

THYSSEN SCHACHTBAU GROUP PROJECTS IN RUSSIA AND THE EAEU

TABLE OF CONTENTS

| | |
|--|-----------|
| Russia is our future | 03 |
| Geography of projects | 04 |
| Project 1 Project: Driving horizontal workings in difficult geological conditions for Donskoy GOK (Mining and Processing Plant) | 06 |
| Project 2 Drivage and walling of ultra-deep shafts beyond the Arctic Circle | 08 |
| Project 3 Drivage of two shafts by means of the freezing method for potash salt mining | 10 |
| Project 4 Freezing plant for the Gremyachinsky mine | 12 |
| Project 5 Joint venture for geological exploration of potassium and phosphate deposits | 14 |
| Project 6 Supply of mine lifting equipment to the Republic of Belarus | 15 |
| Partnership with SCHNEIDER GROUP | 16 |
| THYSSEN SCHACHTBAU HOLDING GMBH | 18 |

RUSSIA IS OUR FUTURE

Based in Mülheim an der Ruhr in Germany, the history of THYSSEN SCHACHTBAU GMBH goes back over 150 years and has its origins in the coal-mining traditions of the Ruhr area.

Today, our group of companies is the global market leader in providing comprehensive support for various areas of the mining industry. It is unsurprising that Russia, the largest country in the world with rich mineral deposits, is in our field of interest. Our professional and experienced employees implement ambitious projects in difficult geological and climatic conditions, including in the Far North.

Many years of engineering experience and technical know-how make THYSSEN SCHACHTBAU GMBH a reliable partner and contractor for iconic national and international projects. Since November 2007, the group has been cooperating with Russian enterprises. Its very first project in Russia, which involved the construction of the two deepest mine shafts on the Eurasian continent in the city of Norilsk, is the jewel in the group's project portfolio.



To achieve its goals, THYSSEN SCHACHTBAU GMBH takes a socially-oriented approach that benefits its customers, suppliers and subcontractors, as well as strict adherence to regulations in the field of health and safety and environmental protection.

The most important companies directly or indirectly owned by the concern are: THYSSEN SCHACHTBAU GMBH; Thyssen Mining Construction East OOO; TOO "SCHACHTBAU Kasachstan"; service company TS Technologie + Service GmbH; OLKO-Maschinentechnik GmbH, manufacturer of specialized equipment for mining construction work; and Thyssen Schachtbau EuroChem Drilling, a joint venture with EuroChem.

With an extensive portfolio of businesses, the group offers clients turnkey mining and construction work, including necessary equipment and machinery, and creates optimal conditions for managing the quality, timing and efficiency of the construction process and its subsequent operations.

«Our own know-how, innovative technologies individually adapted to each project, and reliability in adhering to quality standards and deadlines in strict accordance with the project plan are the strongest points of THYSSEN SCHACHTBAU».

Bw. Markus Beermann, Manager at THYSSEN SCHACHTBAU GMBH and OLKO-Maschinentechnik GmbH

GEOGRAPHY OF PROJECTS



CITY OF MINSK, REPUBLIC OF BELARUS

For “Slavkali”

Development and supply of mine winding plants for an individual project



CITY OF KOTELNIKOVO, VOLGOGRAD REGION,
RUSSIAN FEDERATION

Thyssen Schachtbau EuroChem Drilling

Joint venture for geological exploration of potassium and phosphate deposits



CITY OF KOTELNIKOVO, VOLGOGRAD REGION,
RUSSIAN FEDERATION

For Limited Liability Company “EuroChem”

Freezing plant for the Gremyachinsky mine

CITY OF TALNAKH, NORILSK INDUSTRIAL REGION,
RUSSIAN FEDERATION

For Open Joint-Stock Society "GMK Norilsk Nickel"

Sinking operations and walling in super-deep mine
shafts beyond the Arctic Circle



CITY OF SOLIKAMSK, PERM TERRITORY,
RUSSIAN FEDERATION

For Public Joint-Stock Society "Uralkali"

Sinking of two shafts by means of the freezing
method



CITY OF KHROMTAU,
REPUBLIC OF KAZAKHSTAN

For TNK Kazchrome

Drifting operation in difficult geological conditions



PROJECT: DRIVING HORIZONTAL WORKINGS IN DIFFICULT GEOLOGICAL CONDITIONS FOR DONSKOY GOK

ABOUT THE PROJECT

CUSTOMER: TNK Kazchrome

LOCATION:
City of Khromtau, Republic of Kazakhstan

PROJECT GOAL:
Increasing the annual production of chrome ore at the mines «Molodyozhnaya» and «Decade of Independence of Kazakhstan» from 3.7 million tons to 6 million tons by 2021

PROJECT START: 2013

METHOD OF IMPLEMENTATION:
Increasing the network of horizontal workings up to 12km

TECHNOLOGY:
Mechanized drill and blast tunneling method

■ Requirements for drivage technology

The rocks of the mountain massif – gabbro and amphibolite – are interspersed with a serpentinite complex of peridotite of varying degrees of fracturing, from medium to strong, that represents a highly unstable band. In this regard, special requirements are imposed on the technology of drivage, demanding high safety and speed. Preference was given to a mechanized drill and blast tunneling method, in order to quickly respond to changing rock conditions. To implement this project, a combined concept was chosen, providing for the construction of braced arches, fiber-reinforced sprayed concrete and roof bolting. The equipment fleet was selected so that the dimensions of the machines corresponded to the relatively small cross-section of the roadway equal to 14.8m².

Due to the high rates of drivage, pumps and concrete mixing plants were constantly subjected to almost maximum loads, which led to significant wear and tear of the machines. This problem was solved with the

purchase of two additional concrete mixers and one P 750 type sprayed concrete pump from Putzmeister.

It was thus possible to halve the time required to apply one stope of sprayed concrete and to thereby significantly accelerate the pace of support erection. Another optimization measure was the transition from steel fiber to polymer fiber in the composition of sprayed concrete. This resulted in longer maintenance intervals and less wear and tear in concrete pumps.

■ Local ventilation of horizontal excavation

Providing fresh air for the entire tunnel was another major challenge for the project. Since there were no interconnections with other workings in a dead-end mine, it was necessary to develop a concept of partial ventilation. After careful checks and measurements, an optimal ventilation scheme was developed in cooperation with CFT. A particular difficulty arose because the entire production shaft had to be provided with local ventilation before being connected with the ventilation shaft. As a result, it was decided that the used air from the entire tunnel section should be discharged through double ventilation ducts into the outgoing air stream with the help of exhaust fans located as close to the work site as possible. In order to implement the plan, the flow of clean air had to be accelerated using additional fans to ensure effective removal of gaseous explosion products from the bottom.

■ Connection of the production and ventilation shafts after 3 years

Throughout three years of drivage work, the main task was to achieve the first goal of this stage: connecting the production shaft and the ventilation shaft as quickly as possible on the horizon of -480m, thereby significantly improving the supply of fresh air across the entire horizon.

3100 meters were drilled in this project stage. In the first 800m, the conditions of the rock mass were of



medium difficulty. Further, the drivage was carried out in a heavily disturbed rock massif. It became a very difficult task to complete drivage between the two ore bodies on a construction site with a length of 600m. The potential for crushed rock falls along the contour in this section was prevented by means of the advanced support provided by the injection of self-drilling anchors in the roof area. After driving the next 1700m in conditions of extremely variable lithology, it turned out to be possible to achieve a crossover with a ventilation shaft.

■ High rates of drivage in a complex rock mass

After successfully connecting the shafts, the roadway drivage was carried out in a southern direction from the «ore deposit contour». In July 2017, the mark of 4,000m was exceeded. The main factor limiting the drivage rate was not the drivage technology, but rather the shaft through which the rock was delivered to the top.

At the horizon of -480m (depth of approximately 900m), the customer plans to implement a total of 12km of horizontal mine workings. In addition, one more production horizon below the -560 m mark will facilitate further exploration work.



Shotcrete the mine face

DRIVAGE AND WALLING OF ULTRA-DEEP SHAFTS BEYOND THE ARCTIC CIRCLE

ABOUT THE PROJECT

CUSTOMER:

Open Joint-Stock Society "GMK Norilsk Nickel"

LOCATION:

City of Talnakh, Norilsk industrial region, Russian Federation

PROJECT GOAL:

Cost-effective opening of mineral deposits with occurrence depth up to 2km

COMMISSIONING: 2019

INNOVATION:

Step-by-step movement» sinking platform to remove the restriction on platform weight, enabling drivage of extra deep shafts

METHOD:

Drilling and blasting operations using a complex solution that provides the ability to drill blast holes up to 5m deep

PROJECT COST: 950 million euros

The construction of two mine shafts, VS-10 and SKS-1, is part of a project that aims to develop the very rich ore deposits of the Verkhnyaya and Glubokaya deposits of the Skalistaya mine at the Komsomolsky mine, operated by Open Joint-Stock Society "GMK Norilsk Nickel".

■ Specific features of construction

Shafts are constructed with a clear diameter of 9m from the surface and up to a final depth of 2056.5m. The VS-10 ventilation shaft is an air exhaust shaft designed for the release of rock with a volume of up to 240 thousand tons per year from gallery driving, enabling the exit of people in case of an accident and the descent and ascent of large equipment and materials.

In accordance with safety requirements and a commitment to employ the best technological solutions, the VS-10 shaft is equipped with two lifting units: a skip unit for the release of rock and a cage that allows the emergency exit of people and descent of materials. In the upper part of the shaft, down to a depth of -138.0m in the permafrost area, the permanent support of the shaft is made with cast-iron tubing. The rest of the shaft is secured with concrete lining.

The SKS-1 shaft is the main production shaft, and is also equipped with the skip lifting unit and the cage lifting unit. In line with project targets, the skip hoisting mechanism should provide a capacity of 1.5 million tons per year.

The construction of both shafts was accomplished using virtually the same technology: namely, by means of drilling and blasting operations using a 6-carriage shaft drilling complex, which provides the ability to drill holes up to 5m deep.

■ Platform stepping in the shaft

Drivage of both shafts was carried out using a highly mechanized 7-floor sinking platform, which is the «heart» of the entire drivage process. This platform's main feature is that it does not hang on the ropes of the shelf winches, but is self-supporting. It rests on entry blocks of the concrete lining with a height of 4.5m, and is able to move along the shaft using a step method with support on the concrete lining.

This made it possible to bypass the limitation on platform weight with attached equipment and the ultimate strength of the ropes with which it is usually attached. It also solved the problem of high deformation values immediately after the massif is exposed, which makes it undesirable to erect a permanent lining at once.

In the shafts below the level of technical waste, temporary lining was used, which consisted, depending on geological conditions, of a combination of anchors, mesh and sprayed concrete. Fiber-reinforced concrete was deployed as a permanent lining. The drivage concept provides for the erection of a permanent fiber-concrete lining from the platform almost independently of the work performed at the wellbore. This circumstance en-



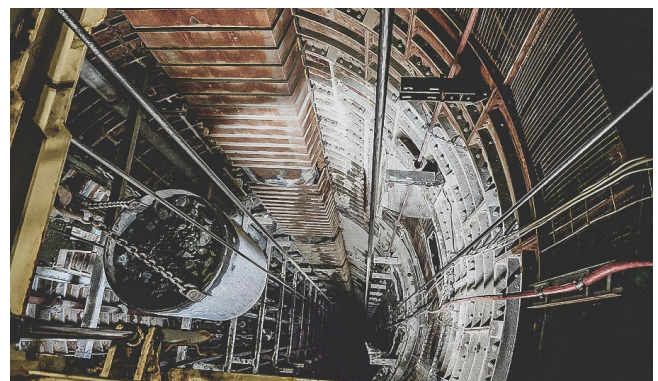
abled operators to significantly reduce work downtime in the shaft due to the maintenance and repair of concrete equipment or tunneling equipment. The shafts are reinforced in parallel with drive operations.

Conclusion

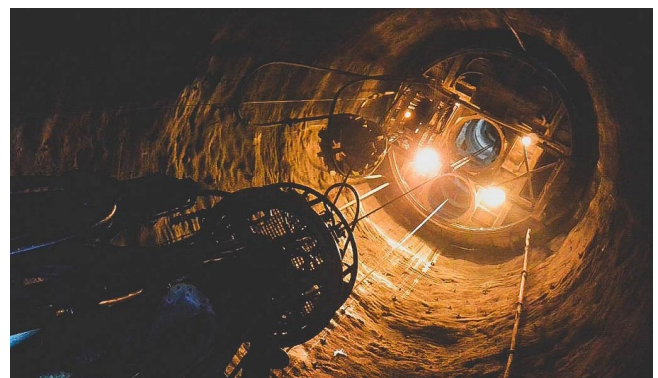
The rapidly changing economic situation and unstable prices for mineral resources impose strict requirements on the timing of the construction of mining facilities. The speed of excavation and erection work is of great importance. Every month by which the commencement of ore mining may be brought closer brings the customer a profit of tens of millions of euros.

In contrast with horizontal drive, the maximum speed of work during the construction of shafts is achieved by means of the parallelization of all operations while observing safety measures and work technology. All processes should be linked together like gears of a single mechanism, minimizing downtime and buffer time.

Every year, the rate of drive of 500m to 600m was accomplished, resulting in a finished and fully lined shaft with a clear diameter of 9m and installed reinforcement.



Lifting the waste rock, ventilation shaft VS-10



Lowering the drilling rig for drilling blast holes, SKS-1

DRIVAGE OF TWO SHAFTS BY MEANS OF THE FREEZING METHOD FOR POTASH SALT MINING

ABOUT THE PROJECT

CUSTOMER: Public Joint-Stock Society «Uralkali»

LOCATION:

City of Solikamsk, Perm Territory, Russian Federation

PROJECT GOAL:

Construction of two mine shafts within the shortest possible time in the difficult mining and geological conditions of the Verkhnekamskoye potassium-magnesium salts deposit

PROJECT START: 2015

COMMISSIONING: 2020

METHOD:

Drivage by means of the rock freezing method using permanent pit-head frames

■ Design and commencement of the construction of two new shafts for the SKRU-2 mine

Due to the extremely tight timeframe set by the Public Joint-Stock Society «Uralkali» for the project, THYSSEN SCHACHTBAU decided to start the design work concurrently with contract negotiations. Along with the requirements for onshore preparatory work, such as facilities for the shaft construction sites and infrastructure preparation, the main parameters of both shafts were determined.

Work in the territory of the future mine began immediately after the signing of the contract. A year later, in November 2016, freezing holes were drilled for the first shaft. Subsequent work in the territory of the industrial site advanced so rapidly that by January 2017, 14 months after the contract was awarded, it was possible to confirm the start of drivage operations – a success for a project involving shaft drivage by means of the freezing method.

The collapse of the earth's surface near the SKRU-2 mine in 2014 threatened a complete cessation of production at that mine. The Public Joint-Stock Society «Uralkali» decided to construct, as soon as possible, two new shafts south of the production site at SKRU-2.

As a result of the tender, the contract for the construction of the shafts was transferred to THYSSEN SCHACHTBAU, who convinced the customer with their technical concept and flexibility in negotiating the contract terms and conditions.

■ Pilot holes

Before the start of the project, THYSSEN SCHACHTBAU drilled two pilot holes. The extracted cores were examined at the Perm Scientific Research Institute «VNII Galurgiya». The main parameters of the project in terms of drivage and field development were determined on the basis of these laboratory studies.





Parameters of vertical shafts:

Shaft No. 1

The skip shaft is designed to deliver sylvinite ore to the surface, to supply fresh air to the mine and to supply filling material through pipelines to the mine.

The drivage required the drilling of 44 freezing wells, each 177m deep, and 4 pilot thermal wells, each 179m deep.

Shaft No. 2

The cage shaft is designed for the ascent and descent of personnel, materials and equipment.

The drivage required the drilling of 44 freezing wells, each 169m deep, and 4 pilot thermal wells, each 171m deep.



Work progress on the skip shaft

FREEZING PLANT FOR THE GREMYACHINSKY MINE

ABOUT THE PROJECT

CUSTOMER: Limited Liability Company «EuroChem»

LOCATION:

City of Kotelnikovo, Volgograd region,
Russian Federation

PROJECT GOAL:

Drivage to a depth of 820m in unstable rocks
and aquifers

METHOD:

Rock freezing method

INNOVATION:

Simultaneous drivage of three shafts
to a depth of 820m

The construction of a shaft using the rock freezing method at the Gremyachinskoye field near the city of Kotelnikovo in the southern part of the Volgograd region was in many respects an extremely difficult engineering and technical task.

In a unique aspect of the project to drill three shafts, each with a freezing depth of up to 820 m, the method of freezing rocks to such a great depth was applied simultaneously on all three shafts.

■ How the project started

From the beginning of 2010 to the beginning of 2012, THYSSEN SCHACHTBAU successfully froze the rocks for Skip shaft No. 1 at the Gremyachinsky mine to the required depth of 520m according to available knowledge and the most appropriate approach at that time. Later, following new hydrogeological studies, new

aquifers were revealed in the rock mass at a depth below 520m. In this situation, it was necessary to expand the freezing plant of Skip shaft No. 1 in order to waterproof and stabilize the enclosing aquifers at a depth of 520m to 820m. A second freezing circuit was created around Skip shaft No. 1, consisting of 44 freezing wells, and was commissioned in July 2013. Since July 2013, the rock mass of all three shafts of the Gremyachinsky Mining and Processing Plant has been frozen simultaneously to a depth of 820m.

■ Technical specifications of the project

In order to service the three shafts, the total installed capacity of the freezing plant was increased to 10.5MW. This corresponds to the average electricity consumption of approximately 18,000 households of four people each. At the beginning of the project, the freezing plant consisted of only ten freezers. Before the commissioning of the next two shafts, a new freezing station was installed with nine additional freezers.

During the maximum load period, 28 centrifugal pumps deliver 1500m³ of refrigerant at a pressure of 16 bar and with a flow rate of 2,100m³/hour through the pipeline system, taking the required amount of heat from the rock massif in order to ensure the formation and maintenance of a solid, reliable and durable ice-rock cylinder. The total length of onshore supply pipelines is about 1.5km. The length of the freezing pipes installed in the rock massif totals about 120km. The ice-rock cylinder that emerges from these pipes protects unsecured sections of the shaft from collapses during drivage and serves as waterproofing from numerous water sources. The geological formations subject to freezing are diverse and changeable. In the geological lithological sequence, there are zones with various types of loose rocks, such as sands, and there are also sections that contain stable hard rocks. Particularly critical are rocks with clay minerals, which tend to swelling and significant plasticization upon contact with water. They can pose serious problems for miners. Freezing helps to solve, among other issues, this extremely critical challenge: stabilizing fragile rocks and carrying out drivage.



Observation and control

Using fiber optic technology, continuous temperature profiles are created along the depth that is being frozen in a total of twelve pilot thermal wells. These allow direct observation of the temperature of the rock mass and can detect the specific effect of heat coming from inside the shaft (for example, in response to ventilation or the heat of concrete hydration). With the help of temperature measurements, it is also possible to localize impacts that originate in the rock massif, such as groundwater flows.

With the use of THYSSEN SCHACHTBAU's modern software, it is possible to visualize, consider and solve, even the most specific and complex issues associated with freezing the rock mass. In this regard, temperature changes in various rock horizons are of particular interest. Two-dimensional and three-dimensional digital models are generated on the basis of the actual distance between the freezing columns and the data of temperature measurements around the shafts.

All operating parameters of the complex plant, which has been modified and enlarged during the operation,

are continuously visualized and monitored. The team of THYSSEN SCHACHTBAU specialists continuously maintains the plant twenty-four hours a day on site, ensuring its reliable and trouble-free operation.



Ground freezing plant complex

JOINT VENTURE FOR GEOLOGICAL EXPLORATION OF POTASSIUM AND PHOSPHATE DEPOSITS

ABOUT THE PROJECT

COMPANY:

Thyssen Schachtbau EuroChem Drilling

LOCATION:

City of Kotelnikovo, Volgograd region, Russian Federation

PURPOSE OF CREATION:

Geological exploration of potash deposits

ESTABLISHED: 2015

In 2015, the Joint-Stock Society "MKhK EUROCHEM" and THYSSEN SCHACHTBAU GMBH established a Russian joint venture under the name of Thyssen Schachtbau EuroChem Drilling (abbreviated to "TEB").

The main driver of the creation of a joint drilling venture was the lack of technology for the geological exploration of potash deposits.

EuroChem is one of the leading producers of mineral fertilizers on the Russian market, and the world's fourth

largest producer of the full range of mineral fertilizers (phosphorus, potash, nitrogen).

The creation of Thyssen Schachtbau EuroChem Drilling helps EuroChem build long-term relationships with THYSSEN SCHACHTBAU partners and reduce price risks. For THYSSEN SCHACHTBAU GMBH, this enterprise provides an opportunity for a promising presence in the Russian Federation drilling market in the next decade. The projected annual volume of geological exploratory drilling is over 10,000 running meters.

Drilling services are provided on a turnkey basis and include all necessary preparatory operations for the arrangement of the drilling site, as well as subsequent remediation work.

The main projects are likely to be drilling projects in fields owned by EuroChem in the area of the village of Perelyub (West-Perelyubsky and East-Perelyubsky sites) and the city of Kotelnikovo (Gremyachinskoye field).

Thyssen Schachtbau EuroChem Drilling, headquartered in the city of Kotelnikovo in the south of the Volgograd region, currently has 120 employees and four PRAKLA RB50 units.



SUPPLY OF MINE LIFTING EQUIPMENT TO THE REPUBLIC OF BELARUS

ABOUT THE PROJECT

COMPANY: «Slavkali»

LOCATION:

City of Minsk, Republic of Belarus

PROJECT GOAL:

Development and supply of mine lifting equipment for an individual project

DELIVERY YEAR: 2021

OLKO-MASCHINENTECHNIK GMBH, together with its parent company THYSSSEN SCHACHTBAU GMBH, supplied three mine lifting units to the Slavkali enterprise based in the Republic of Belarus. The lifting unit for the auxiliary shaft will be used to safely move personnel and equipment, and the two lifting units for the production shaft will be used to transport rock. In addition, the project delivery includes winches, cable drums, conveyors, suspension gear for the cage, loading and unloading mechanisms and electrical equipment including hardware, automatic equipment and signaling equipment.

Three Blair double drum lifting machines are the primary pieces of equipment used in the project. These are not just ordinary standard models. Equipment of increased capacity was developed specifically for the Slavkali project, taking into account the individual requirements of the customer. For OLKO-MASCHINENTECHNIK GMBH, despite 30 years of experience involving complex automated mechanisms, this project stands out as a special achievement. The equipment for the auxiliary borehole, which has a diameter of 7m, is today one of the largest lifting machines in the world. Half of the drum weighs more than 50 tons and the weight of the main shaft, which is 12m in length, exceeds 70 tons.

The logistics of the project are extremely complex, requiring the equipment to be delivered to the construction site two hours' drive south of Minsk. Equipment for one auxiliary well was shipped using 65 trucks, and delivery took over two months. The fact that large components can only be transported as heavy loads made the task more difficult.

OLKO-MASCHINENTECHNIK GMBH is currently engaged in assembling and commissioning the equipment. The company's specialists coordinate the assembly work on site. During the commissioning, OLKO cooperates with Siemens AG, which fulfills orders for the supply of electrical equipment to the facility.



PARTNERSHIP WITH SCHNEIDER GROUP – CONTRIBUTING TO SUCCESS

More than 40 SCHNEIDER GROUP employees complement the THYSSEN SCHACHTBAU team. Since 2007, SCHNEIDER GROUP has provided high-quality bookkeeping, tax accounting and legal support, 24/7/365.

SCHNEIDER GROUP is also responsible for payroll calculation for 1000+ employees, preparation of reports, implementation of automation projects and interaction with government agencies on behalf of the customer.

■ Centralized accounting

THYSSEN SCHACHTBAU's complex holding structure, with headquarters in Germany and offices and individual construction sites in different countries and regions of Russia, presents a non-trivial task of centralizing and organizing bookkeeping and tax accounting. SCHNEIDER GROUP's specialists streamline accounting flows and procedures, ensure compliance with legal requirements in each region, prepare necessary reports and organize the prompt transfer of data to the head office, translating transactions from 1C to SAP.

■ Payroll calculation and successful passing of inspections

Because THYSSEN SCHACHTBAU has a large number of employees and special working conditions (construction, rotational work, work in the Far North, high-risk work), the group must take a responsible approach to organizing personnel records and health and safety. SCHNEIDER GROUP's specialists ensure precision and accuracy in calculating wages. In 2020, the need to pay for downtime and non-working days during the Covid-19 pandemic made the payroll process more complicated. Due to the special conditions many employees work under, THYSSEN SCHACHTBAU's factories are often subject to personnel inspections. Due to the well-structured processes and coordination of THYS-

SEN SCHACHTBAU's Human Resources Department and SCHNEIDER GROUP's specialists, it is possible to promptly respond to changes in legal requirements and successfully undergo regulatory inspections.

■ Accounting automation

The group's complex international business structure justifies the simultaneous use of two automation systems (SAP and 1C). This requires a thorough study of data transfer processes from both a technical and accounting point of view. For convenience and cost optimization, SCHNEIDER GROUP's team provides hosting and administration of 1C databases that are used by THYSSEN SCHACHTBAU's Russian legal entities. Additionally, 1C has implemented a mechanism for the automatic translation of transactions in SAP, reducing labor costs.

Industry-specific automation solutions developed over 14 years make it easy to connect new projects and scale existing projects, providing cost savings of up to 30% compared with recruiting employees for each project.

■ Tax optimization

A successful business often attracts the attention of the fiscal authorities. In partnership with SCHNEIDER GROUP, the company has not only reduced its tax base, confirming its mechanism for calculating the financial result of projects with the Ministry of Finance, but has also proved full legal compliance by successfully passing tax audits.

SCHNEIDER GROUP's specialists constantly monitor THYSSEN SCHACHTBAU's tax situation and offer opportunities for tax optimization on a quarterly basis.

«SCHNEIDER GROUP provides a full-fledged back office staff for THYSSEN SCHACHTBAU to support projects associated with the EAEU, ensuring high-quality bookkeeping, tax accounting, payroll calculation and report preparation. As a partner, SCHNEIDER GROUP helps us to choose optimal methodologies and disseminate best practices to all construction sites.»

Grigori Galuschko, Head of representative office
THYSSEN SCHACHTBAU GMBH Norilsk



THYSSEN SCHACHTBAU HOLDING GMBH

The THYSSEN SCHACHTBAU HOLDING GMBH group of companies combines the functions of central procurement and logistics, financial management and reporting management, and includes personnel, health and safety, IT, legal and public relations, departments, as well as a fleet of trucks and specialized equipment.

The total turnover of the concern is about one and a half billion euros, and the number of employees exceeds 6,500.



THYSSEN SCHACHTBAU GMBH

THYSSEN SCHACHTBAU GMBH, owned by THYSSEN SCHACHTBAU HOLDING GMBH, a leading global mining company for the past 150 years, offers a full range of horizontal and vertical mining services. Subsidiaries of the company operate in the areas of industrial equipment and mechanical engineering, as well as in the construction industry where they represent all types of high-rise, underground and road construction, railing, underground operations, demolition operations and turnkey interior finishing of structures.

THYSSEN MINING CONSTRUCTION EAST

The subsidiary company THYSSEN SCHACHTBAU HOLDING GMBH was created to supply equipment to Russia. Nowadays, the company independently carries out numerous mining and construction operations. This field of activity will constantly expand in the coming years.

TOO SCHACHTBAU Kasachstan

A joint venture with SCHACHTBAU NORDHAUSEN GmbH (50% share of each) is seeking orders and projects in the Kazakhstan market.

TS TECHNOLOGIE + SERVICE GMBH

TS Technologie + Service GmbH is service-oriented. Its portfolio includes engineering services, complex welding operations, machining operations, assembly in buildings, installation, repairs, as well as technical maintenance and dismantling of gates, cranes, and electrotechnical facilities. Thanks to a powerful equipment fleet occupying an industrial area of about 7600m², with lifting capacity of cranes of up to 100 tons, it is possible to manufacture bulky and heavy structures.

OLKO-MASCHINENTECHNIK GMBH

OLKO-Maschinentechnik GmbH focuses on heavy mechanical engineering for mining and construction enterprises and on specialized mechanical engineering both in Germany and worldwide. The enterprise is a leader in the area of production of lifting machines and tunneling winches, as well as in technologies for the transportation of building materials.



