
First successes in Indian Infrastructure

15/03/2016

TRACTEBEL

ENGIE



CONTENTS

Chapter 1

Tractebel in General

Chapter 2

Tractebel competences in Infrastructure

Chapter 3

First successes in Indian Infrastructure

Chapter 4

Question & Answers

01

Tractebel in General



Shaping our world

Tractebel is an international engineering company that provides high quality, state-of-the-art **Engineering Consultancy** and **Project Management** Services for the energy, water & infrastructure sectors.



Always near to you



4400
experts



33
offices



602 M
turnover



850



102 M



2500



325 M



150



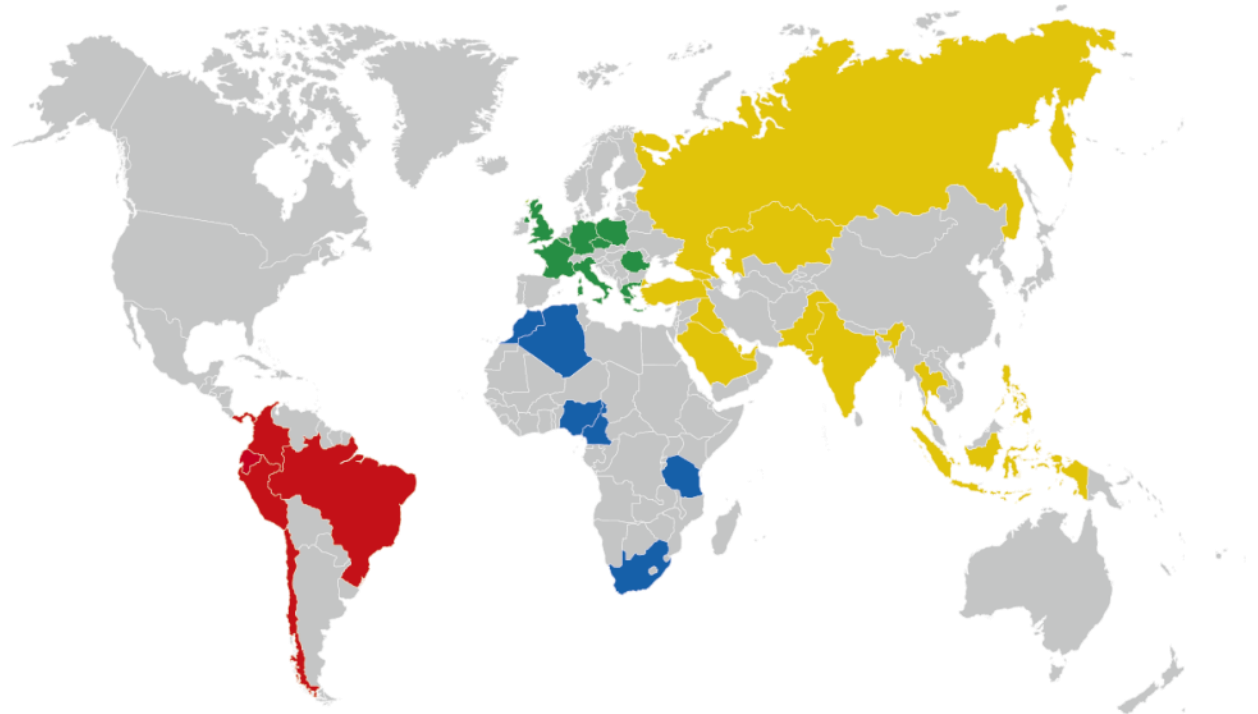
85 M



900



90 M



Offering value throughout the complete lifecycle

1 Pre-investment

- Basic Design
- Due Diligence
- Environmental Impact Assessment & Licensing
- Master Plans & Policy Studies
- Power System Development & Economics
- Pre-Feasibility & Feasibility Studies

2 Implementation

- Commissioning
- Detailed Design
- Engineering Procurement Construction Management
- Front-End Engineering Design
- Owner's or Lender's Engineer
- Project & Contract Management
- Quality Assurance

3 Operational

- Modification, Renovation, Lifetime extension
- Operation Support Solutions
- Simulators & Training
- Strategic Operation & Maintenance Engineering

4 Decommissioning

- Dismantling
- Site Redevelopment Studies
- Waste Management

Your partner in energy, water & infra

Energy

- Renewables (Solar, Wind, Biomass)
- Energy System Consultancy
- Digital & Decentralised Energy Solutions
- Hydropower
- Nuclear
- Thermal Energy
- Transmission & Distribution
- Gas & LNG

Water

- Coasts & Estuaries
- Reservoirs & Dams
- Flood Protection
- Water Transfer
- Water Treatment and Supply
- Irrigation
- Dredging Consultancy
- Offshore Infrastructures

Infrastructure

- Urban Design & Master Planning
 - Smart Cities
- Smart & Complex Buildings
- Transport & Mobility
- Energy Efficiency
- Environmental & Social Programs





Tractebel competences in Infrastructure

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VISION

“Smart & Sustainable Infrastructure” is our motto.

We provide high-quality sustainable solutions through the smart integration of **infrastructure, buildings, environment, mobility and energy efficiency**.

We combine all our skills in a creative manner, thereby playing a key role in the **urban and environmental development of the future**. We strive to strike the right balance between our natural surroundings and the built-up environment, thus creating a sustainable source of progress and development. **Our strong local presence enables us to tackle quickly** and with the right expertise the challenges faced by local authorities and private companies. In every case, we act as a responsible, independent consultant.

VISION (CONT'D)

Our competitive advantage is being created by the quality of our consultancy and engineering services and our permanent search for the highest added value by offering a **“one stop shop solution”** for our clients.

We promote corporate social responsibility and ethical behaviour as an employer. We create a **safe and inspiring working environment** for our employees. We support our employees in developing to their full potential.

SERVICES

Buildings	Transport	Water and Environment	Urban Development	Energy and Industry	Economy and Policy
Airports, transport terminals & warehouses	Bridges and tunnels	Industrial site remediation	Energy	Waste storage	Policy advice and strategic studies
Data centres and control rooms	Ports	Dredging consultancy	Sewers	Industrial site remediation	Environmental and risk management
Healthcare, biopharmaceuticals and clean rooms	Intelligent transport systems	Coastlines and estuaries	PPP support	Eco-industry	Communication
Hotels and leisure facilities	Railways	Marine and offshore	Master plans	Energy efficiency	Legal and procedural advice
Industrial buildings	Tramways/ metro	Environment and biodiversity	Mobility	Renewable energy	Process development and support
Offices and public buildings	Waterways	Environmental impact studies	Urban and regional planning	Offshore energy	
Shopping centres	Roads and public spaces	Rivers and flood protection	Eco-districts	Cogeneration	
Building acoustics	Sound and vibration	Environment acoustics	Utilities	Power supply	

Some references

Missing link N60 - Ronse



Scope	Ring road (4.5 km) with tunnel (400m), viaduct (600m)
Period	2011 - present
Client	AWV
Partnership	Arcadis
Task	Reference design – project-MER – DBFM-tender – planning permission – supervision
Investment	350M €
Contract value	2.3M €
Competences	Road / Spatial Design / Mobility / Policy Advice

Some References

SIGMAPLAN: protection plan against flooding along the tidal Scheldt river

Client Waterways & Sea Canal Agency
Schedule 2000-2020



SCOPE

- Survey of the whole river basin
- Set up of a hydraulic model
- Set-up of a phased protection plan using social cost-benefit analysis and strategic environmental assessments
- Support in decision making & process management
- Support in communication
- Support in obtaining licences
- Engineering of dams, bank protection,...

Some References

Storm water drainage master plan of the Tucunduba River in Belém, Brazil

**Client
Schedule**

**LEME / SEIDURB
2012**



SCOPE

- Surveying (topography, bathymetry)
- Hydrological study
- Hydraulic modelling
- Technical and economic feasibility studies
- Conceptual design of the channels
- Basic Design of the chosen alternative

Some references

Tramway - Angers

Scope	New line (12.5km) + maintenance center
Period	2006 - 2009
Client	Angers Loire Métropole
Partnership	Ingérop – INEXIA – Frédéric Rolland Architects
Task	Electromechanical equipment studies – simulation powernetwork
Investment	122M €
Contract value	0.85M € (Total 7.1M €)
Competences	Rail



Some references

Passage of the river Leie - Kortrijk

Scope	Widening and deepening of the river, environment of bridges, public space, quay walls
Period	2004 - 2015
Client	Waterwegen en Zeekanaal (W&Z)
Task	Concept – design – engineering Buda bridge - supervision
Investment	130M €
Contract value	0.85M €
Competences	Spatial Design/ Road/ Ports & Waterways / IMDC



Some references

Zuiderdokken - Antwerp



Scope	Reconversion public space into parc
Period	2016 - 2020
Client	AG Vespa
Partnership	ADR Architectes – Georges Descombes
Task	Concept – design – supervision work
Investment	16.9M €
Contract value	0.9M €
Competences	Spatial Design / Road / Mobility / Policy Advise

Some References: ENERGY EFFICIENT BUILDINGS

Silver tower, BRUSSELS (BELGIUM)

**Client
Schedule**

**AG Real Estate
2013-2017**



SCOPE

- The first passive office tower in Brussels
 - TE is handling the comprehensive engineering assignment focussed on technical equipment and energy design optimization with 2 targets:
 - To achieve the Passive Standard, including engineering services required for Belgian EPB regulation and BREEAM (BRE Environmental Assessment method- level "Excellent") international certification
 - To minimise construction and future maintenance costs.
 - TE has carried out numerous studies to assess:
 - The impact of location of the building; including the effect of shadows cast by neighbouring city buildings.
 - The effect and impact of different materials used.
 - Weather patterns in summer and winter in terms of temperature, wind, humidity, direct and diffused sunlight etc.
 - The change in thermal losses /gains via the shell in summer and winter.
 - Occupant comfort needs in terms of ambient temperature and ventilation.
 - The impact of different energy saving technologies: free-cooling, heat recovery from ventilation exhaust air, waste heat recovery, opportunity to use solar PV etc.

Some references

Brabo 2 - Antwerp

Scope

Redevelopment of 'De Leien' boulevards, intersection 'Noorderplaats', tramline connections, 'Operaplein', road tunnel, renovation bridges, new roads

Period

2011 - 2015

Client

Beheersmaatschappij Antwerpen Mobiel (BAM)

Partnership

Arcadis – Grontmij (TV SAM)

Task

Reference design – project-MER – DBFM-tender – planning permission – supervision

Investment

267M €

Contract value

3.4 M € (Total 10.2 M €)

Competences

Road / Rail / Mobility / Spatial Design / Policy Advice



Some references

Mobil2040, Brussels (Belgium)

Client Brussels Capital
Schedule Region
2011-2014



SCOPE

- Mobil2040 is a visionary study applied on Brussels. Rather than seeing mobility simply as a technical problem, it has been considered as a lever for change.
- Mobil2040 is about more than just roads, cars and metro lines. It also considers walking and cycling, work patterns, mental shift, new technologies, urban planning, citizen participation, our living environment.
- Important aspects are:
 - Mental shift: young people are less eager to own their own car; their smartphone will guide them from 1 point to another
 - Modal shift will become key
 - Making use of the huge datasets available The development of new technologies, like ITS, electrical cars,...
 - A different approach of urban distribution and logistics.

Some references

Kingdom City – Jeddah (Saoudi Arabia)



Scope	Smart City Management Services/ Green Mobility
Period	2016
Client	Engie
Partnership	Cofely Engie
Task	Pre-feasibility study Smart City Services/ Green mobility
Investment	/ €
Contract value	0.15M €
Competences	Urban Design / Energy / Transport / Water / Waste / Environment



03

First successes in Indian Infrastructure



First successes in Indian Infrastructure Sector

Tractebel in India

- About 700 employees
- 3 offices
 - Delhi (Gurgaon)
 - Chennai
 - Gujarat
- Expertise mainly in Energy and Water, now starting up activities in Infrastructure

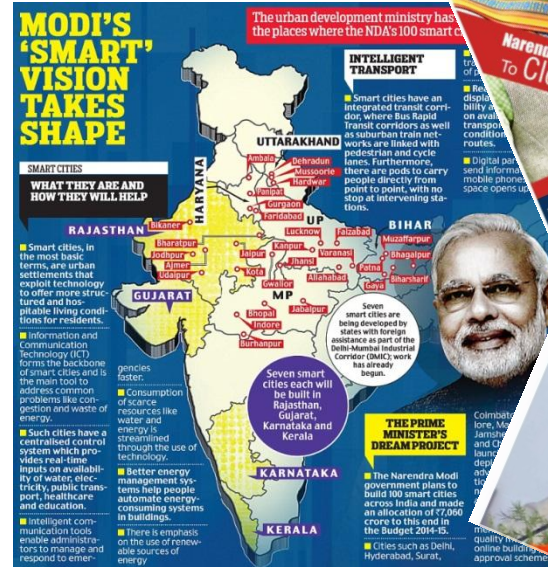


First successes in Indian Infrastructure Sector

Indian economic recovery

- Prime Minister Modi launched in 2014 ambitious infrastructural development plan to relaunch economy

- Development of 100 smart cities
- Clean Ganga mission
- Intelligent transport



First successes in Indian Infrastructure Sector

References in Infrastructure in India

Water Supply

- Design & PMC for 400 MLD Bisalpur Jaipur Water Supply Project (JICA Funded)
- DPR for Water Supply Projects for towns in Punjab, Haryana and Sikkim
- DPR and Design for Industrial Water Supply Projects

Irrigation

- DPR with Survey for Kanhar Barrage Irrigation Project spread over 150,000 Ha
- ADB Funded TA assignment – 'More Food Less Water'
- DPR for other irrigation projects

Transport

- Feasibility Report for Delhi to Mumbai High Speed Rail Corridor
- PMC Services for Chennai & Delhi Airports
- Transaction Advisory Services for 5 non metro airports

Ports & Inland Water Ways

- Yamuna River Navigability study
- Material Handling Projects at Gangavaram Port & Krishnapatnam Ports

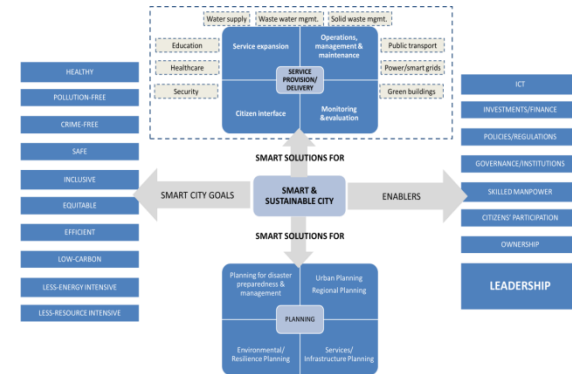
Urban Development

- Dedicated Utility Centre at APSEZ in Visakhapatnam
- Smart City plan and proposal for Dharamshala city

First successes in Indian Infrastructure Sector

Smart city challenge: Dharamshala City

- What: The India Smart Cities Challenge is a competition for municipal leaders and their partners
- Goal: to promote economic opportunity in India, improve governance, and produce better results for urban residents.
- Client: Dharamshala City
- Partners: TERI, Avalon
- Success: This assignment was won through close collaboration between TE Belgium and TE India



Framework for a smart and sustainable city, TERI

First successes in Indian Infrastructure Sector

Yamuna river navigability study

- What: Pre-Feasibility Study assignment for Integrated development of River Yamuna in Delhi Region
- Goal: development of navigability of Yamuna river and water transport facilities
- Client: Inland Waterways Authority of India (IWAI)
- Success: This assignment was won through international competitive bidding wherein 7 leading engineering consultants submitted their bids. Close collaboration between International Maritime & Dredging Consultants (IMDC = subsidiary of Tractebel in Belgium) and TE India



See [LE MAG special India.avi](#)

First successes in Indian Infrastructure Sector

Collaboration between Tractebel Belgium and Tractebel India

Attention points

- Very low price level → limited expert role for Western European engineers
- Lower standards than we are used to in Western Europe → risk for over-engineering
- Local network extremely important

Tractebel Belgium

- Only high level expertise and peer review
- References
- CV's

Tractebel India

- Competitive workforce
- Local market knowledge
- Network

04

Q&A

Thank you for your attention!

