THE MASTERWORKS OF GEOTECHNICAL ENGINEERING



www.MidasUser.com

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MIDAS Project Applications

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MIDAS IT always strives for constant growth and progress with midas users who have made us a trusted leader in technology.

This project application book was published by MIDAS IT, but what MIDAS IT did was just collecting the masterworks of midas users. This book is dedicated to the midas users without whom it would not exist.

MIDAS IT will keep providing the world with utilitarian values that support human pursuit of happiness with our creative technology.

MIDAS Power Users



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Bosphorus Third Bridge

Istanbul, Turkey



Owner General Contractor Engineering Consultant Construction Period Type of Project Size of Structure Republic of Turkey Hyundai E&C / SK E&C Lombardi 2013 - 2015 Bridge Foundation 1.4km Main Span, 2.2km Total Length





07

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Main features used in this application

- Anchor block and ground approach of the cable stayed bridge
- Interface elements between shaft and soil

Description on this project

The Bosphorus Third Bridge is a part of the 260km long Northern Marmara Motorway. The bridge, which is 2.2km long with a main span of 1.4km, links Europe to Asia, north of Istanbul. With its width of 59m, this is the first bridge of the world that accommodates an 8-lane highway and a 2-lane railway at the same level.

			C. C
Lombardi			
Address	Via Giotto 36IT - 20145 Milar	no, Italy	
Introduction	In 1955, Dr. Giovanni Lombardi founded his consulting company for engineering services, cornerstone of the Lombardi Group. Today, the company cares for the life cycle of transport infrastructures and hydraulic works from the initial design phases to their operation.		
Website	www.lombardi.ch	Email	milano@lombardi.group





Buhang Dam

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Gimcheon, Korea

Owner

Engineering Consultant Construction Period Type of Project Size of Structure Korea Water Resources Corporation GS E&C 2006 - 2014 Concrete / Flood - Control Dam 472m Length, 75m Height



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Main features used in this application

• Evaluate the deformation and member force of cut - off wall due to water pressure

• Deformation and stress distribution with constitutive models

Description on this project

Buhang Dam is located in Gimcheon City, Gyeongsangbukdo, South Korea. After typhoon Rusa passed, a dam was deemed to be necessary to prevent flood damage. It is expected to contribute to the development of local communities through the supply of river maintenance water for dams and minimization of flood damage in the Gamcheon coastal area around Gimcheon City. It will also supply drinking water and agricultural water in Gwangcheon and Gumi.

GS E&C	
Address	GRAN SEOUL, 33 Jong-ro, Jongno-gu, Seoul, Korea
Introduction	GS E&C has established its status as a top - ranking company domestically since its foundation in 1969 by achieving tremendous growth in the fields of architecture, civil engineering, housing, plant, environment and power plant.
Website	www.gsenc.com





Hangzhou a Block of Commercial -Financial Space Foundation Pit Works



Hangzhou, China

Engineering Consultant Type of Project Size of Structure Hangzhou Survey and Design Institute Foundation 20m Height, 26,000m² Area

Main features used in this application

• 3D FEM analysis of the impact of excavation on the subway station and tunnel

Description on this project

The excavation area is about 26,000m² and a depth of 20.2m. The pile is constructed by using the bored piles. The excavation pit is surrounded by a building complex and the Metro Line 2 Qingchun Road Station. Analysis was required to verify the excavation will not affect adjacent structures.

Hangzhou Survey and Design Institute

Address	China's Hangzhou City, Zhejiang Pro
Introduction	Hangzhou Survey and Design Insti Survey Certificate" and Class A "mo Ministry of Construction and State I Hangzhou Survey and Design Instit subway, a large number of high-rise
Website	www.hkance.com

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ovince, Wulin Gate Village on the 13th, China

titute was built in 1984. Class A "Engineering apping qualification certificate" were issued by Bureau of Surveying and Mapping respectively. tute actively participate in urban construction, e buildings and geotechnical engineering design.

Email

Hkance@mail.hz.zj.cn



Busan Subway Line 3 Tunnel



Busan. Korea

Owner Engineering Consultant Construction Period Type of Project Size of Structure

Description on this project

Busan Metro ORUM Completed in 2005 Subway Tunnel 18.1km Total Length

Main features used in this application

support capacity for the fan plant structure

👔 🐺 💽 • Performing construction stage analysis to check the settlement while checking the initial



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Posiva's Onkalo



Euraioki. Finland

General Contractor Engineering Consultant Construction Period Type of Project Size of Structure

Posiva Under Construction Nuclear Waste Disposal Facility 455m Depth

Main features used in this application

- Stability of hard rock excavations in depth up to 500m and to optimize rock support system
- Impact of vibration due to blasting and groundwater level on underground cavern

Description on this project

The Onkalo Spent Nuclear Fuel Repository is a deep tunnel system for the final disposal of spent nuclear fuel. It is first of such repository in the world. It is currently under construction at the Olkiluoto Nuclear Power Plant in the municipality of Eurajoki, on the west coast of Finland, by the company Posiva. It is based on the KBS - 3 method of nuclear waste burial developed in Sweden by Svensk Karnbranslehantering AB (SKB).

Posiva	
Address	Posiva Oy, Olkiluoto, FI - 27160 Eurajo
Introduction	Posiva aims for safe, on-time and a nuclear fuel, working according to other stakeholders. Posiva commits and quality of its operations, as w of the society in full compliance wit operational safety is carried out in c
Website	www.posiva.fi

ORUM Address 201, 8th Orum Building, Geoje1-dong, 1493-6 beon-gi, Yonje-gu, Busan, Korea Orum creates economical and stable structures finding the most proper methods Introduction with fluent experiences in the field. The firm is specialized in Civil analysis and drawing, geotechnical investigation, and instrumentation. Website www.orumeng.com

Two types of analysis were performed based on different 3D model files. The full underground

structure was modeled to monitor the initial support capacity including rock bolts and

shotcrete, at structural level. A construction sequences analysis of the fan plant was ran to

obtain the general stability and settlements of the soil layers, at geotechnical level.



Kalliorakennus Oy, SK-Kaivin Oy and Destia Oy



oki, Finland

economically feasible final disposal of spent the demands of the company's owners and s to the continuous improvement of the safety well as to the fulfilment of the reauirements ith laws and regulations. The management of holistic and systematic manner.



ARC: Trans-Hudson Express Dyer Avenue Fan Plant



New York, USA

Engineering Consultant Type of Project

WSP | Parsons Brinckerhoff Fan Plant



Main features used in this application

A 1

• Performing construction stage analysis to check the settlement while checking the initial support capacity for the fan plant structure

Description on this project

Two types of analysis were performed based on different 3D model files. The full underground structure was modeled to monitor the initial support capacity including rock bolts and shotcrete, at structural level. A construction sequences analysis of the fan plant was ran to obtain the general stability and settlements of the soil layers, at geotechnical level.



WSP | Parsons Brinckerhoff

2202 N West Shore Blvd. Suite 300. Tampa, Florida 33607. USA Address

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Website www.wsp-pb.com



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General Contractor THE Partnership JV **Engineering Consultant** ILF Consulting Engineers **Construction Period** 2009 - 2010 Type of Project

Rail Tunnel • Palisades Tunnels (1.6km Length)

- Hudson River Tunnels (2.3km Length)
- Manhattan Tunnels (2km Length)
- Station Cavern (29m Wide, 27m Height)

Main features used in this application

- Construction sequences of the subway complex
- Stability of lining structures and rock bolts

Description on this project

New York. USA

Size of Structure

Owner

- NYPSE Caverns and Ancillary Tunnels
- Evaluated geotechnical ground properties, geotechnical/geological models developed
- Defined excavation stages/sequences
- Designed initial ground support
- Predicted surface settlements
- Provided overbuild criteria to specify magnitude, distribution and location of loading due to future overbuild along both sides of 34th Street

ILF Consulting Engineers

Address	11710 Plaza America Drive Suite 2000
Introduction	ILF draws on its 50 years of exper design services required for the impl Every project is unique and has re and country. Successful design and engineering and design process.
Website	www.ilf.com



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Trans - Hudson Express

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NJ Transit and Port Authority of New York and New Jersey



Reston, VA 20190, USA

rience to provide all of the engineering and plementation of projects in its business areas. equirements specific to the client, business, nd planning comes through a well prepared

Email

info.usa@ilf.com





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