



**HOCHTIEF**

# HOCHTIEF Group

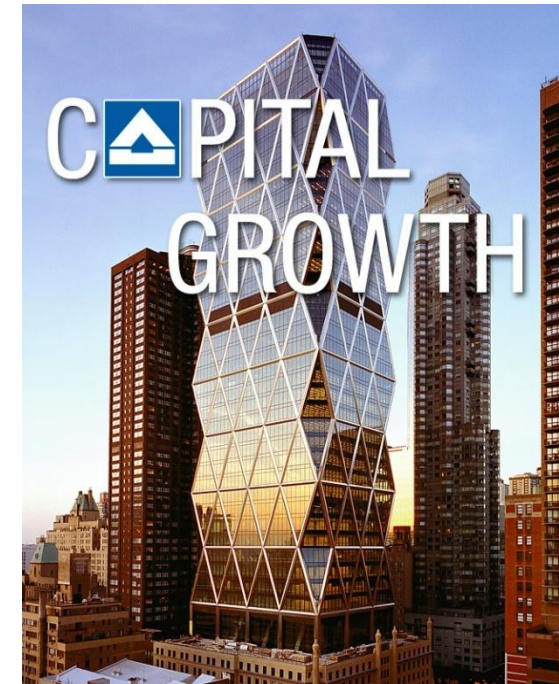
Presentation of the company HOCHTIEF

# The HOCHTIEF Group

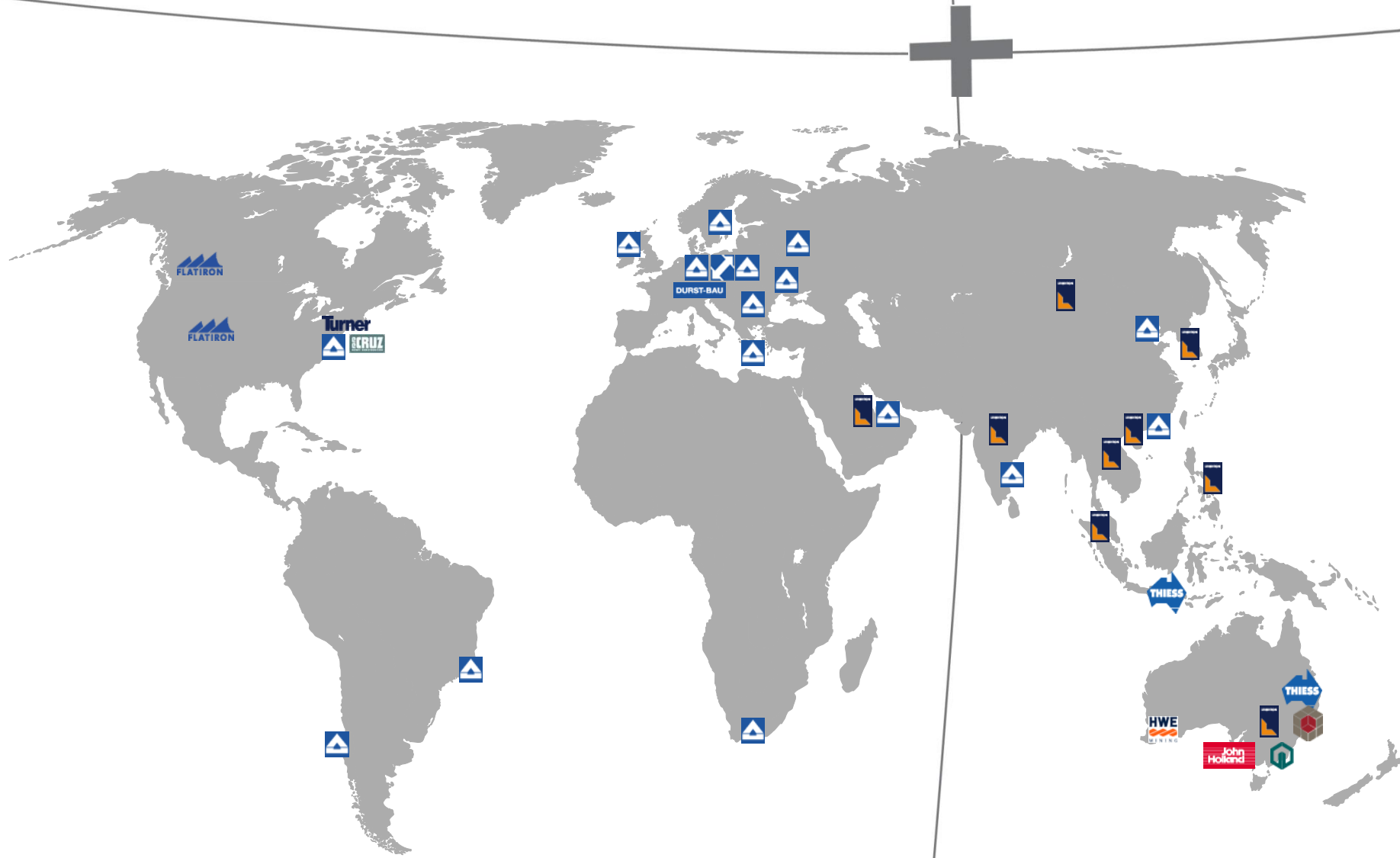
## Who we are



- Founded in 1873
- Seventh-largest and most international construction services provider in the world
- 66,000 employees worldwide
- Represented in all the world's major markets
- Integrated portfolio:  
Development, construction, services, concessions and operation
- Service offering covers the entire life cycle of infrastructure projects, real estate and facilities



The HOCHTIEF Group  
is present in world's every major market



Forum of Nuclear Industry Suppliers  
ATOMEX – Europe 25–26 October 2011





### HOCHTIEF Corporate Headquarters



<p><b>HOCHTIEF Americas</b></p>	<p><b>HOCHTIEF Asia Pacific</b></p>	<p><b>HOCHTIEF Concessions</b></p>	<p><b>HOCHTIEF Europe</b></p>
<p><b>Turner</b> <b>Flatiron</b> <b>E. E. Cruz</b></p>	<p><b>Leighton Holdings</b></p>	<p><b>HOCHTIEF AirPort</b> <b>HOCHTIEF PPP Solutions</b></p>	<p><b>HOCHTIEF Solutions AG</b></p> <ul style="list-style-type: none"> <li>• Service Solutions</li> <li>• Real Estate Solutions</li> <li>• International Project Solutions</li> <li>• HOCHTIEF CZ a. s.</li> <li>• HOCHTIEF Russia</li> <li>• Energy and Infrastructure Solutions</li> <li>• HOCHTIEF Energy Europe</li> <li>• Classic Solutions</li> <li>• Engineering Solutions</li> <li>• HOCHTIEF Consult</li> </ul>

A collage of four images representing different construction sectors: a curved modern building, a tall glass skyscraper, a stadium at night, and a large-scale construction site with workers.

# REFERENCE PROJECTS from each market sector



## Reference projects – industrial sector



**Store for burnt-out nuclear fuel, Dukovany,  
Czech Republic**



**New power resource 660Mw in Ledvice power  
plant, Czech Republic**



**Complex for long-term storage of nuclear submarine reactors,  
Murmansk, Russia**

## Reference projects – infrastructure sector



**International Airport Vladivostok, Russia**



**Great Belt East Bridge, Denmark**



**Underground IV.C2 Střížkov, Prague,  
Czech Republic**



## Reference projects – office sector



**Kavčí Hory Office Park, Prague,  
Czech Republic**



**Office complex Trianon, Prague,  
Czech Republic**

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**Commerzbank tower, Frankfurt/Main, Germany**



## Reference projects – residential sector



**Twarda 2/4, apartments  
in Warsaw, Poland (under construction)**



**Blue Heaven, Frankfurt,  
Germany**



**Multifunction building Prosek Point, Prague,  
Czech Republic**



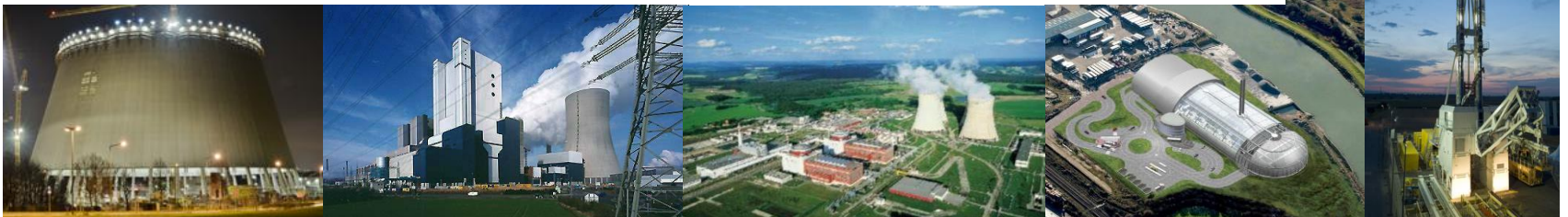
**HOCHTIEF Solutions AG**  
**Our competence in**  
**construction of**  
**NUCLEAR POWER PLANTS**





HOCHTIEF Solutions AG is an efficient Partner, attending and supporting you worldwide during all phases of construction – beginning with the pre- and detailed design over preparation of cost and time schedules, as well as financing and contract concepts up to and including turn key construction.

The Business Unit Energy Europe is the Competence Centre for all types of Power Plants in Germany and abroad within HOCHTIEF Solutions AG.



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## Our Competences:

- Nuclear Plants: Construction, Maintenance and Dismantling
- Waste-to-Energy Plants
- Thermal Power Plants
- Cooling Towers
- Chimneys
- Combined Cycle Gas Power Plants



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## The Competence Centre for Power Plants

### Employees with Energy Europe

- **177** in total
  - Management: **2**
  - Technical/administrative staff: **64** (of which: 1 Contract Manager, 6 Project Managers, 22 Civil Engineers, 20 Site Managers, 7 General Foremen, 8 Foremen)
  - Planners: **2**
  - Craftsmen: **91**
  - Commercial staff: **18**

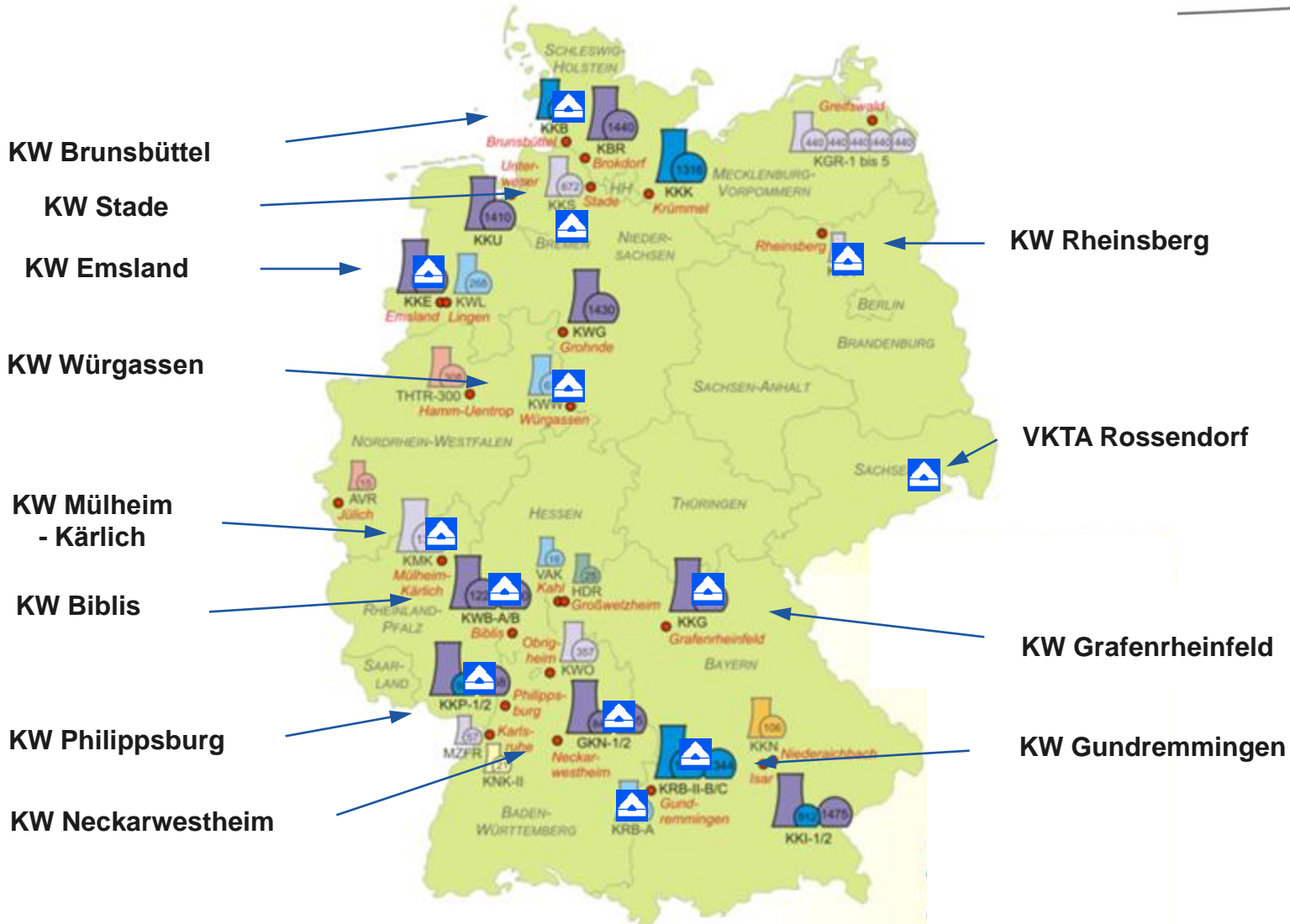
### Current Projects

- HKW Walsum
- EBS Frankfurt
- ERF Newhaven (UK)
- NPP Biblis maintenance and retrofitting
- Dismantling Bioshield NPP Stade
- Dismantling Bioshield NPP Würgassen



# Nuclear plants

with activities (dismantling and construction)  
by HOCHTIEF



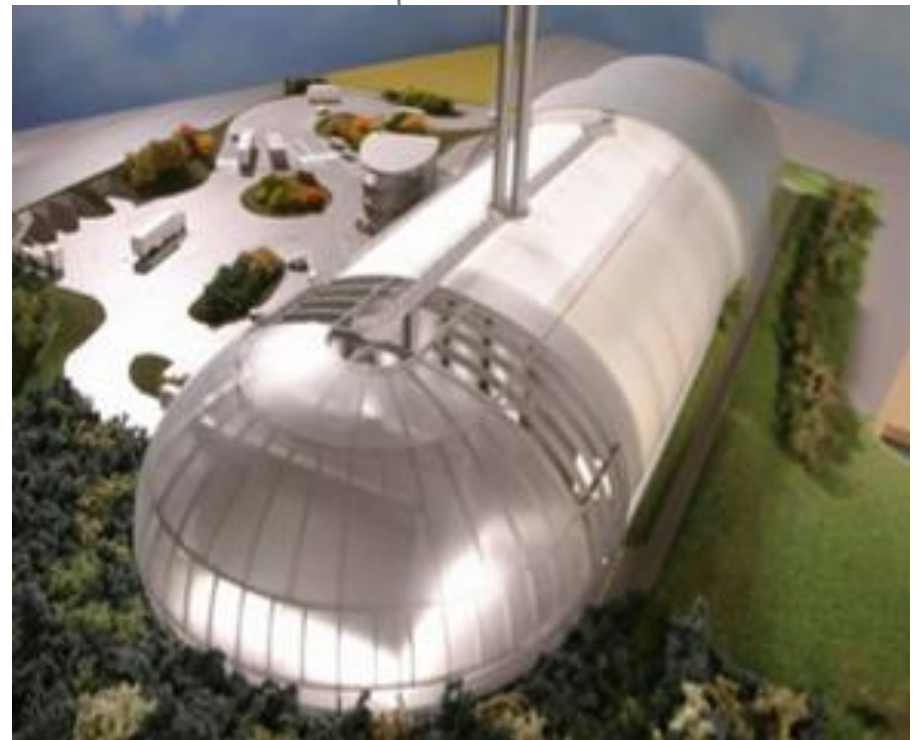


# Waste-to-Energy Power Plant - Newhaven (UK)

## Scope of works:

- Permission Planning
- Detailed design
- Structural works
- Finishing works
- Building Services

<b>Client:</b>	Veolia Environmental Services		
<b>Duration:</b>	2008 - 2011		
<b>Value:</b>	64 Mio. EUR		
<b>Execution:</b>	Consortium with leader HOCHTIEF Energy Europe		
<b>Main Civil Works:</b>	Excavation:	74.000 m <sup>3</sup>	
	Concrete:	32.400 m <sup>3</sup>	
	Formwork:	48.500 m <sup>2</sup>	
	Reinforcement:	2.850 t	
	Structural Steel:	700 t	



# Black coal power plant – Walsum unit 10

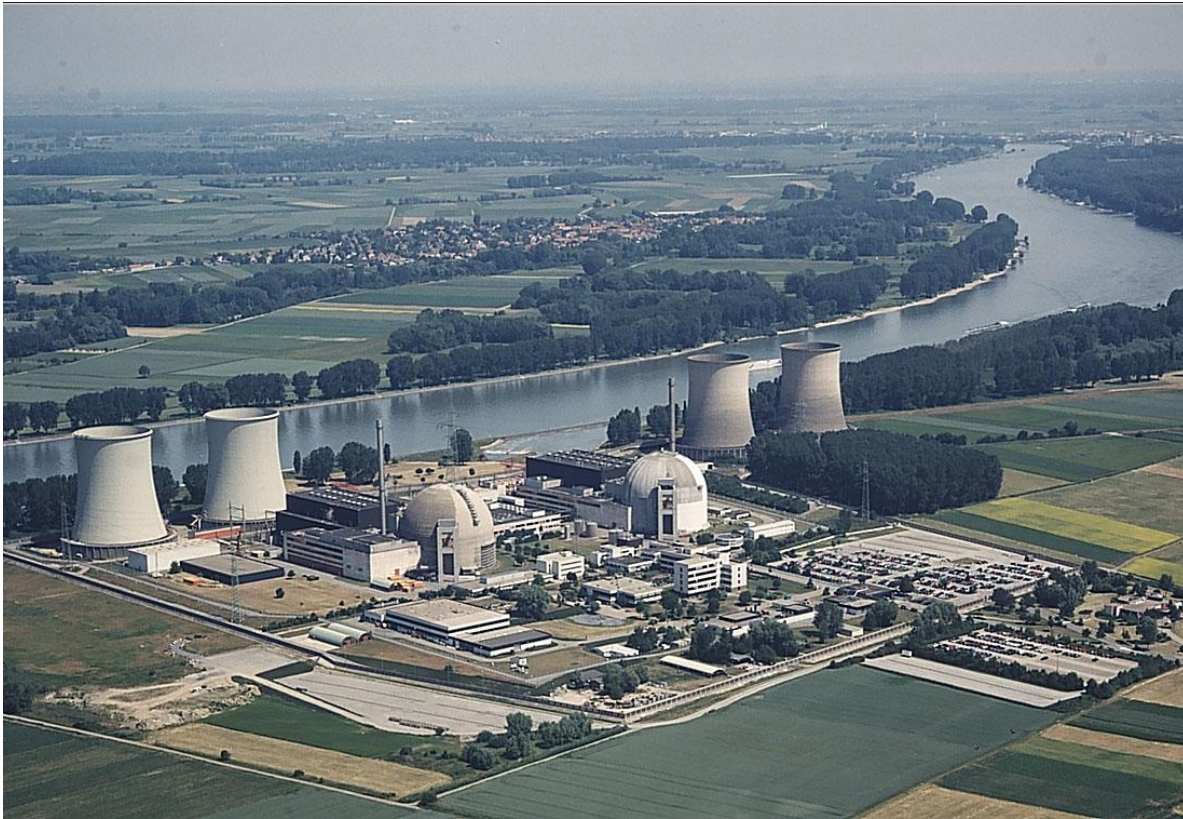
## Buildings:

- Boiler house
- Turbine building
- Switchgear buildings
- Flue Gas Treatment Area
- Pump house
- Storage buildings
- Cooling Tower
- Cooling water pipes



<b>Client:</b>	Evonik Hitachi Power Europe
<b>Duration:</b>	2007 - 2010
<b>Value:</b>	100 Mio. EUR
<b>Execution:</b>	Energy Europe
<b>Main Civil Works:</b>	Concrete: 85.000 m <sup>3</sup> Formwork: 260.000 m <sup>2</sup> Reinforcement: 12.500 t

# Nuclear Power Plant Biblis(Germany)



Name: Block A (KWB A)  
Output (MW): 1.145  
Construction: 1970 – 72  
In Operation: 25.04.1975  
(15.02.1975)

Name: Block B (KWB B)  
Output (MW): 1.240  
Construction: 1972 – 74  
In Operation: 06.04.1976  
(15.01.1977)



# Nuclear Power Plant Olkiluoto 3 (Finland)



Name: Olkiluoto 3  
Output (MW): 1.600  
Construction: 2005 – 08

# Nuclear Power Plant Atucha(Argentina)



Name: Atucha 1  
Output (MW): 319  
Construction: 1969 – 71  
In Operation: 17.03.1974  
(15.07.1974)

Name: Atucha 2  
Output (MW): 692  
Construction: 1981 - 85  
In Operation: 15.05.2002  
(15.12.2002)



# Nuclear Power Plant Temelín (Czech Republic)



Name: Block 1  
Output (MW): 1000  
Construction: 1986 – 2000  
In Operation: 21.12.2000

Name: Block 2  
Output (MW): 1000  
Construction: 1986 - 2000  
In Operation: 01.02.2002



# Nuclear power plants I

designed or / and constructed by HOCHTIEF

Name	Location	Net el. Output [MW]	reactor type	Main plant company	planning and implementation of the unit	Main work period, Unit
OL 3	Olkiluoto	1.600	EPR	Areva NP	Consulting and cooperation for quality control	2004/2009
FRM II	Garching		neutron source	Siemens KWU	Consortium with the participation of HOCHTIEF	1996/1999
NPP GKN 2	Neckarwestheim	1.225	Pressurised water reactor	KWU	Consortium under overall control of HOCHTIEF	1983/1986
NPP KKI 2	OHU (Isar)	1.285	Pressurised water reactor	KWU	Consortium with the participation of HOCHTIEF	1982/1985
NPP Angra 2/3	Angra dos Reis	2x 1.245	Pressurised water reactor	NUCON / Nuclen	Consultation for execution of work and planning HOCHTIEF	1978/1990
NPP KKP 2	Philippsburg	1.268	Pressurised water reactor	KWU	Consortium under overall control of HOCHTIEF	1977/1980
NPP KRB B/C	Gundremmingen	2x 1.245	Boiling water reactor	KWU	HOCHTIEF	1976/1981

# Nuclear power plants II

designed or / and constructed by HOCHTIEF

Name	Location	Net el. Output [MW]	reactor type	Main plant company	planning and implementation of the unit	Main work period, Unit
NPP Iran 1/2	Bushar	2x 1.196	Pressurised water reactor	KWU	Consortium under overall control of HOCHTIEF	1975/1979
NPP KKK	Krümmel	1.260	Boiling water reactor	KWU	Consortium under overall control of HOCHTIEF	1974/1979
NPP Mülheim-Kärlich	Mülheim-Kärlich	1.223	Pressurised water reactor	BBC / BBR	Consortium under overall control of HOCHTIEF	1975/1985
NPP Biblis A/B	Biblis	1.145 1.240	Pressurised water reactor	KWU	Consortium with the participation of HOCHTIEF	1970/1974
NPP KKP 1	Philippsburg	864	Boiling water reactor	KWU	Consortium under overall control of HOCHTIEF	1970/1973
NPP KKW	Würgassen	640	Boiling water reactor	KWU	Consortium under overall control of HOCHTIEF	1968/1971
NPP Atucha 1	Atucha (Argentina)	319	Boiling water reactor	KWU	Consortium with the participation of HOCHTIEF	1969/1971

**and so on ...**



**HOCHTIEF**

**HOCHTIEF SOLUTIONS AG**  
**Our design competence in**  
**Nuclear Power Plants**

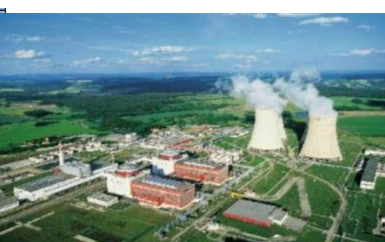


## Civil Engineering Power Plants Special Projects

- Power Plants  
(nuclear PPs and conventional PPs)
- Industrial Buildings  
(e.g.: steel mills, waste incinerating plants)
- Special Projects  
(e.g. building dynamics, membrane structures)



- 170 CAD – Workstations
- CAD Software
  - AutoCAD, Nemetschek Allplan, Revit Structure, GCB steel 3D
- Software for structural calculation
  - Sofistik, SAP 2000, Ansys, MB MicroFE, R-Stab
- IKS Homepage
- Digital archive by work flow data bank servers
- Document management software: eplass, build online
- Own software solutions in all major software codes
- Repro centre in-house



## Knowledge of and Experience with National and International Codes and Standards

### Conventional Building Regulations

Experience in use of and in many cases members of committee

- **German** - DIN (German)
- **International** – EuroCodes (EU) ACI and UBC (USA), BS (GB), SNiP (Russian), NEAK (Greece), NEN (Netherlands)

### Nuclear and Energy Regulations

Experience in use of and in many cases members of committee

- **German** – KTA, DIN, VDI, VGB and further regulations
- **International** – NA (IAEA), SRD, Predecessor from TAG from NII
- **Client** – Plant Related Specifications and Regulations







**Confirmation on quality assurance according to nuclear standard KTA 1401**

On behalf of the German nuclear power plant operators, **RWE Power AG** as a partner of the VGB PowerTech e.V. working group Assessment of Contractors confirms

**Hochtief Consult IKS Energy**  
Lyoner Str. 25, 60528 Frankfurt/Main

true for the site  
**60528 Frankfurt/Main**  
and the scope of supply and services

**for planning of structures and building components as well as decommissioning for nuclear power plants**

the qualification for system- and product related quality assurance.  
The assessment was performed on 09.11.2006 by order of **AREVA NP GmbH**


based on the standard **KTA 1401** as well as on the assessment documents of the VGB PowerTech e.V. working group Assessment of Contractors in consideration of product related requirements.

Details of the assessment are given in the report **SGE/2006/de/0044**.

This confirmation is valid until **November 8, 2009** provided that the conditions on which the assessment was based have not been changed.

Essen, 12.12.2006

**RWE Power AG**



**CERTIFICATE**

**DQS GmbH**  
Deutsche Gesellschaft zur Zertifizierung von Managementsystemen  
herby certifies that the company

**HOCHTIEF Consult IKS Energy**  
Lyoner Straße 25  
60528 Frankfurt  
Germany

for the scope

Technical advice, Design, Design Management and process management of all kinds of construction projects

has implemented and maintains a **Quality Management System**.

An audit, documented in a report, has verified that this quality management system fulfils the requirements of the following standard:

**ISO 9001:2008**  
November 2008 edition.

This certificate is valid until: 2012-01-18  
Certificate Registration No.: 001590 QM08  
Except from Certificate Registration No.: 006262 QM08  
Frankfurt am Main: 2008-01-18

**IGNet**




**IGNet**  
THE INTERNATIONAL CERTIFICATION NETWORK  
**CERTIFICATE**

**IGNet and DQS GmbH** Deutsche Gesellschaft zur Zertifizierung von Managementsystemen hereby certify that the company

**HOCHTIEF Consult IKS Energy**  
Lyoner Straße 25  
60528 Frankfurt  
Germany

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Technical advice, Design, Design Management and process management of all kinds of construction projects

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**ISO 9001:2008**  
This certificate is valid until: 2012-01-18  
Frankfurt am Main: 2008-01-18  
Registration Number: DE-001596 QM08

**IGNet**




**Certificate**

This is to confirm that **HOCHTIEF Construction AG HOCHTIEF Consult - IKS Energy**  
Lyoner Straße 25  
60528 Frankfurt am Main

having satisfied the criteria of a QA system survey performed on the basis of

**Standard KTA 1401, IAEA 50-C-Q, and FRA/N/100/OL3**

fulfills the conditions

**for planning of structures and building components as well as decommissioning for nuclear power plants.**

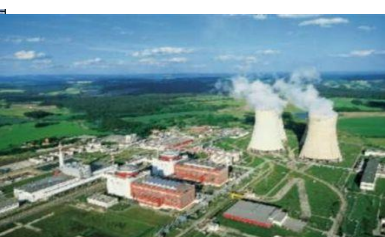
The certificate is valid until  
**November 8, 2009**

provided that the conditions underlying the evaluation have not changed.  
Evaluation details are given in Report SGE/2006/de/0044

**AREVA NP GmbH**  
Erlangen, November 10, 2006

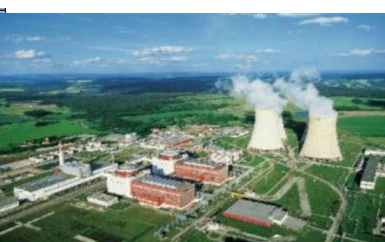


**AREVA NP**  
the AREVA and Generics company

## 50 years of worldwide experience in NPP – design

- Containment Design
- APC Analysis
- Aging Management
- Dismantling
- Pressure Waves
- Internal Accidents
- Interface - Approvals: Nuclear / Conventional
- Interface - Design: Process / Construction
- Physical Protection Design
- Design Specifications
- Soil – Structure Interaction
- Seismic Design
- Materials Characteristics
- Structural and Joint Concepts
- Development of Standard Details
- International Codes and Standards
- Civil Design
- Lightning and Earthing Protection
- Fire and Escape Routing Engineering



## Civil Engineering for Power Plants and Special Projects

### Employees with Consult

about 130 in total

Senior Design Managers, Design Managers, Architects, Structural Designers, Experts for Seismic and Dynamic Engineering, Design Engineers, Draftsmen, IT Specialists, Project Controllers, Document Coordinators / Secretary

About 200 additional appropriate workforce within HOCHTIEF Consult for design and engineering

### Current Projects – Design and Engineering Services by Consult

Maintenance and Retrofitting at nearly all NPPs in Germany

Newbuild NPPs: OL3 / Finland, Angra 3 / Brazil, Thaishan / China

Several nuclear facilities: e.g. interim storage facilities

Coal-fired double block PP Westfalen / Germany

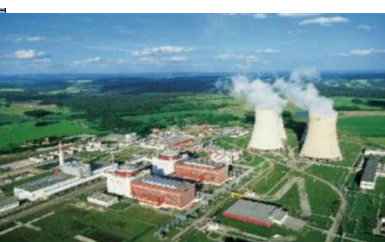
Coal-fired double block PP Eemshaven / Netherlands

Boiler house PP RDK 8 Karlsruhe / Germany

Aluminium rolling mill Dingsheng / China

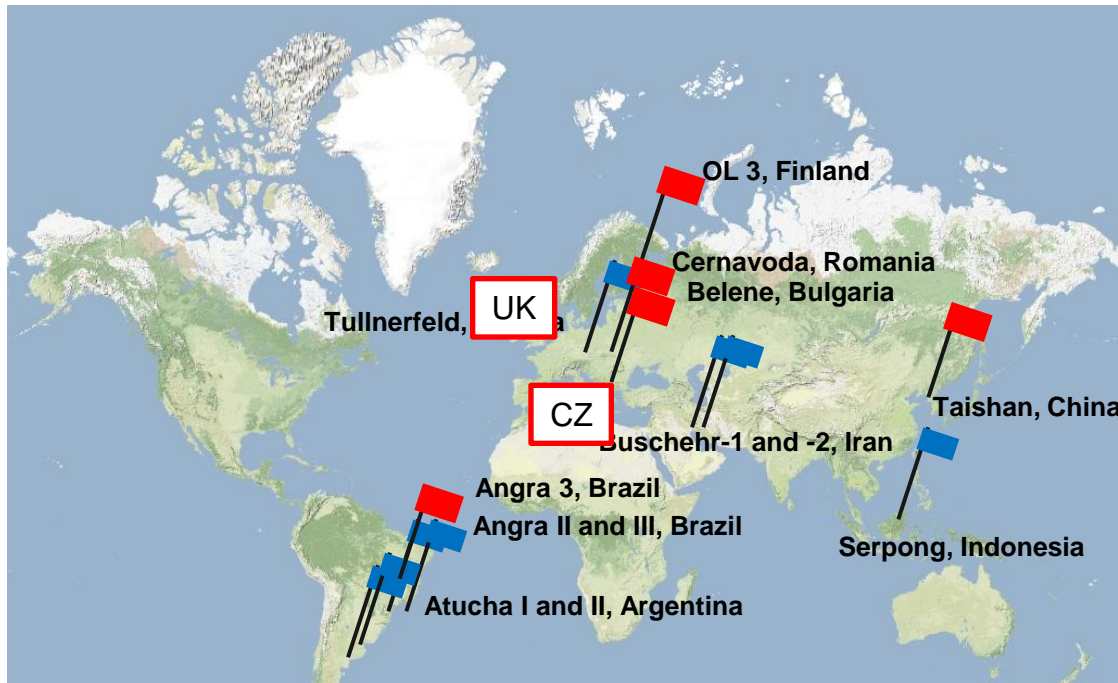
Architectural town planning conceptual design / preliminary design Dali / China

Steel Mill ESSPN / Venezuela





# HOCHTIEF Consult: Design Experience in NPPs worldwide



**Today's Projects:**  
Design / consultancy  
services by IKS  
Energy.

**Former Projects:**  
Design by or with  
contribution of IKS  
Energy.

# HOCHTIEF Consult: Capability to Manage Large Design Projects



## PP Eemshaven – RWE Convoy

Anthracite PP with 2 Blocks with 900 MW each

### Principal

RWE Power AG

### EPC Manager

RWE Power AG

### Services

structural design for rc- and steel structures, seismic design for about 115 buildings



# HOCHTIEF Consult: Capability to Manage Large Design Projects



**Shuaibah IWPP III in Saudi-Arabia**  
Oil-fired power plant for a desalination facility of seawater

**Principal**  
Shuaibah Water and Electricity Company, Riad

**General Contractor**  
Siemens Power Generation  
Doosan Heavy Industries

**Client**  
Siemens Power Generation

**Services**  
architectural design, structural design for about 100 buildings







## **EfW Newhaven** Energy Recovery Facility

### **Services**

- Design (architecture, structure, civil)
- 3D-Modelling (clash detection)
- 3D-quantity take off / 4D-time scheduling
- Value Engineering

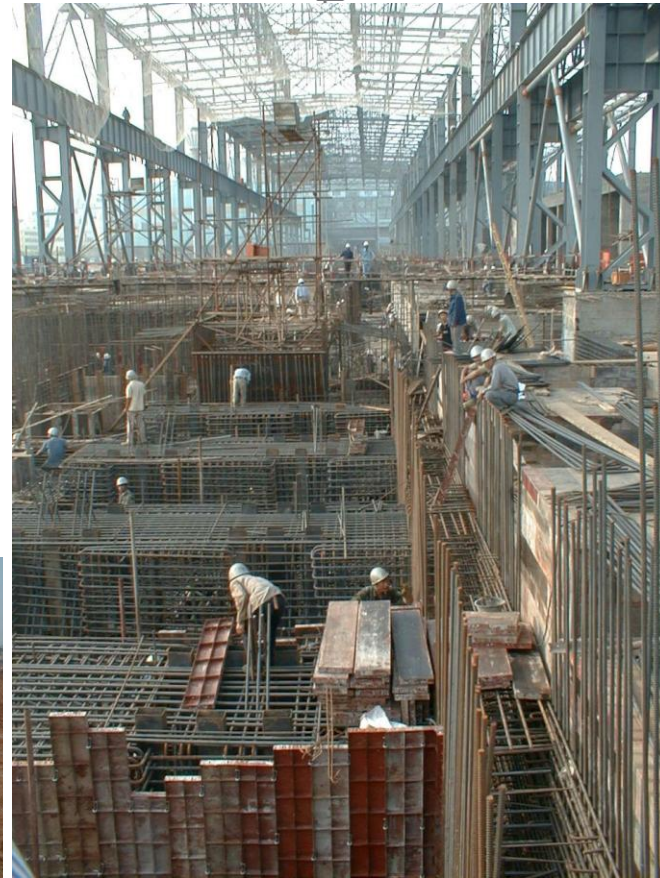




## Wuhan Hot Strip Mill

### Services

- Consulting
- Structural design
- Value Engineering



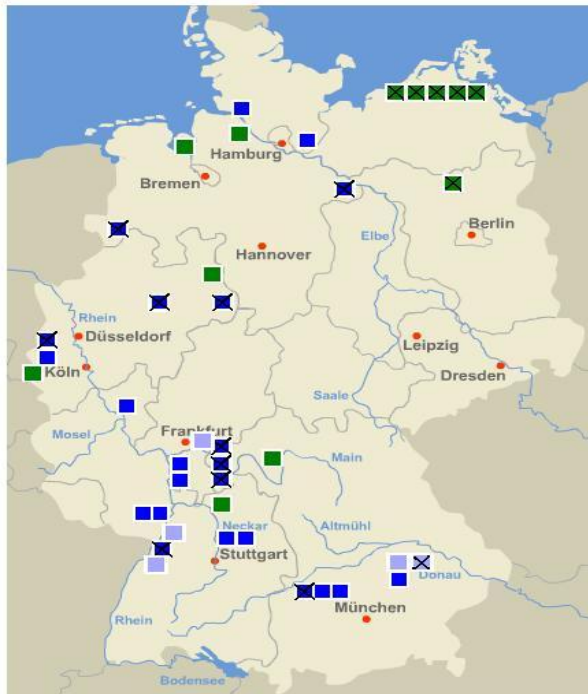
## Maintenance and Retrofitting of NPPs in Germany

Biblis, Brokdorf, Brunsbüttel, Emsland, Grafenrheinfeld, Grohnde, Gundremmingen, Isar, Krümmel, Neckarwestheim, Philippsburg, Unterweser





# HOCHTIEF Consult: Design Experience in NPPs in Germany



- Design by or lead-managed by IKS
- Design with contribution of IKS
- ⊗ Design with contribution of IKS
- Design by others

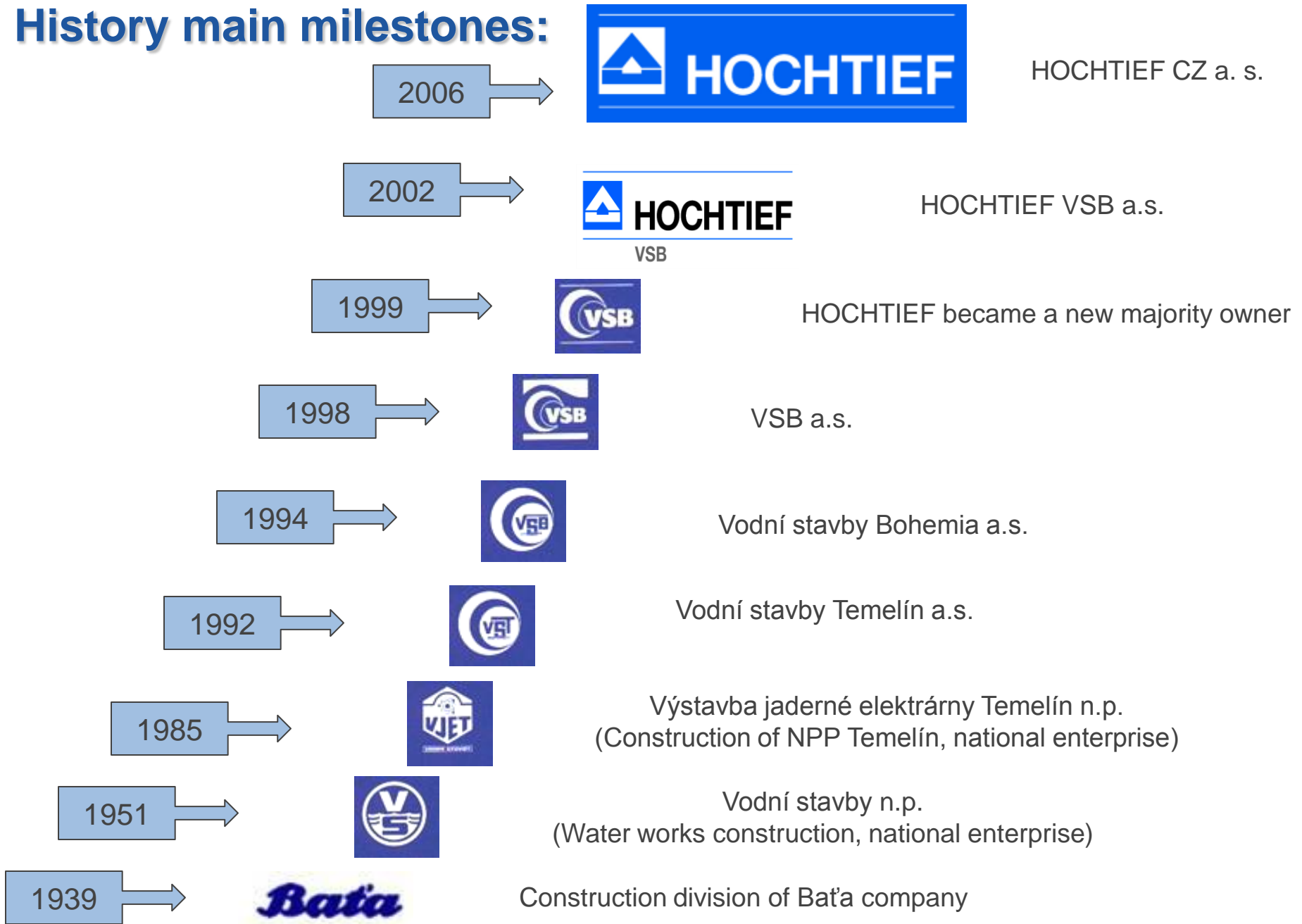
**Today:  
At nearly all locations consulting and  
design by IKS Energy!**



# HOCHTIEF CZ a. s.

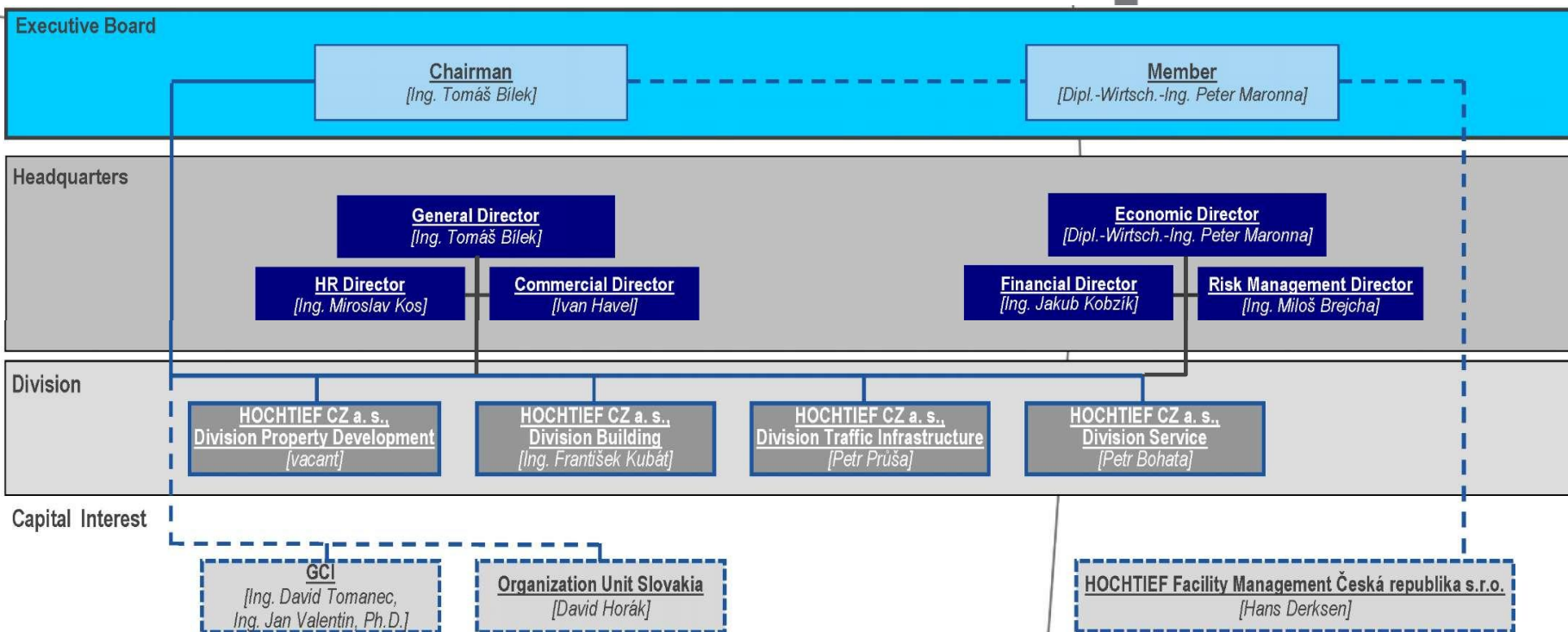
## Our competence in construction works in Czech Republic

# History main milestones:





# Organization Chart HOCHTIEF CZ a. s.



### The Competence Centre for:

- Energy sector
- Industry sector
- Infrastructure sector
- Office sector
- Residential sector

### Employees with HOCHTIEF CZ a. s.

- **1195** in total
  - Management: **6**
  - Technical/administrative staff: **530**
  - Craftsmen: **659**

### Current Projects

- New power resource 660Mw in Ledvice power plant
- Reconstruction of the castle hill revitalization project Litomyšl
- Multifunctional Building fakulta VŠB – TUO Ostrava
- Udánek sewerage project, Sušice, Borsov and modernization of WWTP
- City Ring Prašný Most , Prague





## Tunnel Blanka





**Metro – station Střížkov**

# Selected projects



Soccer stadium Slavia

# Selected projects



**Nuclear power plant Temelín**





**HOCHTIEF**

Thank you for your attention

