Urbana) staff

**Chulalongkorn University** (Bangkok, Thailand, 2003): Waste management and disposal. Thai/Vietnamese postgraduate class. Cooperation Vanlang University (Ho Chi Minh City, Vietnam), Chulalongkorn University (Bangkok, Thailand), Bauhaus University Weimar (Germany), funded by German Academic Exchange Service (DAAD)

## Project references (selected)

date	title	client	supervisor
2006-2008	Community based landfill monitoring EU ASIA PROECO project Bandung (Indonesia)	EU Commission	Prof. K. Fricke Technical University Braunschweig Klaus.Fricke@tu-bs.de +49.531.3913970
2006	Gaobeidian biotreatment plant for MSW as a CDM measure (in preparation) co-financed by: KfW (Kreditanstalt für Wiederaufbau) Gaobeidian (Hebei Province, China)	AWN China	Prof. K. Fricke Technical University Braunschweig Klaus.Fricke@tu-bs.de +49.531.3913970
2005	Forensic analysis of Leuwigajah dumpsite failure, Bandung/Indonesia	TU Braunschweig City of Bandung Institut Teknologi Bandung	Prof. E. Damanhuri Institut Teknologi Bandung e.damanhuri@bdg.centrin.net.id +62.81.22330684
2004	Stability analysis Gramachu landfill, Rio de Janeiro R&D project: Safe landfills in tropic climate areas financed by DAAD-CAPES	COMLURB (Companhia Municipal de Limpeza Urbana)	Mr. Penido COMLURB jpenido@web-resol.org +55.21.22654332
2004	Design for closure of landfill Stedum (Peine, Germany)	AWB Peine	Mr. Oehler AWB Peine oehler@awb-peine.de +49.5171.709736
2003	Stability analysis for the Warburg landfill Design of simple landfill cap on the steep NW-slope	LK Höxter	Mr. Gorzolka LK Höxter h-w.gorzolka@kreis-hoexter.de +49.5271.965474
2003	Tajikistan Urban Environmental Profile task: waste disposal Feasibility study about the improvement of operation at the Dushanbe dumpsite	Asian Development Bank	Mr. S. Popov Asian Development Bank spopov@adb.org +63.2.6326187
2000	Forensic analysis of Payatas dumpsite failure, Manila/Philippines	Asian Development Bank	Mr. S. Popov Asian Development Bank spopov@adb.org +63.2.6326187