



LEADING CIVIL ENGINEERING COMPANY IN EUROPE WITH 75 YEARS OF EXPERIENCE

SINCE 1949

CONTENT:

3	About us
4	IGH laboratories
5	Testing Laboratories
13	Metrology laboratory
14	IGH CTA & CERT
16	Pelješac Bridge
18	Drava Bridge
20	Croatian Motorways
22	Motorways in Kosovo
24	Railway line Škrljevo-Rijeka-Jurdani-Šapjane
26	Four Seasons Dubrovnik
28	Nuclear Power Plant Krško
30	Selace Wind Farm
32	Zagreb International Airport

WHO WE ARE?

Institut IGH is one of the leading European civil engineering company. Headquartered in Zagreb, we operate in Western Balkans, South Caucasus, MENA, and CIS region.

- The average number of employees over the past ten years: **500**
- Average annual turnover: **€24–27 million**
- Subsidiaries: **Albania, Bosnia & Herzegovina, Egypt, Georgia, Montenegro, Kosovo, Hungary, Italy, Armenia**

OUR SERVICES:



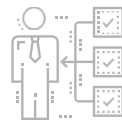
Design



Studies



Supervision



Project management



Laboratory services



Field testing & investigations



BIM services



Certification & accreditation

ALSO:

- Software development
- Engineering investigations
- As-built documentation
- Architecture

OUR SECTORS:

Infrastructure

- Motorways, roads, railways

Energy & Industry

- Nuclear facilities
- Renewables
- Power plants, factories, waste to energy

High-rise buildings

Rehabilitation & Renovation

Ports, airports

Water engineering Spatial

planning Urban planing

KEY FACTS:

In the past **25 years**, we have done the following:

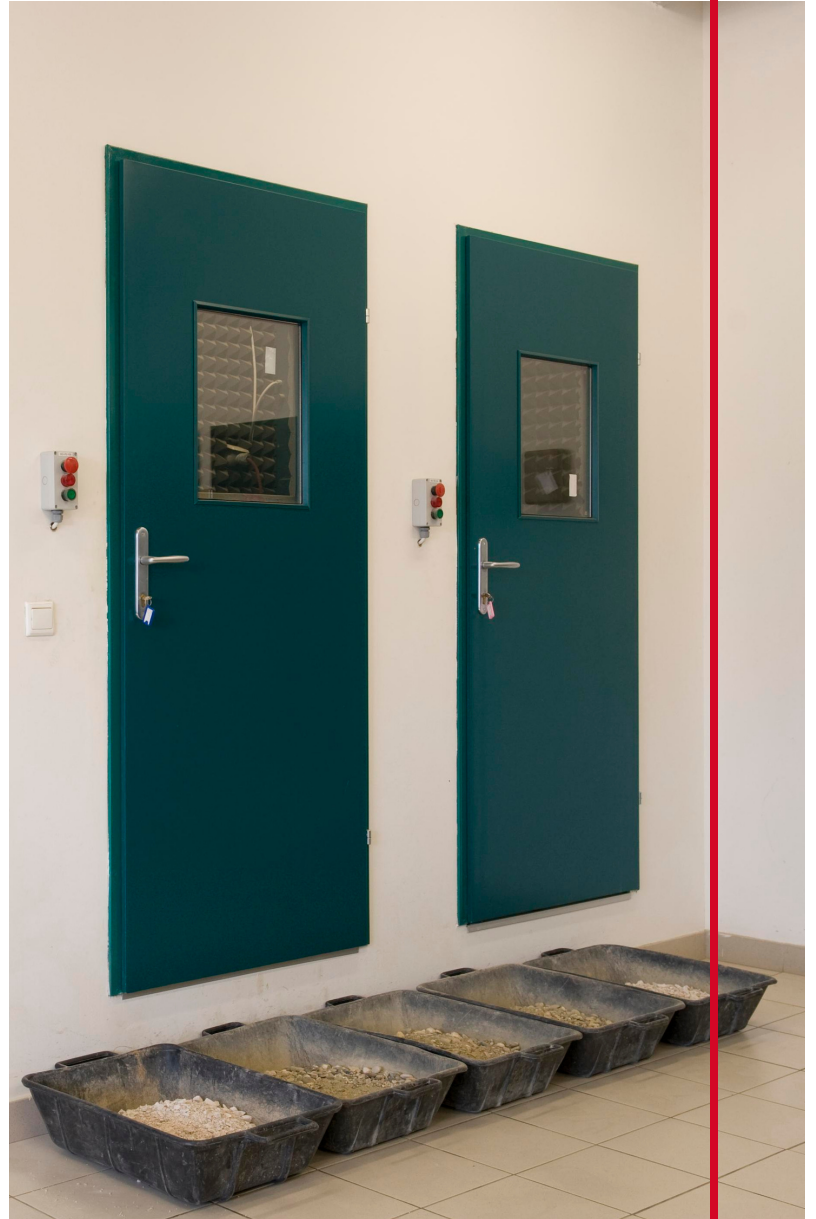
- **9000** projects
- Worth a minimum of over **20 BEUR**
- **100** tunnels total length of more than **100 km**
- More than **20** agglomeration projects
- Over **3000 km** of motorways, roads, and **1000** bridges and viaducts and more



The "Laboratory of Civil Engineering Zagreb", founded over 75 years ago, in 1949, is the very foundation and initial nucleus of the present day Institut IGH. This small civil engineering laboratory was a reliable leader and support to Croatia's construction industry during initial renewal of the country devastated in World War II.

Seven and a half decades later, we have grown into a modern European company still oriented towards laboratory testing, but also providing consulting, design, project management and investment-related services in all fields of civil engineering. The diversity of our work and constant growth have resulted as being recognized as the biggest, modernly equipped & accredited laboratories in Central and Southeastern Europe.

Our laboratory services cover all construction areas, and are accredited according to the standard HRN EN ISO / IEC 17025 for a wide range of testing and for calibration services in the construction industry. With more than 700 accredited test methods and several test methods in the non-accredited field, our laboratories will meet all your requirements and needs to have materials compliant with European construction standards. Our professional laboratory staff will take care of the implementation and safety of your project.



TESTING LABORATORIES:

Our testing laboratories participate in quality control of materials, structural elements and all works during the construction of many different structures, both in Croatia and abroad. Continuous investment in development, acquisition of new testing equipment and permanent education of employees offer IGH Laboratories the capacity to support all these processes.

Our laboratory experts perform tests in the laboratory and on the field, such as the constancy of performance of construction materials, products and structures, as well as testing the quality of different types of water and soil. They gain the trust of their clients every day by meeting the criteria of testing standards and adhering to applicable laws and regulations. IGH Laboratories have all the sophisticated equipment for undertaking investigation works on all types of structures to assess the constancy of performance of construction products and structures.

Laboratory for materials and structures

In every construction project, one of the key tasks is to choose a material that will ensure the durability of the structure but also provide safety for its users. Choosing poor construction materials can lead to the rapid deterioration of the structure and cause additional costs for renovation and the inability to obtain an operating licence.

Our laboratory experts conduct numerous tests to examine the quality of materials. Tests performed on modern equipment will give you the most accurate information about the quality and properties of the material. Primarily, the activity of the laboratory is related to testing and researching of properties of fresh and hardened concrete, concrete in structures, materials for protection and repair of concrete structures, mortars, chemical and mineral admixtures, precast concrete elements, structural elements made of different types of materials such as concrete, wood and ceramics.

In addition, our laboratories for materials and structures provide the following SOW:

- Examination of material properties,
- Concrete quality test,
- Research aimed at increasing the durability of concrete structures,
- Experimental load testing of road and railway bridges and viaducts,
- Testing of natural and waste materials and by-products of other industries,
- Finding the possibility of disposing of waste materials and by-products, their application in construction and production of new materials.

The experts of this laboratory have worked on some of the most significant infrastructure projects in Croatia and abroad, such as the motorway networks in Croatia, Europe and abroad, the Pelješac Bridge, Nuclear Power Plant in Slovenia, Nuclear Power Plant in Hungary, thermal power plants, refineries and many more.





Laboratory for metals

Reinforced concrete and prestressed structures must be dimensioned, designed and realized in such a way that they can take on all loads and influences that are expected to occur during their construction and subsequent use, and this throughout the design life of such facilities. The strength of concrete and steel must be satisfactory to avoid structural collapse or cave-ins.

In Laboratory for metals, we provide various types of tests for metal products companies intend to use in their projects. Those tests are carried out on our modern equipment to pass durability tests and compatibility with other materials.

To ensure the durability and safety of your construction, our laboratory experts conduct detailed and precise tests. Our laboratory staff's expertise is built into every major construction project in Croatia.

When tested in our laboratory, all materials forming part of civil engineering structures are checked following the demanding quality control system applied by the laboratory. Practically all facilities in Croatia - from bridges to tunnels and motorways - have undergone stringent testing in this laboratory. The laboratory provides the following services:

- Testing of structural steel.
- Testing of products that are installed in structures.
- Testing of structural elements by test load.
- Quality control of all materials for building structures.

Laboratory for geotechnical engineering

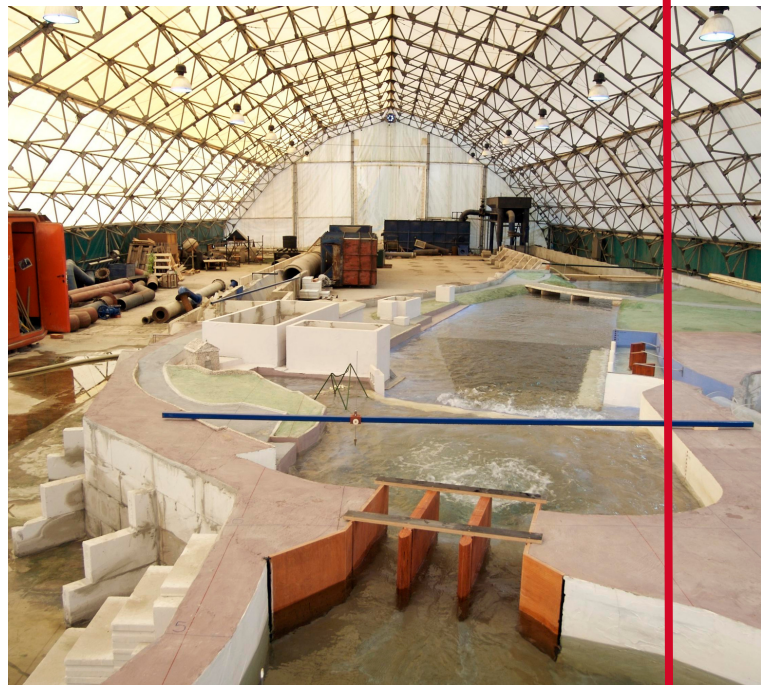
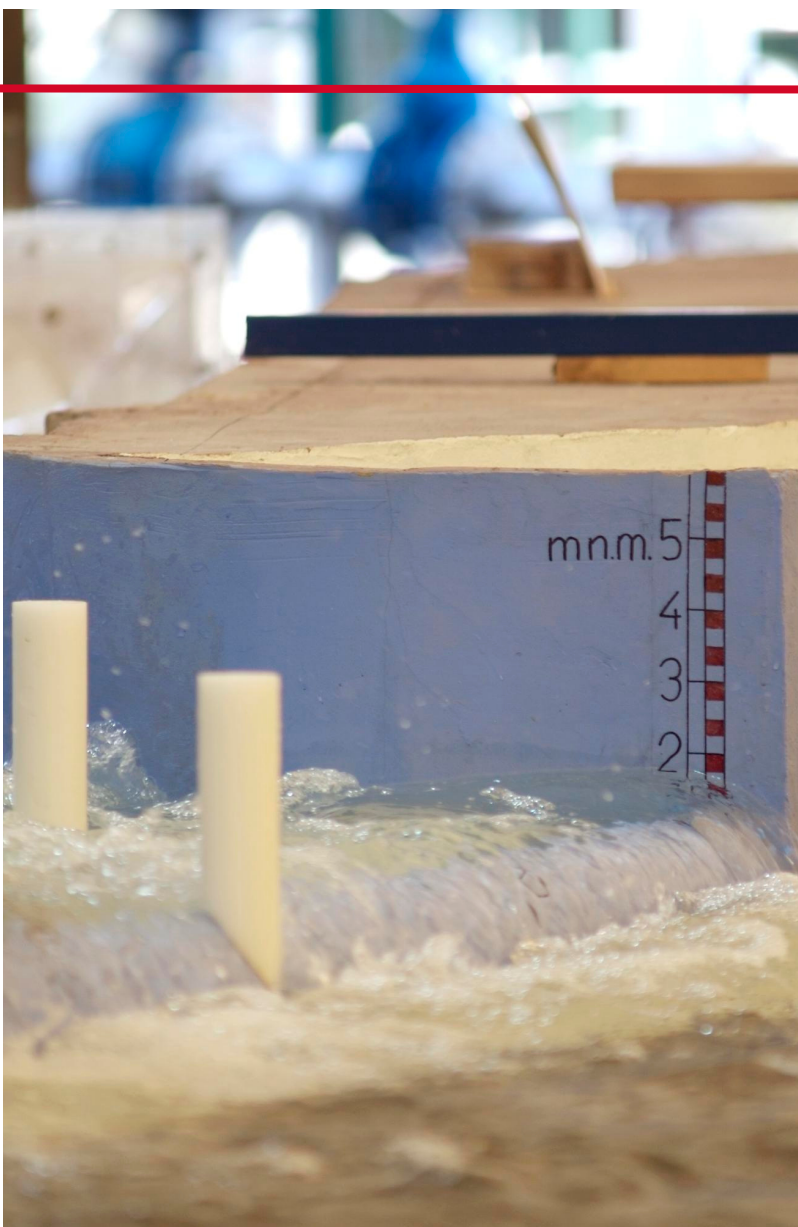
Our geotechnical laboratory conducts various laboratory and on-site tests relating to geotechnical engineering and environmental protection applications. Tests are made in one of the top-of-the-range laboratory and field equipment specially designed to assess rock and soil usability and stability. In fact, adequately conducted geotechnical investigations are the foundation of subsequent design and construction of all civil engineering structures. It should be noted that geotechnical investigations and tests can not entirely eliminate all possible risks because the situation encountered during excavations can never be accurately predicted. Nevertheless, practical problems faced by the laboratory are successfully solved thanks to proper testing, backed by high expertise and extensive experience of our experts.

In the Geotechnical Laboratory, we can conduct laboratory tests of the mechanical and physical properties of soil and rocks. We also perform field soil tests and observations of geotechnical structures.

In addition, our geotechnical laboratory can also help you with:

- Testing clay insulation layers when designing landfills (water permeability, strength, soil contact strength and geosynthetics),
- Testing the tensile strength of geotextiles and geotextile-like products and the breakdown strength of CBR,
- Ensuring geotechnical tests present throughout the working life of the structure,
- Provide you with a wide range of testing in geotechnical engineering and environmental protection,
- Give assessments of suitability and stability of rocks and soil,
- Conducting field research.





Laboratory for water engineering

Water Engineering Laboratory provides high-quality solutions for water supply and sewerage systems in urban areas, irrigation and drainage systems, river regulation and flood protection schemes, and environmental projects, as well as for the improvement of legislative acts passed in the field of water engineering. Water Engineering Laboratory is appropriately accredited for testing various elements and systems relating to irrigation, water supply and water quality preservation. The laboratory conducts measurements on water engineering structures (watercourses, water sources) and sewer facilities.

In addition to hydrometrical measurements and analyses and the hydraulic study of groundwater and surface waters, the laboratory also participates in the physical modelling of all types of water engineering facilities (dams, maritime structures, water storage facilities, and watercourses) in cases when problems can not be solved through theoretical procedures only.

This laboratory can help you by providing services as follows:

- Testing of components for irrigation, water supply and water protection,
- Measurements on hydraulic structures and sewage collectors,
- Hydrometric measurements and treatments, hydraulic research of groundwater and surface water,
- Physical modelling of all types of hydraulic structures.

Laboratory for building physics

For many years, the experts of Laboratory for building physics have been conducting tests of building materials and products according to numerous accredited methods, which include tests of products for thermal insulation, fire tests, and thermal characteristics test, for which this laboratory holds the prestigious Keymark certificate. In addition to the above, we also offer the services of testing the air permeability and water tightness of doors and windows, acoustic tests and tests of construction adhesives.

Tests of building materials that are covered by accredited methods are divided into several areas, and some of them are listed here:

- Doors, windows and shutters: determination of air permeability, water tightness, resistance to wind load and classification with regard to the results of the above tests, air permeability of buildings or parts of buildings, resistance to bullets and punctures, testing of glass by the impact method and classification with considering the results of that test.
- Thermal-insulating materials: determination of tensile and compressive strength, behaviour under point load, long-term and short-term water absorption, water vapour permeability, stability of measurements under given conditions, linear measures of samples, the thickness of insulating products for floating floors, mechanical properties of glass fibre mesh and moisture by drying at an elevated temperature.
- Fire tests: tests of reaction to fire, tests of resistance to fire, tests of exposure of roofs to fire from the outside and appropriate classification according to the results of those tests.
- Acoustic tests: laboratory and field tests of sound and insulation and measurement of sound absorption in an echo chamber.
- Tests of thermal characteristics of building products: determination of thermal resistance and related sizes of building materials.
- Construction adhesives: testing of adhesives for ceramic tiles, determination of shear adhesion of dispersion adhesives and adhesives based on reaction resins, the adhesion strength of cement-based adhesives, open weather conditions, slip, deformation in the transverse direction for cement-based adhesives and grouts.





Laboratory for road construction

With a rich tradition spanning several decades, our Laboratories for Road Construction offers a wide range of services in the field of road pavement construction. These services include material and road pavement construction product testing and research, quality control and supervision during construction and repair, as well as consultancy in asphalt technology processes and material selection. Additionally, the laboratory provides expertise for post-construction quality verification. The laboratory's portfolio includes a wide array of laboratory and field tests, amounting to over 100 accredited testing methods. These tests are categorized into eleven distinct areas, depending on the type of material or product and its intended application in the construction industry.

In our recent expansion of its services & activities, the laboratory has extended its scope to cover activities related to road pavement construction within an integrated building management system. This expansion involves critical tasks such as main road pavement inspections, investigative work, road pavement structure dimensioning, and the development of repair projects.

With more than 40 years of tradition, the laboratory specializes in the examination of the physical and mechanical properties of stones used in architectural applications for both interior and exterior building coverings. These applications also include the paving of squares, parks, and pedestrian surfaces.

Beyond their aesthetic appeal, architectural stones must also meet other building & architectural requirements. The emergence of artificial, so called "agglomerated stone" in the market represents an evolving trend. Construction-technical stone and aggregates, produced through crushing rock masses, are used in various engineering ranging from transport infrastructure and hydro-construction to railways and high-rise buildings. This also includes the construction of concrete and masonry structures. In addition to natural materials, recycled and industrially produced aggregates are gaining traction, their usability validated through testing tailored to their intended purpose.

The laboratory's expert services extend to conducts tests and evaluations of stone blocks used in hydraulic structures, such as those employed in maritime infrastructure construction and development. Additionally, the laboratory offers consulting services for the selection and assessment of stone quality, particularly in the context of restoration work.

With a rich history, the Laboratory for Transport Infrastructure has played a major role in numerous high-profile infrastructure projects, not only in Croatia & the region, but also on the international stage. Our expert team and their contributions have been instrumental in the construction and reconstruction of highways in Bosnia and Herzegovina, China, Georgia, and Libya, showcasing our commitment to excellence, quality and innovation in the field of transport infrastructure and materials testing.

Laboratory for binders and ecology

Cement is one of the key ingredients in concrete and other building materials, without which the environment in which we live would look significantly different. The properties and application of cement, other binders and building materials depend on their chemical composition. If you are working on a construction project, doing a chemical and physic-mechanical analysis of the material is highly advisable.

Our professional laboratory staff can test and analyze the following materials for you:

- cement and raw materials for cement production (limestone, marl, clay, raw flour, slag),
- lime,
- flying ash,
- silicon dust,
- aggregates and fillers,
- ground blast furnace slag,
- concrete,
- concrete admixtures and products for the protection and repair of concrete structures,
- water for concrete preparation,
- pigments and fillers,
- plaster,
- and other building materials.

The production of cement and other construction materials also significantly impacts the environment but also opens up significant opportunities for usage (recycling of materials and energy recovery). The need to protect and preserve the environment and human health also requires knowledge of the impact of construction products installed in buildings, primarily on water and soil, during their service life. The professional staff of the Laboratory for Binders and Ecology can test the quality of:

- groundwater and surface water,
- wastewater,
- waste and waste eluate,
- soil and soil eluate,
- eluate of construction products,
- raw materials and construction products to report CO₂ emissions.





METROLOGY LABORATORY

The metrology laboratory covers an extensive area of calibration both in the laboratory and in the field, including the calibration of length gauges, force gauges, vibrating tables with a measuring system, non-automatic scales and temperature chambers.

In the metrology laboratory, conditions have been set to maintain the necessary temperature stability, gradient control, and humidity control, enabling accurate measurement. Laboratory experts can provide our clients with the most accurate measurements. It is designed in a way that ultimately reduces uncertainty amid temperature and humidity fluctuations.

The laboratory's approach is based on satisfying the needs of each client on the market. The Metrology laboratory aims to meet all your requirements and needs; therefore, it is improving the equipment daily and invests in the education of laboratory experts. We are also enhancing our measurement capability (CMC - Calibration and Measurement Capability). We are providing our calibration services both on the territory of Croatia and in neighbouring countries.

IGH CTA & CERT

As early as 2006, Institut IGH d.d. recognized the need to conduct its business operations in compliance with the requirements of the standard **HRN EN ISO 9001** and reached a strategic decision to introduce a quality management system. It was one of the first companies in Croatia to establish, document, implement, and certify a quality management system according to the standard **ISO 9001**, which increased the quality of service, satisfaction of the end-user, and competitiveness.

In the following years, we introduced **ISO 14001** for the environmental management system. The essential purpose of certification of the environmental management system is to support environmental protection and pollution prevention. Two other standards followed **ISO 45001**, which emphasizes the importance of occupational safety and health as part of the company's culture and **ISO 27001**, which promotes a holistic approach to information security: vetting people, policies and technology.

Finally, to reduce energy consumption, protect the environment, and raise employees' awareness about environmental protection, Institut IGH d.d. has, in addition to existing certificates, completed certification according to the standard **ISO 50001**.

IGH CTA

Was formed as an organizational unit set up within our company which consists of responsible persons nominated for preparation and issuance of the Croatian Technical Assessment (CTA). Our experts responsible for IGH CTA ensure adherence to the procedures for the preparation of CTA, in compliance with all provisions of the Construction Products Act by the Ministry of Construction and Physical Planning of the Republic of Croatia

IGH CERT

Has been accredited by the Croatian Accreditation Agency (HAA), according to the standard **HRN EN ISO/IEC 17065:2013** for harmonised and non-harmonised technical specifications stated in the Certificate of Accreditation No. 3055. In the non-harmonised area, IGH Cert is an Approved Body (AB) No 1/05, according to the Construction Products Act and pertaining ordinances and technical regulations. Our CERT department provides services of assessment and verification of constancy of performance for construction products.

Our IGH CERT department provides certification services, such as services of assessment and verification of constancy of performance for construction products.





INSTITUT IGH, JSC REFERENCES HIGHLIGHT

Peljesac Bridge

CROATIA 2017–2022

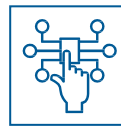


DESCRIPTION:

Construction of cable-stayed Pelješac bridge connecting the south of Croatia with the rest of state territory

- Total length of **2.4 km**
- Total of **13** spans (largest span **285 m**)
- **6** pylons with **98 m** in height

- Width: **22.5 m**
- Together with acces roads of **14.5 km**



SERVICES:

Technical supervision, quality control and control testing



TOTAL PROJECT VALUE

274 MEUR





Drava Bridge

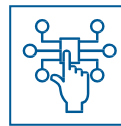
CROATIA 2011–2019



DESCRIPTION:

Construction of cable-stayed Drava bridge

- Total length of **2.5 km**
- Central span: **220 m**
- Lateral spans: **100 m**
- Pylon height: **75 m**
- Width: **28.6 m**



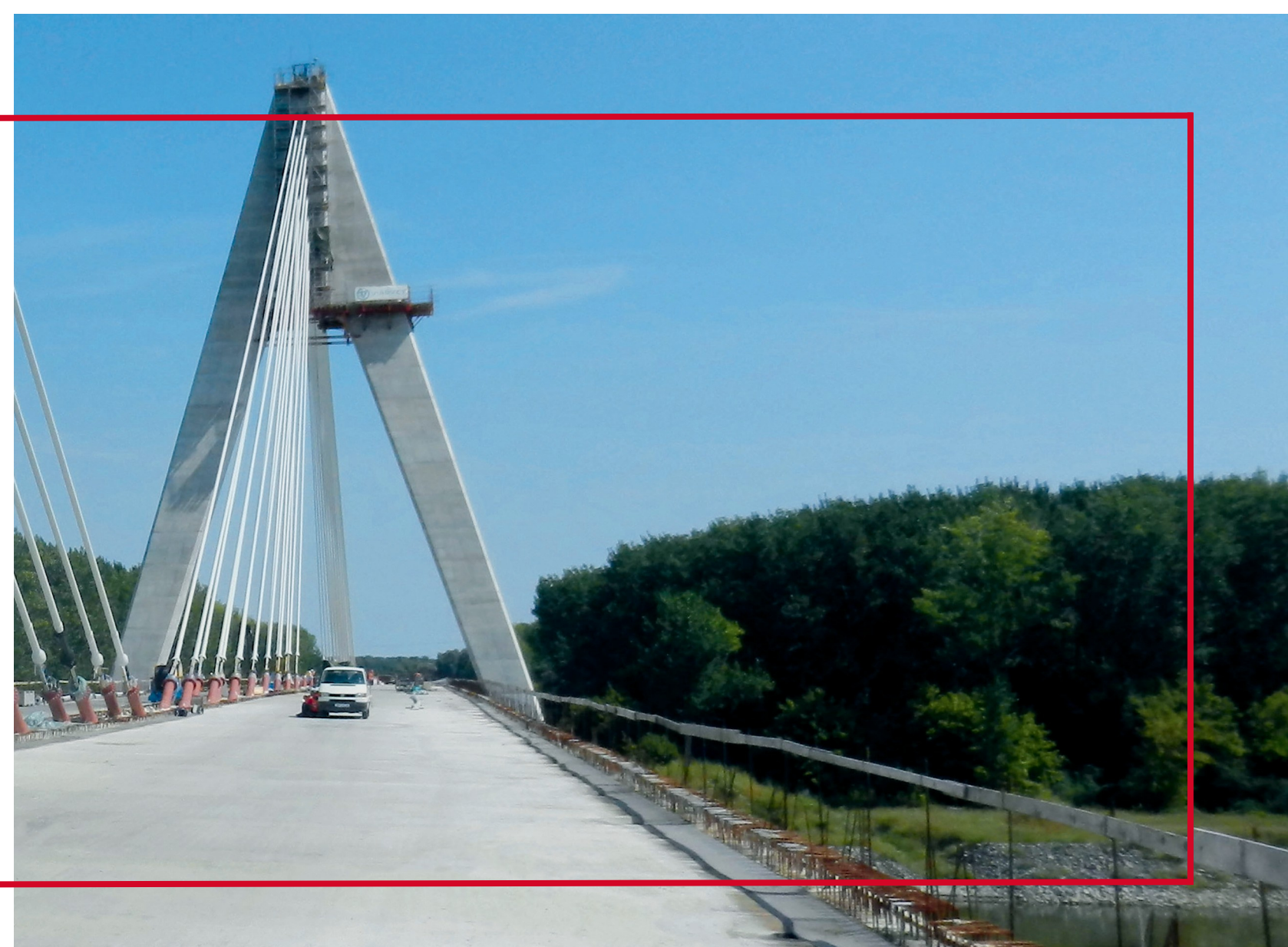
SERVICES:

Design and design review, technical supervision, quality control and laboratory services



TOTAL PROJECT VALUE

115 MEUR





Croatian Motorways

1997 – ONGOING



DESCRIPTION:

The Croatian motorway network integrates over **250 km** of constructed and equipped motorways, over **800** bridges and **80 km** of tunnels.

From the very beginning Institut IGH has been involved on most of the motorway sections, providing its services. The longest tunnels in Croatia on these motorways were designed precisely in Institut IGH and they received an international award for safety and equipment as The Safest Tunnels in Europe in 2007 and 2008.



SERVICES:

Design and design review, technical supervision, quality control and laboratory services



TOTAL PROJECT VALUE

6 BILL. EUR





Motorways in Kosovo

2010–2018



DESCRIPTION:

Route 6

Construction of motorway Morine- Merdare, sections 1, 2, 3 & 9

- total length of **64 km**
- **10** bridges
- **17** overpasses and **12** underpasses

Route 7

Construction of motorway Pristina – Hani I Elezit, sections C1D, C1 and C2

- total length of **42 km**
- **4** bridges, viaducts
- **13** overpasses and **15** underpasses

- Total length: **108 km**
- **2** lanes
- **30** overpasses
- **27** underpasses
- **14** bridges, viaducts



SERVICES:

Geotechnical investigation, studies, laboratory testing, preliminary and lead design, sight support as built drawings, supervision



TOTAL PROJECT VALUE

933 MEUR





Railway Line Škrljevo-Rijeka- Jurdani-Šapjane

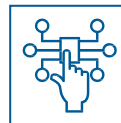
2016 – ONGOING



DESCRIPTION:

Reconstruction of existing track and construction of second track on railway line Škrljevo - Rijeka - Jurdani - Šapjane

- Total length of **27.5 km**
- maximum speed of **80km/h**
- **3** tunnels
- **3** large viaducts or bridges
- numerous overpasses & underpasses
- **70%** of the route passes through the city tissue



SERVICES:

Feasibility study, environmental impact assessment, preliminary and main design



TOTAL PROJECT VALUE

360 MEUR





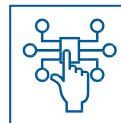
Four Seasons Dubrovnik

2016 – ONGOING



DESCRIPTION:

Kupari location is the inspiration for transforming the 16ha complex into a unique tourist destination. In addition to the reconstructed Hotel Grand, the new hotel, residences and villas will offer guests a stay in contemporary spaces blended into an authentic Mediterranean ambience.



SERVICES:

Project management and design services (structure, geotechnical, geodesy, environmental, traffic, laboratory testing, building physics)



TOTAL PROJECT VALUE

More than 150 MEUR





Nuclear Power Plant Krško

2015 – ONGOING



DESCRIPTION:

Rehabilitation and protection of concrete structures in NPP Krško total capacity: **688 MW**

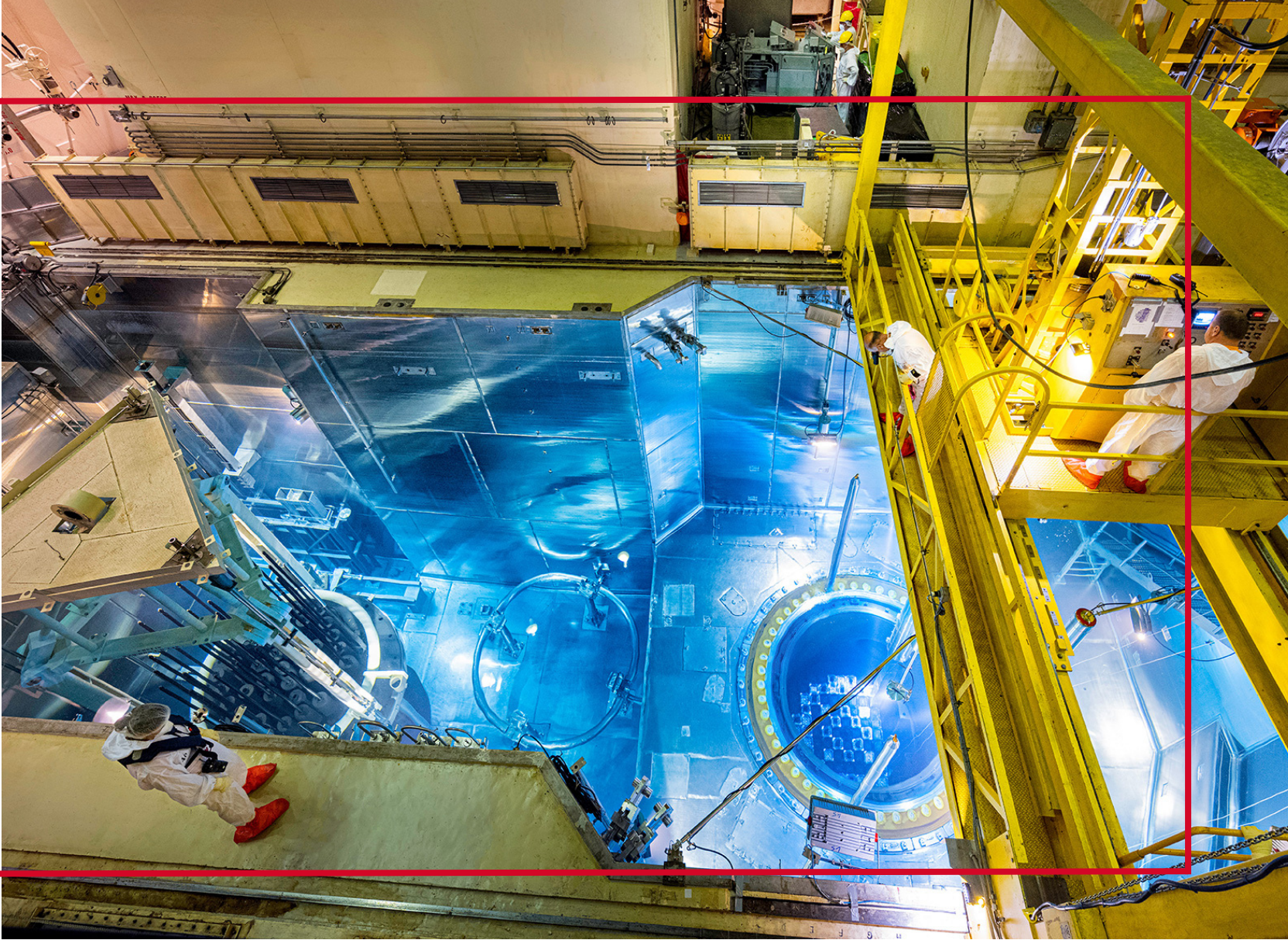
→ Surveying works and cooling tower remediation works **CT2**, investigation works, technical supervision and topographic supervision of structures, situation assessment and development of a tower remediation study **CT3**, inspection of condition and preparation of remediation study **CT1**

→ Construction of Bunker Building 2
→ Construction of Spent Fuel Dry Storage Building



SERVICES:

Construction supervision and material testing services, technical inspection



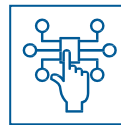
Wind Farm Selace

KOSOVO 2020–2022



DESCRIPTION:

→ Total capacity: 27 turbines x
3.8 MW



SERVICES:

Services of Authorized
Construction Manager and
Consulting services
Technical supervision



CLIENT:

General Electric Wind
Energy GmbH (Germany)



TOTAL PROJECT VALUE

170 MEUR





Zagreb International Airport

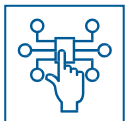
CROATIA 2013–2016



DESCRIPTION:

New passenger terminal of the international airport „Franjo Tuđman” in Zagreb was successfully completed in 2016, which provided Zagreb the opportunity of connecting with a significantly higher number of worldwide destinations and the possibility to receive more passengers in air traffic. In terms of form and function, we can distinguish three distinctive wings

or units in the layout of the new passenger terminal: the main building and linear structures of the piers to the left and right. It has a surface area of **65.000 m²** and can accommodate **5 million** passengers per year.



SERVICES:

Development of preliminary, detailed and working designs. Award winning conceptual design at international competition.




TOTAL PROJECT VALUE


236 MEUR





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