



Front cover #uneaventurehumaine © wilfried-feder.com

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Modeling the future face of transport, promoting balance between citizens' wishes and environmental concerns, supporting the transformation of territories towards sustainable urban planning and designing a new generation of smart buildings in the heart of the city of the future, are key parts of the major economic, social and environmental issues of our time.

As a major player, in France and abroad, Ingerop faces these new challenges through innovative solutions adapted to reality and everyday life. Ingerop provides engineering and sustainable mobility consulting, focusing on green energies and developing a new lifestyle.

Ingerop also commits to collective interest sharing, with passionate men and women, ingenuity, expertise and excellent technique to create the future world.

Yves Metz, Chairman Christophe Blanc, Head of International Division

### **CORPORATE ORGANISATION**

"Working together for a sustainable world and giving everyone a better life"

#### **Executive board**



Yves METZ



**Christophe BLANC** 



Frédéric BURTON



Stéphane GAUTIER

- Yves Metz, Chairman
- Christophe Blanc, Head of International Division
- Frédéric Burton, *Head of Infrastructure Business Line*
- Stéphane Gautier, *Group General*Secretary
- Claude Heyd, *Head of France Eastern Region*
- François Lacroix, Technical and Scientific Director and Head of Water Business Line
- Stéphane Potin, Head of the Infrastructure, Urban Development and Transportation (IVT) Unit and Head of France Central Region
- Ludovic Vaz, *Head of Building Construction Business Line*



Claude HEYD



François LACROIX

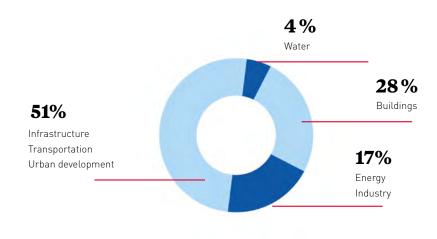


Stéphane POTIN

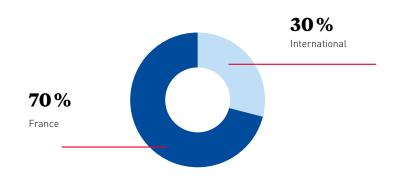


Ludovic VAZ

### **Breakdown by activity**



### Domestic / international breakdown of activity



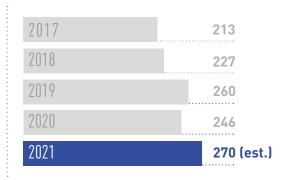
### **Independence**

Ingerop is a fully independent engineering company. Around 400 senior managers own 90% of the share capital and, through a Common Placement Fund, 900 permanent staff own the remaining 10%.



### Turnover (in millions of euros)

About 2300 employees operating in more than 69 countries around the world



### 7 business lines

#### AND SERVICES AT ALL STAGES OF THE PROJECT LIFECYCLE



#### Water

Design of hydraulic infrastructure and river works as well as creating, extending or redeveloping port areas. We encourage the controlled development of facilities whilst preserving the natural environment and biodiversity.



#### Infrastructure

Designing, implementing and upgrading sustainable transport infrastructure. Imagining transportation systems that can adapt to changing uses.



#### **Transportation**

Enabling everyone to travel and have access to efficient and comfortable public transport. Developing the networks with the most modern systems. Anticipating new mass transport needs.



#### **Urban development**

Considering the city in all its complexity, at different scales. Responding to current and future challenges with greater use of circular urban design. Increasing the amount of natural habitats in the city. Developing the post-carbon urban spaces of tomorrow.



#### **Buildings**

Design of efficient and sustainable buildings where people can learn, live, work, be cared for, and where they feel good.



#### Industry

Meeting the needs of industrial customers at every stage of their projects. Innovating alongside industrial companies to succeed in current transitions and meet the challenges of the future.



Facing the climate emergency by meeting the challenges of low-carbon electricity production and by providing sustainable solutions for energy storage, management and transport.

#### Our services

- Feasibility studies
- Preliminary studies
- Advice to public authorities
- Concept design and detailed design
- Integrated engineering
- Detailed studies
- Administrative procedures

- · Project management
- Procurement
- Environmental studies
- Construction documentation and methods
- Construction supervision
- · Design coordination and integration
- Scheduling and monitoring

- Coordination of fire safety systems
- Operation and maintenance assistance
- Turnkey projects
- Consulting engineer expertise
- Value engineering
- Inspections and conditions surveys
- Audits

### **Memberships**





































#### **Accreditations**

Ingerop integrates social environmental and economic concerns, in all of its activities taking into account :

- The health and safety of its employees based on the European standard ISO 45001
- Its clients' objectives thanks to constant investment in improving management processes as set out in the European Standard ISO 9001
- The environment based on European Standard ISO 14001 and the analysis of greenhouse gases generated by its activities.

#### France

Ingerop, its French agencies and subsdiairies, are certified:







#### International

Ingerop in Quebec is certified



GEOS in Switzerland is certified



Ingerop Chile is certified ISO 9001 TUVRheinland



Ingerop South Africa is certified



Codema and EDR in Germany are certified according to ISO 9001

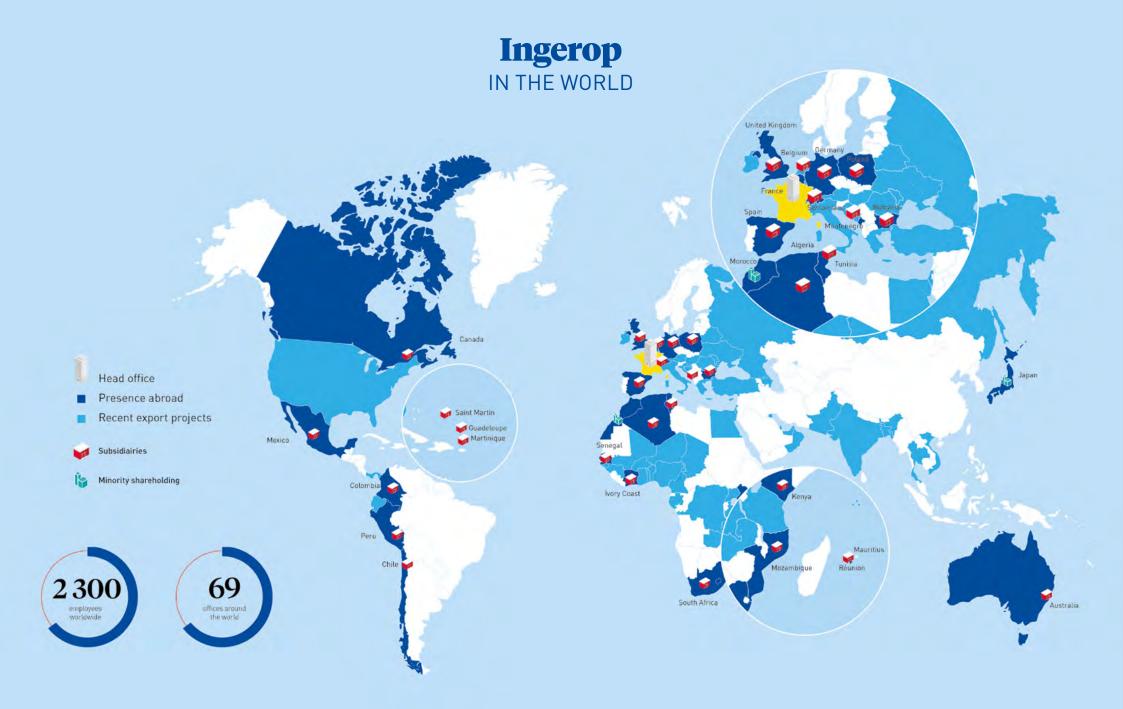


Rendel in United Kingdom is certified





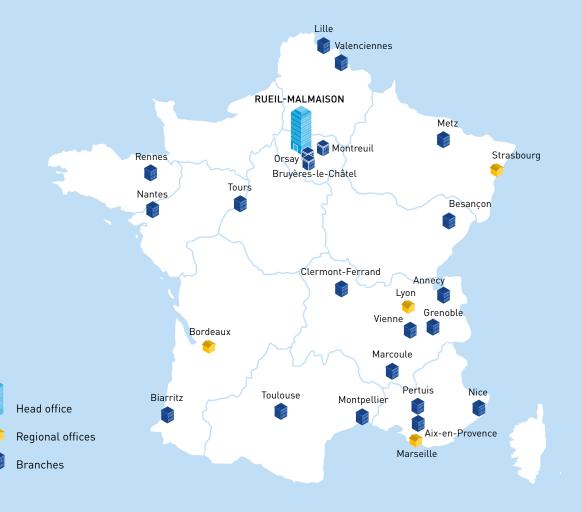
## INGEROP IN THE WORLD















## INFRASTRUCTURE

## Infrastructure

### **Highways**

- Traffic and transport studies
- National roads and highways
- Rural roads
- Urban roads and streets with utilities and storm-water control
- Toll plaza
- Rest and service areas
- Signalling (static and dynamic)
- Multitubular ducts
- Toll systems, videosurveillance

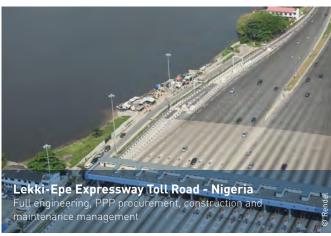














### **Bridges**

- Bridges and civil structures for road, rail and airports
- Steel or concrete, composite bridges
- Cast-in-situ or precast bridges
- Single or multi-span bridges
- Cantilever
- Incrementally-launched
- Cable-stayed
- Extradosed
- Arched

- Bridge monitoring and maintenance
- Auditing of existing structures
- Repair and strengthening







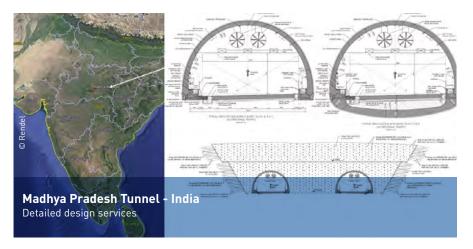






### **Tunnelling**

- Tunnelling feasibility studies and design
- Mechanical, ventilation and electrical
- Safety and fire protection in tunnels
- Immersed tunnels

















### **Airports**

- Design and supervision
- Consultancy and programming

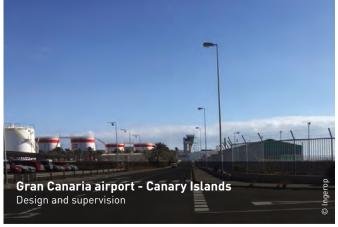
#### Airside infrastructures

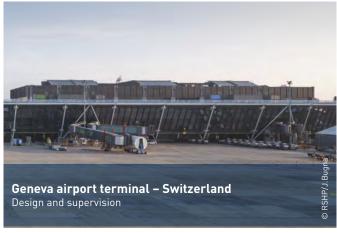
- Runways
- Beacons and lighting
- Control towers
- Mobile equipment
- Aprons / taxiways

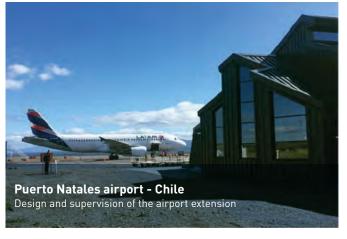
#### Landside infrastructures

- Air terminals
- Luggage handling and X-ray control
- Docking platforms









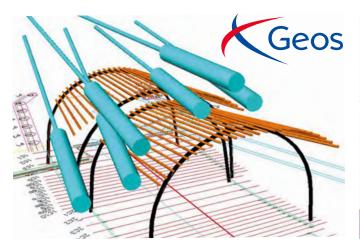


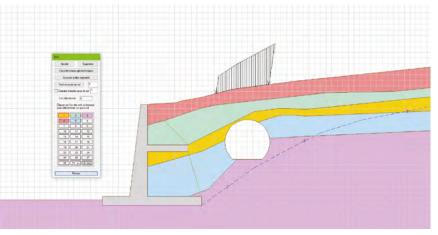


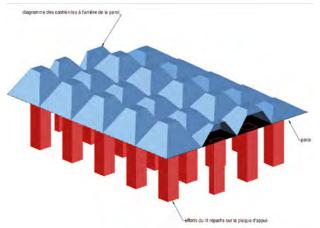
### **Geotechnical expertise**

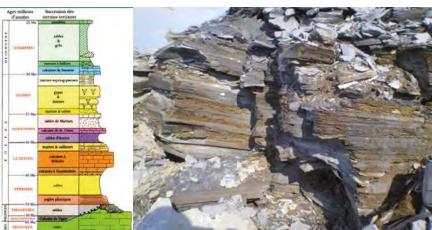
- Soil mechanics for infrastructure projects
- Karstology, stratigraphy, hydrogeology, geomorphology, structural geology
- Soil testing definition
- Monitoring interpretation: foundations, retaining walls, natural risks mitigation
- Development of calculations for different codes and licensing of corresponding software

GEOSTAB	Software for slope stability calculation
GEOMUR	Software for retaining walls calculation
GEOFOND	Software for shallow or deep foundations
GEOSPAR	Software for facing or nailed walls calculation
GEOTUNNEL	Software for convergence-confinement and front excavation calculation
GEODEPL	Software for prediction of settlement evolution based on site measurements









## **TRANSPORTATION**

## Transportation

#### Mass rapid transport

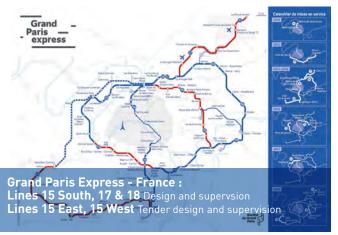
- Conventional and automatic metro lines
- Specialised signalling (CBTC, ATP, ATS, ATO)
- Systems integration
- Operation and maintenance
- Rolling stock
- Feasibility and opportunity studies
- Modelling and simulations

- Civil works
- Stations
- Depots and maintenance centres
- Signalling and automation
- Telecommunications
- Ticketing













## Transportation

### **Light rail**

- All types of tramway (rubber, rail, bi-modal)
- OHTE, ground-level or battery-based power supply
- Intermodal design
- Urban integration
- Rolling stock and maintenance
- Feasibility and opportunity studies
- Modelling and simulations

- Civil works and track
- Depots and maintenance centres
- Signalling and automation
- Telecommunications
- Ticketing















#### Long distance rail and high speed line

- Refurbishment and new rail lines
- Cost effective lines
- Operation and transport planning studies
- Rolling stock expertise
- Maintenance
- Track layout, signalling, equipment and system integration

- Civil works
- Depots and maintenance centres
- Signalling and automation (ERTMS and classical)
- Telecommunications
- Ticketing
- Feasibility and opportunity studies
- Modelling and simulations













# Transportation

#### Cable cars

- Systems integration
- Alignment and layout
- Feasibility and opportunity study
- Stations
- Civil works
- Urban integration
- Modelling and simulations
- Telecommunication
- Ticketing













### Transportation

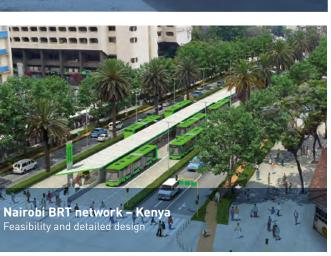
### **Bus rapid transit**

- Design
- Feasibility and opportunity studies
- Works supervision
- Operation and maintenance
- Bus and motorisation (electrical, hydrogen, natural gas, hybrid)
- Civil works

- Depots and maintenance centres
- Urban integration
- Modelling and simulations
- Telecommunication
- Ticketing













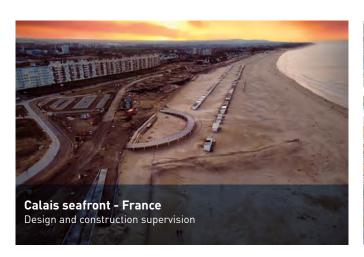
## **URBAN DEVELOPMENT**



### **Urban planning**

Integration of urban planning and architectural services

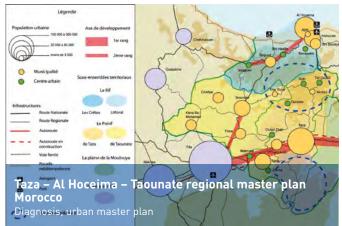
- Building design
- Transportation requirements
- Network services
- Environmental requirements
- Multimodal stations and equipment
- Urban masterplan











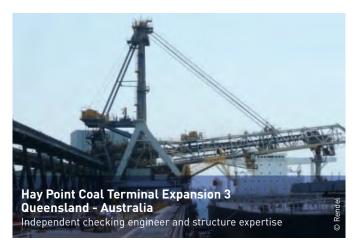


# WATER

#### **Ports**

- Sea / river ports
- Dry ports
- Multimodal logistics ports
- Dry and liquid bulk cargo
- Masterplan
- Logistics organisation
- Road, rail and port interfaces
- Structural analysis for quays and peers
- Rehabilitation works
- Harbour
- Coastal engineering















#### Dikes and locks

- Small and large dikes and locks
- Rehabilitation works
- Scouring and erosion countermeasures
- Hydraulic structures
- Waterways and canals
- Monitoring and safety assessment
- Stability analysis and geotechnical expertise













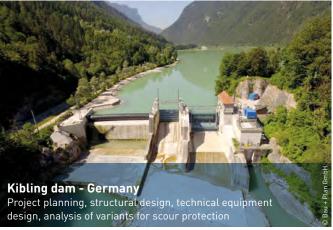
#### **Dams**

- Small and large dams
- Concrete (CVC, RCC,...) and embankment dams
- Rehabilitation works
- Stability analysis and expertise
- Monitoring and safety assessment













#### **Environment**

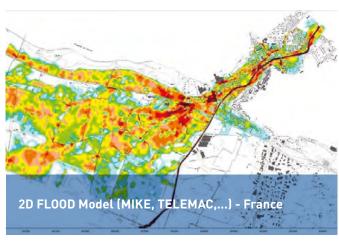
- Water treatment and distribution
- Strategic environmental management plans
- Pollution control studies and investigations
- Waste management and planning
- Institutional support, organisation and training
- Socio-economic audits and development planning
- Soil decontamination
- Environmental impact assessment (EIA)

#### **Hydraulic expertise**

- Hydraulic modelling (1D, 2D, 3D)
- Dam break analysis
- Hydraulic structures design and rehabilitation
- Fish ladders
- Hydrology and hydrogeology
- Sediment transport
- Geomorphology













## **BUILDINGS**

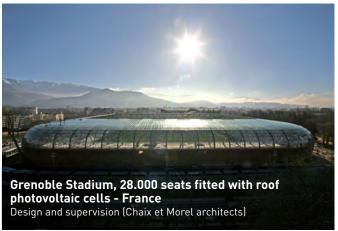
## Buildings

### **Large roof structures**

- Stadiums and recreational facilities
- Roofs and platforms













### Hospitals, health and biomedical centres

- Hospitals and university hospitals
- Clinics
- Maternity hospitals
- Nursing homes
- Dispensaries
- Pharmaceutical laboratories
- Research laboratories
- Biomedical equipment













### **Community facilities and offices**















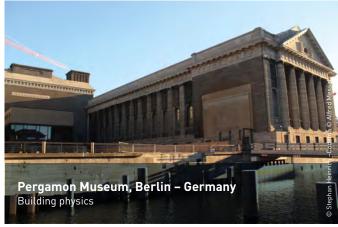
### **Cultural buildings**



- Educational
- Museums
- Historical monuments: maintenance, rehabilitation













## Ruildings

### Specialisation in building design

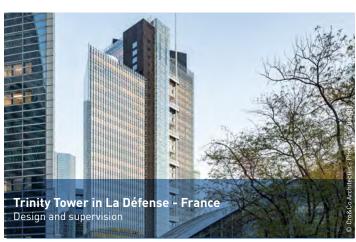
- Facades
- Wooden structures
- High environmental quality (HQE-LEED)
- Mechanical works
- FF&E
- Cable structures
- Fire safety











# Buildings

# **Project management**

- Infrastructure
- Industrial
- Residential
- Education
- Culture and sports











# ENERGY



# Renewable energy and heating network/smart grid

- Hydroelectric power plants and stations
- Geothermical plants
- Photovoltaic
- Heating network / smart grid
- Biomass plants
- Biogas plants













# Energy

### **Decarbonisation**

- Hydrogen production, storage and distribution plants
- Transportation consultancy (trucks, cars, boats, train)
- CO2 capture and sequestration
- Methanation
- Process optimization regarding energy

### **Nuclear engineering**

- Laboratories, research centres
- Military nuclear facilities

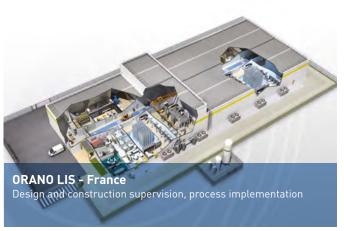








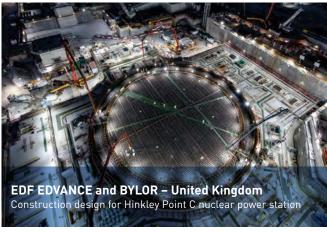




# **Nuclear engineering**

- Nuclear power plant
- Large infrastructure (cooling towers, intake/discharge channels, tunnels)
- Seismic assessments, analyses and reinforcement solutions
- Nuclear spent fuel storage
- Interim storage facilities ILW-LL, HLW-LL
- Nuclear waste treatment, conditioning, recycling, logistics
- Repository for ILW-LL, HLW-LL
- Research reactors













# INDUSTRY

# Industry

# **Industry**

- Data centres, IT rooms
- Steel and metal industries
- Materials industry
- Aerospace
- Industrial process
- Defense, pyrotechnics and military sector
- Chemical and petrochemical industries













# Industry

# **Industry**

- Car and equipment manufacturing
- Agrofood, wine sector
- Manufacturing industry
- Electricity, electrical engineering, electronics









# **Industry**

- Pharmaceuticals, biotechnology
- Luxury and cosmetics industries











# **COMPUTING SOFTWARE**

Ingerop develops specific applications according to our clients' needs, creates files in any required format, and adapts constantly to the most recent technological developments, such as 3D modelling and BIM. Ingerop has developed an internal secured document management system: AGORA. This solution of collaborative working has been designed to organise, enhance, share and secure project documents.

### Infrastructure / Urban development

ANSYS – CESAR – ROBOT - RIDOA - SCIA – SOFISTIK - ZSOIL MIDAS CIVIL - PLAXIS - LUSAS	Finite element software
SC00P	Calculation software developed within Ingerop ; three-dimensional step by step analysis (bridges, tunnels, cut and cover trenches)
MX - MENSURA - COVADIS - ACOSE - ALIZE - GEOMACO - MOSS/MX - CARACAS - AUTOTURN - OPENROADS	Roads and railways track layout studies
FLUENT – FLOW VENT – FLO EFD – SES – SOLVENT - CAMATT	Ventilation and wind simulation softwares (tunnels, under- ground networks)

### **Transportation**

ARMATIS – ELBAS – OPENTRACK- SAMURAIL – SOFTLINE - VIRIATO	Railway tools
DAVIDSUM – POLYDROM – DAVIS – VIS WALK – PIEGE – GIRABASE – CONDOR	Traffic modelling softwares – urban planning simulation
VIRIATO	Railway system planning

#### **Buildings**

ADFER – ROBOT – SCIA	Civil engineering, concrete structures
ACUDO -ADVANCE DESIGN - EBPlate - LTBeam - LTBeamN - PEP - POTAL + - POTFIRE - R15 - COP - TEKLA Structures	Metal structures, wood and mixed structures
TEKLA – RHINO GRASHOPPER – FORTEN – TENSYS	Building façades and finishing works techniques
PHYSALIS façades – BISCO-TRISCO – ECOTECT – RADIANCE – PV SYST – VE Virtual Environment	Energy efficiency softwares

#### Water

BUSE – LIGNO – HEC-RAS –HEC-HMS – CARIMA – MIKE BASSIN/MIKE FLOOD/MIKE URBAN – CANOE – EPANET TELEMAC 2D and 3D	Hydraulic and drainage softwares
PDS – PDMS	Piping and process design
MISS 3D – SASSI2000 – TALREN – PASSY – DALLIA – RAFT – WFER – GEO	Soil consolidation, retaining walls
IMPACT ADEME – TREFIC	Estimation of air pollutants emissions
ARIA IMPACT	Modelling of atmospherical pollutants dispertion
Bilan Carbone™	Carbon content balance software

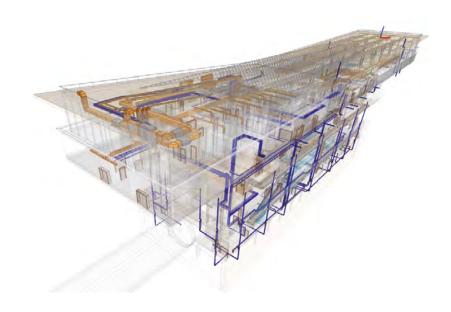
### **Energy / Industry**

AUTODESK INVENTOR – CATIA –RHONCEROS – SOLIDWORKS – Motion Works – Simulation	Processing facilities and special equipment installation
ANSYS – ASTER	Seismic, spectral and modal analysis, airplane crash
BLAST by LS-DYNA	Explosion
MCNP/MERCURE	Radiation protections and criticality

# **BIM**

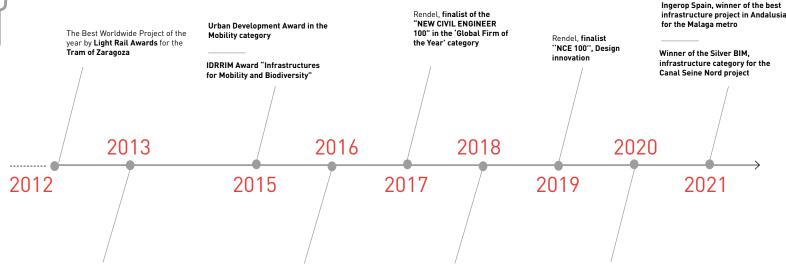
### BIM, 3D modelling

Building Information Model, BIM, is systematically used by Ingerop for all our buildings and infrastructure design. The use of 3D models allows, from an early stage, a complete overlap of the architectural views and engineering drawings. At further stages of detailed design, mechanical and electrical engineering, as well as all technical parameters, are integrated in the structure in such a way that coordination is automatically ensured. This process is a crucial technical and cost control tool throughout the complete engineering process.



# **Awards**

Inventing for tomorrow is our promise to our clients; we are committed to meet and exceed their expectations. Innovation is at the heart of Ingerop and our teams are proud to be awarded for their high performance solutions



Vidin Calafat Danube Bridge.
Bridge Awards of Excellence by American
Segmental Bridge Technology

**Grand Lille Stadium** by European Award for **constructional steelwork** 

**Leaf Awards 2013** for **Toulon Stadium** with Archi 5

Rendel, finalist of the "NEW CIVIL ENGINEER 100" in the "International Impact" category

Best environmental initiative for the Tram of Zaragoza by the Global Light Rail Awards French National Engineering Great Prize for Nausicaa Centre National de la Mer (Marine National Centre)

**Planning and Construction Prize** for **Urbalad**, Michelin research centre

Rendel, winner of the "Global Project of the Year" category - Rail Engineering News

French National Engineering Great Prize for Ynfarm (largest vertical insect farm in the world)

Territories and Innovation category award for the Deconstruction of the SRD refinery in Dunkerque

# INTERNATIONAL MANAGEMENT COMMITTEE



CHRISTOPHE BLANC
International Director



PIERRE ALBASI
Deputy International Director
Director Geos Switzerland and Ingerop
Montenegro
Director Latin America



PASCAL HOUDEAU
Infrastructure International Director



PHILIPPE-ANDRÉ HANNA Transportation Director General Manager Spain



CARMELO GRIMALDI Business Development Director, Hydropower and Dams



THOMAS SONTAG

Managing Director Codema International
GmbH and Ingérop Deutschland GmbH



VARDAMAN JONES
Managing Director
Rendel - United Kingdom



VIRGINIE LANFREY
Director Rendel Ingerop - Australia



ALEXANDER KAMMERL Managing Director EDR GmbH



NEEL DAYA

Managing Director of Ingerop South Africa
CEO Ingerop International Consultants



GRÉGOIRE AUBERT Head of infrastructure division Geos Switzerland



LAURENT AUZEL
Director Ingerop Canada



ANTOINE DUPLOUY
Director HPM Morocco



MARTIN GIL
Director Ingérop Afrique Ingénierie
(Senegal)
Director Ingérop Côte d'Ivoire
(Ivory Coast)



JUAN PABLO HERNANDEZ
Deputy Director Ingerop Chile



WINSTONE MULAKU Regional Manager Ingerop - Kenya



**SERGIO SIGAVANE**Regional Manager Ingerop Mozambique

# CONTACT

### **Europe**

#### **RENDEL LIMITED**

200 Great Dover Street SE1 4YB - London, United Kingdom Phone: +44 20 7654 0500 london@rendel-ltd.com

156 Great Charles Street Queensway, B3 3HN Birmingham, United Kingdom Phone: +44 121 809 6501 t.hackett@rendel-ltd.com

Office 134, 2430/2440 The Quadrant Aztec West, Almondsbury, BS32 4AQ, Bristol, United Kingdom Phone +44 20 7654 0574 d.squires@rendel-ltd.com

#### **INGEROP SPAIN (T3)**

C/Mallorca, 214, 2°, 3° 08008 Barcelona, Spain Phone: +34 93 323 86 05 ingerop.bcn@ingerop.es

C/ Monte Esquinza 20, bajo 28010 Madrid, Spain Phone: +34 91 758 48 99 ingerop.mad@ingerop.es

C/Gran vía de Colón nº21 4°C Edificio Olimpia 18001 Granada, Spain Phone: +34 958 28 62 26 ingerop.gra@ingerop.es

#### SMART2

C/ Monte Esquinza 20, bajo 28010 Madrid, Spain Phone: +34 91 1610790 smart2@smart2.es

#### **INGEROP DEUTSCHLAND**

#### **CODEMA INTERNATIONAL GMBH**

Frankfurter Straße 1 63065 Offenbach am Main, Germany Phone +49 69 971019 0 info@codema.net

#### **EDR GMBH**

Dillwächterstraße 5 80686 Munich, Germany Phone +49 89 547112 0 info@edr.de

#### IDC - INGÉROP DEUTSCHLAND CONSULTING GMBH

Alte Jakobstraße 79/80, 10179 Berlin Phone +49 30 8471279 0 info@ingerop.de

#### **GEOS CONSULTING ENGINEERS**

1, route de l'Aéroport - CP 331 CH-1215 Geneva 15, Switzerland Phone: +41 22 309 30 60 geos@geos.ch

54, avenue Dapples CH-1006 Lausanne, Switzerland Phone : +41 21 613 44 88 geos@geos.ch

#### **INGEROP BELGIUM**

Ingérop Belgium SRL Chaussée de Waterloo 1511 1180 Brussels Phone: +33 6 11 19 14 03 rene.cuiqnon@ingerop.com

#### **INGEROP MONTENEGRO**

Njegoseva BR.6 81000 Podgorica, Montenegro ingerop.international@ingerop.com

#### **INGEROP BULGARIA**

INGEROP BG EOOD Kniaz Boris I, 38 street, floor 2 1000 Sofia, Bulgaria ingerop.international@ingerop.com

#### **INGEROP POLSKA**

ul. Skierniewicka 14/2 01-230 Warszawa - Poland ingerop.international@ingerop.com

### **Africa**

#### INGEROP INTERNATIONAL CONSULTANTS

3B-3rd Floor, Citius Building, 31 Cybercity, Ebene - Mauritius Phone: +230 454 68 68 ingerop@ingerop.mu

#### **INGEROP SOUTH AFRICA**

2nd Floor, 138 West St, Sandton, Gauteng, South Africa 2031 Phone: +27 11 808 30 00 jhb@ingerop.co.za

#### **INGEROP MOZAMBIQUE**

Rua da Argelia N° 263 Maputo - Mozambique Phone: +258 21 49 88 23 mpm@ingerop.co.mz

#### INGEROP AFRIQUE INGENIERIE

SICAP Sacré Coeur Cité Keur Gorgui Immeuble Hermès 4 - Lot n°95 BP 4153 Dakar, Senegal Phone: +221 33 824 92 58 ingerop@ingerop-afrique.com

#### **INGEROP COTE D'IVOIRE**

Abidjan Business Center, 5ème étage, Immeuble SCI Broadway (BSIC), 7 avenue Noguès, Abidjan Plateau 01 B.P 5754, Abidjan, Ivory Coast martin.gil@ingerop.com

#### **INGEROP EAST AFRICA (PTY) LTD**

5th Floor, Devan Plaza, Crossway Road, Westlands, Nairobi, Kenya, PO Box 2758 00606, Sarit Centre, Tel: +254 722 759 867 nbo@ingerop.ke

#### INTEC

N°5, impasse n°1, Avenue Abdelaziz Thaalbi 1013 Menzah 9 Tunis, Tunisia Phone: +216 71 875 249 intec@intec.com.tn

#### **INGEROP ALGERIA**

Nouvelle Zone Urbaine Lotissement C1 Nº12 âin nâadja, Alger, Algeria Phone, fax: +213 21 60 77 63 ingerop.international@ingerop.com

#### HPM

40, rue Oued Fès - Appt 3 Agdal - 10 000 Rabat, Morocco Phone: +212 (0)5 37 77 21 11 contact@hpmgroupe.com

### **Asia & Pacific**

#### **INGEROSEC**

Shinjuku i-LAND Tower 43F 6-5-1, Nishi-Shinjuku, Shinjuku-Ku Tokyo, Japan 163-1343 Phone: +81 3 53 24 02 11 ingerosec@ingerosec.com

#### RENDEL INGEROP PTY LTD

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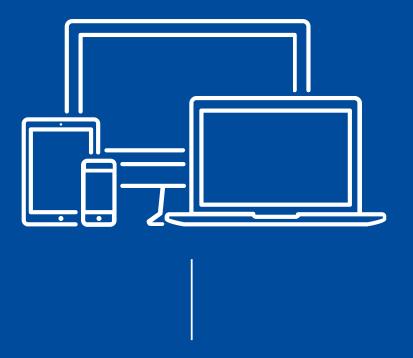
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#### **INGEROP PERU**

C/ Dos de Mayo 534, oficina 306 Miraflores Lima, Peru Phone : +51 9800 38 484 abel.lopezjaramillo@ingerop.es

#### **INGEROP MEXICO**

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18, rue des Deux Gares CS-70081, 92563 Rueil-Malmaison Cedex France Tél. + 33 01 49 04 55 61

> ingerop.international@ingerop.com www.ingerop.com