ENKA

BUSINESS CENTERS & HIGH RISES
INDUSTRIAL PLANTS
MALLS AND SHOPPING CENTERS
PUBLIC BUILDINGS
URBAN DEVELOPMENT
USA EMBASSY PROJECTS

55°44’49.6”N | 37°32’12.6”E

ENKA Naberezhnaya Tower, Moscow, Russia

BUILDING WORKS

SELECTED PROJECTS

55°43′56.1″N | 37°38′49.3″E

Riverside Towers, Moscow, Russian Federation

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BUSINESS CENTERS & HIGH RISES

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TAIF BUSINESS CENTER, TATARSTAN OF RUSSIAN FEDERATION

ESENTAI PARK COMPLEX, KAZAKHSTAN

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TSVETNOY MULTIFUNCTIONAL COMPLEX, RUSSIAN FEDERATION

WHITE SQUARE OFFICE CENTER, RUSSIAN FEDERATION

BUSINESS CENTERS & HIGH RISES

PROJECT DETAILS

LOCATION:
Kazan, Tatarstan/Russian Federation

OWNER / CLIENT:
TAIF PSC

PROJECT DURATION:
Apr 2017-June 2019

CONTRACT TYPE:
Lump Sum

CONTRACT VALUE:
US$ 173 Million

MAJOR QUANTITIES:
Total Gross Area - 51,714 m^2
Excavation - 49,328 m^3
Concrete - 29,641 m^3
Rebar Installation - 4,136 tons
Screed - 27,460 m^2
Parquet - 2,516 m^2
Marble (Floor) - 3,010 m^2
Ceramic Tiles (Floor) - 14,972 m^2
Façade - 16,104 m^2
Cable - 430,426 mt
Galvanized Ductwork-21,628 m^2
Sewage System - 8,782 mt
Water Supply System - 4,832 mt
Heating Equipment - 8,907 ea
Cooling System - 10,420 mt
Fire Fighting System - 26,730 mt

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:
259 days without incident, 482,013 man hour as of December 2017

PROJECT DESCRIPTION

The TAIF Business Centre Project is located in the heart of Kazan at no. 80 Pushkina Street, very close to the River Kazanka, the Kazan Kremlin, and various government buildings including the Presidential Palace. It has a total gross area of 51,714 m^2. There will be 22,910 m^2 of car park and 28,804 m^2 of office space with high quality internal architectural finishes and an aesthetic external glazed facade.

The project has eight storeys above ground level, rising to a height of 33.5 metres, and four storeys below ground level, with a depth of 15.0 metres. The building will have a reinforced concrete structure cast in-situ. The foundations, columns, beams and slabs will be formed of reinforced concrete, together with the walls around elevator shafts and staircases, using a conventional formwork system.

ENKA SCOPE OF SERVICES

ENKA is responsible for all of the following construction and installation works:

- earthworks (excavation, backfill),
- external utilities,
- reinforced concrete works,
- mechanical works,
- electrical works,
- architectural and facade works,
- vertical transportation,
- internal finishing including furniture, fixtures and equipment.

The contract was signed in January 2017 and the project is scheduled to be completed in 34 months of commencement.

PROJECT DETAILS

LOCATION:
Almaty, Kazakhstan

OWNER / CLIENT:
CAPITAL PARTNERS COMPANY
KUSA KKB-2 LLP

PROJECT DURATION:
Jan 2006-June 2009
June 2013-Sept 2014
(Esentai Park - Residence Buildings B and C, Complementary Works)

CONTRACT TYPE:
Lump Sum and Unit Rate

CONTRACT VALUE:
US$ 672 Million
(including US$ 80 Million for Esentai Park - Residence Buildings B and C, Complementary Works)

MAJOR QUANTITIES:
Concrete - 265,000 m^3
Rebar -68,500 ton
Earth Works - 240,000 m^3

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- Tower incl. JW Marriott Hotel with 175 rooms. – Total Area: 87,000 m^2 – (37+4 storey)
- 3 Residential Blocks - Total Area: 164,500 m^2 - (21+3 storey, each)
- Shopping Mall - Total Area: 104,000 m^2 - (2 below+4 above gr. floor)
- Fitness Centre - Total Area: 24,000 m^2 - (4+2 storey)

PROJECT DESCRIPTION

ENKA signed several contracts with Capital Partners for the construction of the Esentai Park Project, a construction located on the intersection of the Esentai River and Al-Farabi Boulevard, in Almaty, Kazakhstan. Esentai Park is an extremely unique project in central Asia. From the Esentai Park Building there are stunning views over the Alatau mountains and Almaty city. The Project, built as a smart building, has been designed and built to offer its residents a unique ambiance. The buildings have been constructed to withstand earthquakes measuring nine on the Richter scale. The interior materials used in the project have been selected from the most highly regarded European brands (including Bultaub, Gaggenau, Miele and Schoerghuber Spezialtueren).

ESENTAI TOWER

In January 2006, ENKA signed a contract with Capital Tower Development LLP for the construction of the A-class business center – Esentai Tower. The scope of the work included engineering, procurement and the construction of a shell and core for the 4+37 floor building. The building consists of an underground parking area, ballrooms, offices, a hotel and residences. The total construction area is 87,000 m^2 gross with a total height of 173 m, including four garage/basement floors. The office block is situated between the 4th and 14th floors with a total area of 19,000 m^2. The 15th, 16th, 26th, 35th and 36th floors are mezzanine and mechanical floors. A health club, including an indoor pool, is situated on the 17th floor. The hotel, including an executive floor, is situated between the 18th and 24th floors with a total area of 12,000 m^2. A restaurant and kitchen are situated on the 25th floor. The residence floors are between the 28th and 34th floors with a total area of 8,000 m^2. The 37th floor is the roof.

The ballroom facility next to the tower is 2,500 m^2 gross and rests on the underground four-level garage. The Tower building was completed as a shell and core in mid 2008 and its fitting out was completed in June, 2009. It is the tallest building in Almaty, incorporating several functions, such as parking, offices, a hotel, and executive service apartments.

ESENTAI RESIDENCE A

In July 2006, ENKA signed a contract with Esentai Residential LLP for the construction of the prestigious residential Esentai Residence A. The scope of the project included engineering, procurement and construction of a 3+21 floor building. The building consists of three underground levels for storage, utility and common areas for the owners of the residences. The underground levels consist of a mezzanine floor that connects to the pedestrian tunnel serving the Residences A, B & C. The interior work, equipment and furnishing are included in the scope of the project. The total construction area is 63,000 m^2 gross. The project was completed in December 2009.

ESENTAI RESIDENCE B & C

In March 2007, ENKA signed two contracts with Esentai Residential LLP for the construction of the prestigious residential Esentai Residence B and Esentai Residence C. The scope of the work included the Engineering, Procurement and Construction of a 2+21-floor building for each residence. The work also included the interior work, equipment and furnishing. The buildings comprise two underground levels for storage, utility and common areas for the owners of the residences. Total construction area is 89,000 m^2 gross.

As a result of financial problems on the part of Capital Partners Group, construction was suspended in 2008 for Residences B and C. In June 2013, ENKA agreed to a contract with KUSA KKB-2 LLP to complete the construction of Esentai Residences B and C. ENKA was responsible for the construction work, design development for the electrical and mechanical parts of the design (MEP), the elimination of the defects in the Residence B, Residence C and the common garage. Mobilization of the construction site began in June 2013 and the project was completed in December 2014. The peak number of personnel on site was 2,099 between June 2013 and December 2014.

ESENTAI SHOPPING MALL

In July 2006 and in March 2007, ENKA signed two contracts with the CP Retail Almaty Company LLP for the construction of the premium class trade center Esentai Mall. In terms of size, the building is 120m x 130m and consists of four below ground and four above ground levels with a height of 28.41 m and total construction area of 104,000 m^2. The project was completed in June 2009.

ESENTAI FITNESS

In July 2006, ENKA signed a contract with Fitness Development LLP for the construction of a 2+4 floor building, as shell and core. The building consists of two underground levels. The total gross construction area is 24,000 m^2 and the total height is 30.33 m, including two basement level floors. The project was completed in May 2009.

MOSCOW CITY PLOT 12 EURASIA TOWER

PROJECT DETAILS

LOCATION:
Moscow, Russian Federation

OWNER / CLIENT:
ZAO "Techinvest"

PROJECT DURATION:
Apr 2006-Dec 2013

CONTRACT TYPE:
Lump Sum-Turnkey

CONTRACT VALUE:
US$ 439 Million

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- The Eurasia Tower and Naberezhnaya Towers (Block C) both of which were constructed by ENKA, are the only operational high-rise steel structure buildings in the Russian Federation.
- The Eurasia Tower is one of the tallest (310m) high-rise buildings in Europe with 74 above ground and five underground floors.
- The steel frame of the Eurasia Tower consists of 2,300 columns and 9,000 beams and was fabricated by ENKA's subsidiary Çimtaş, utilizing seven CNC cutting and drilling machines and two robotic welding systems.

PROJECT DESCRIPTION

The Eurasia Tower, a Multifunctional Business Complex on Plot No. 12 of MIBC Moscow-City, is a high-rise building, consisting of A class offices and residential areas, with a total construction area of 210,000 m^2. Owned by TECHINVEST, the tower is located in the Moscow-City region on the Krasnopresnenskaya Embankment. The high-rise section has 74 floors, reaching a total height above ground of 302 m.

The Eurasia Tower is situated on a threetier podium in which there is dedicated space for entertainment, restaurants, and shops. Approximately 110,000 m^2 is reserved for office space with residential apartments occupying a further 22,000 m^2. The five underground floors are for technical premises and parking for more than 1,000 cars. The external design of the building is a combination of classical and modernist styles.

The 3,000 mm thick, 10,000 m^3 raft foundation under the tower, rests on 1,500 mm diameter piles 25 m in length, while 1,200 mm diameter piles 18 m in length are used elsewhere. Hot rolled profiles and plates, purchased from European steel mills, were fabricated at the Cimtas' Gemlik Works and transported to Moscow using river vessels. A self-climbing formwork system was utilized for casting the core structures.

During the construction of the Eurasia Tower, more than 29,000 tons of structural steel, 80,000 m^3 of reinforced concrete and 170,000 m^2 of metal decking was used.

The structural design of the Eurasia Tower was developed by collaborative work between the Thornton-Tomasetti Engineers, ENKA Design Office and Gorproekt.

The Eurasia Tower project with its completed MEP systems in the shell and core stage was handed over for operation in late 2013.

ENKA
MOSCOW CITY PLOT 12 EURASIA TOWER

UNIQUE CHALLENGES

- More than 10,000 m^3 concrete was casted continuously during foundation works within 72 hours.
- Transportation of massive steel sections to the construction site was only possible at night shifts due to traffic conditions in Moscow.
- Lifting of massive one-piece heavy equipment (55 tons in weight) to upper floors of the building.
- More than 56 tons of electrodes were used during welding works at location.
- The thickest steel plates used on column base for this work is 400 mm.
- The largest Build-up box column section was 750 x 750 with 230 mm thick plates.
- The torque capacity of every bolt used on the site was controlled and tested.
- The erection of steel outrigger columns, above the 200 m elevation (above the 50th floor), despite heavy wind and severe winter conditions (-40 Celsius).
- Erection work at high elevations reaching up to 300 m (74th floor)

ENKA SCOPE OF SERVICES

In main contract, ENKA`s scope of work consisted of procurement and construction. Following the award of shell and core works addendum contract, mechanical, electrical, roof insulation, limited architectural works and continue with the supply, installation and commissioning of lifts and escalators were additionally included in scope of works.

Major Quantities

Commodity	UoM	Total
Total Construction Area	m^2	210,000
Total Floors	ea	79
Total Height	m	310
Reinforced Concrete	m^3	80,000
Structural Steel	ton	29,000
Metal Decking	m^2	180,000
Total Used Bolts,Nuts & Washers	pcs	+800,000

HYATT REGENCY HOTEL, BUSINESS AND RESIDENTIAL CENTER

PROJECT DETAILS

LOCATION:
Dushanbe, Tajikistan

OWNER / CLIENT:
Gostgroup (formerly Russian Hotels)

PROJECT DURATION:
Mar 2006-Oct 2008

CONTRACT TYPE:
Lump Sum

CONTRACT VALUE:
US$ 117 Million

MAJOR QUANTITIES:

Hotel Construction Area:
38,000 m^2

Room Number:
221 ea of various type

Office and Residential Construction Area:
30,000 m^2

PROJECT DESCRIPTION

The hotel, owned by SOZIDANIE, is located in the Komsomolsky Park, on Ismailli Somoni Avenue, in Tajikistan's capital city of Dushanbe.

Providing a unique view of the man-made Komsomolsky Lake, the hotel project had a total construction area of 38,000 m^2. The first section of the building, housing the hotel's facilities, was low-rise with stone cladding. The second section was a Z-shaped 12-storey high-rise building and contained the guest rooms. These rooms are located on the 4^{th} to the 12^{th} floors and include 173 standard, 41 semi-luxury, and six deluxe bedrooms, as well as a presidential suite.

Located on the basement level and in addition to the kitchen, storage, laundry and dry cleaning facilities, is an underground car park.

Completed in August 2008 the hotel is equipped with cutting-edge technology and hosts meetings and conferences in its ballroom and seven exclusive halls, all of which are located on the first and second floors, where the swimming pool and spa are also situated.

The 30,000 m^2 Office and Residential Center follows the main boulevard that connects Dushanbe City to its airport. Its facade was designed to be multilayered in order to create a play of light and shadow through its six and 12 storey blocks, which transforms the center into a showcase of eye-catching architecture and engineering.

ENKA SCOPE OF SERVICES

ENKA signed design and build contracts for the 12-storey, Five-Star Hotel and the Dushanbe Office and Residential Center in March 2006 and June 2006, respectively.

Both buildings were designed as reinforced concrete structures with 1.2 m thick mat foundations; the office and residential center rests on 436 piles that ranged from 800 to 1000 mm in diameter.

An aluminum and glass panel system was used for the facades in both projects, which are self-sufficient buildings, equipped with their own water-storage tanks, heating systems, and generators.

The office and the residential center were completed and handed over in October 2008.

MOSCOW CITY PLOT 4 IMPERIA TOWER

PROJECT DESCRIPTION

The Imperia Tower, a Multifunctional Administrative Complex with apartments, is located in Moscow City on the Krasnopresnenskaya Embankment, just two kilometers from the Garden Ring. Moscow-City is intended as a pioneering model of 24-hour living urban development, which will integrate the historical environment of Moscow with A Class office buildings, residential buildings and hotels, as well as shopping malls and entertainment centers, all of which are equipped with the ultimate high technology to open a new window on the future.

The project comprises the construction of a multifunctional administrative complex with offices, apartments, hotels and underground floors with technical and parking facilities.

A well known US based company, NBBJ, carried out the design of the building but ENKA completed all the detailed design. The gross construction area for the first stage works is 218,450 m^2, comprising 60 floors above ground and five underground floors with 1,012 parking spaces.

The office floors are located on the 4^{th} to the 41^{st} floors, and the apartment floors from the 43^{rd} to the 58^{th} floors. Eight low-rise, nine mid-rise and thirteen high-rise elevators will provide easy access to all floors. The completed building provides 350 apartments, ranging from 75 to 220 m^2 two penthouse apartments offering splendid views of Moscow and the Kremlin Palace and 70,353 m^2 of leasable office space for premier class tenants. The project was completed during October 2011.

UNIQUE CHALLENGES

The façade of the Imperia Tower has an asymmetric design, which consists of curved members and unique connection details. During the execution of façade works, special installation methods were used.

The Imperial Tower is a multifunctional complex, which includes A Class offices, residences, hotel, retail areas and car park. Therefore satisfying all criteria and high standards of the building is a real challenge.

PROJECT DETAILS

LOCATION:
Moscow, Russian Federation

OWNER / CLIENT:
CJSC Flainer-City

PROJECT DURATION:
Feb 2006-Oct 2011

CONTRACT TYPE:
Lump Sum - Turnkey

CONTRACT VALUE:
US$ 310 Million

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- Unique and asymmetric design of Façade.
- Multifunctional Complex having total height of 239 m.

ENKA SCOPE OF SERVICES:

- Engineering
- Procurement
- Construction

MAJOR QUANTITIES:

Construction Area: 218,450 m^2
Total Aboveground Floors: 60
Maximum Height: 239 m
Reinforced Conc: 140,936 m^3
Structural Steel: 800 tons
Rebar: 31,043 tons
Façade: 59,000 m^2

MOSENKA OFFICE BUILDINGS

Total Floor Area: 44,000 m²

PROJECT DETAILS

LOCATION:
Moscow, Russian Federation

OWNER / CLIENT:
MOSENKA (ENKA & Moscow Municipality Joint Venture)

PROJECT DURATION:
Jul 1992-Dec 1995

CONTRACT TYPE:
Lump Sum

CONTRACT VALUE:
US$ 41 Million

PROJECT DESCRIPTION

In 1991, ENKA made the most of its good business relations in Russian Federation, as well as the country's steady economic progress, to found JSC Mosenka in Moscow with some Russian partners. This was the first real estate investment company to practice and provided western quality real estate services. ENKA now owns a 100% stake in Mosenka, developing and renting out office space, aimed at meeting Moscow's growing demand. Mosenka has reconstructed six historic buildings with a total construction area of 46,500 m² and converted them into modern office buildings, all of which are nearing rental capacity. Presently ENKA owns and operates 5 of these buildings; Mosenka 2,3,4,5 & 6; the tenants of which include well-known local and international companies, such as Lego, Sber bank, Air Liquide, Saipem, Roquette and Claas. Excluding subcontractors, the company employs 68 personnel and recorded a 2014 turnover of 22 Million US Dollars.

MOSENKA 1

Reconstruction and renovation of the existing five-storey Luxury Class Office Building.

MOSENKA 2

Reconstruction and renovation of the existing six-storey Luxury Class Office Building.

MOSENKA 3

Reconstruction of the eight-storey Luxury Class Office Building with basement garage.

MOSENKA 4

Design and construction of a modern business complex owned by Mosenka JV and rented or sold to foreign companies.

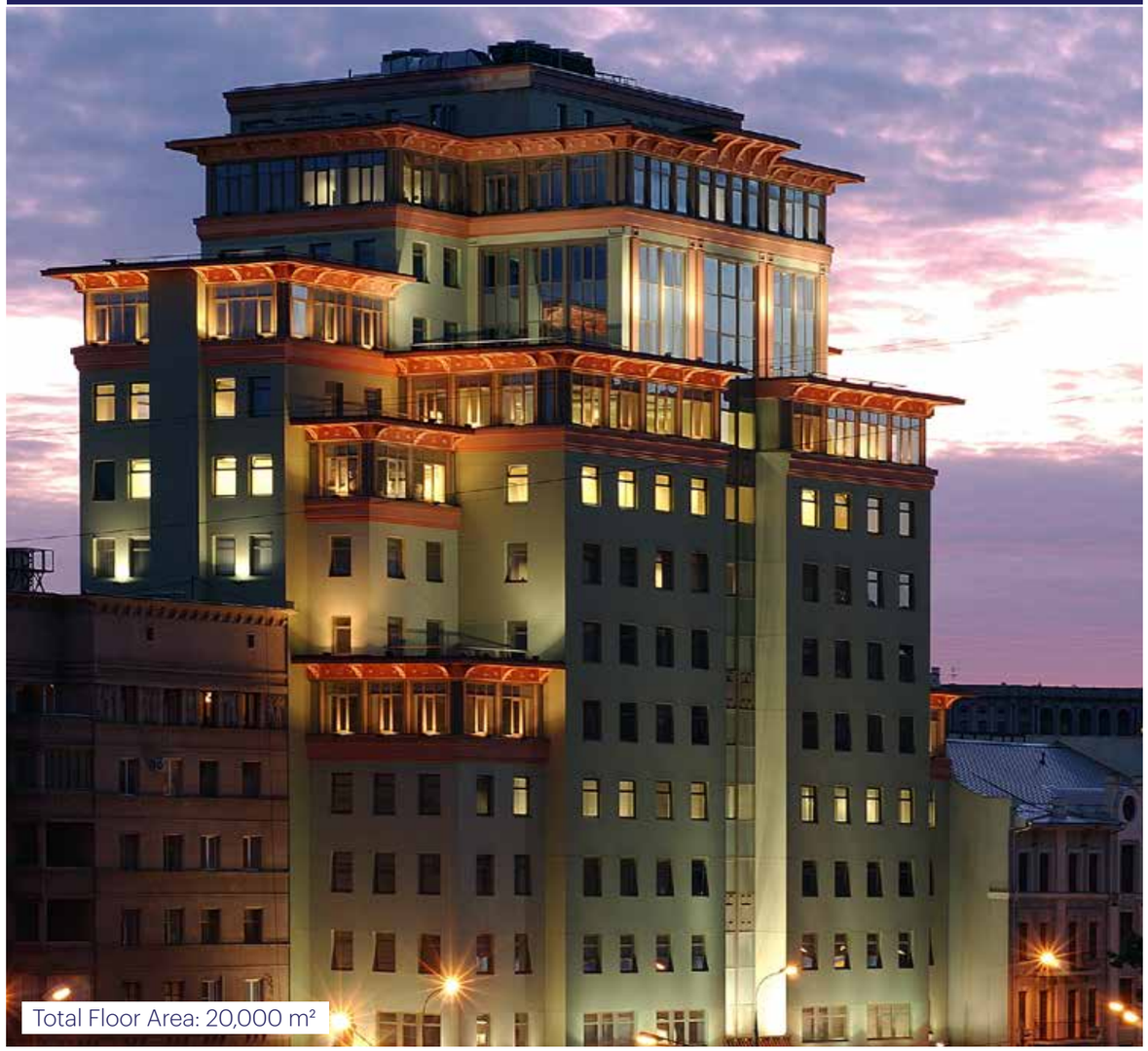
MOSENKA 5

Design, reconstruction and renovation of the existing four-storey and basement prerevolutionary Police and Fire Station to a Luxury Class Office Building.

MOSENKA 6

Design and construction of the four-storey Luxury Class Office Building with basement garage.

SADOVAYA PLAZA



Total Floor Area: 20,000 m²

PROJECT DESCRIPTION

Sadovaya Plaza is located on a 2,200 m² plot of land at the junction of Dolgorukovskaya Street and the Garden Ring in Moscow. The plaza is a 15-story office building with two levels of underground parking and has a total construction area of 20,000 m².

The building features a double-height lobby, four large-capacity high-speed lifts, individually controlled heating, ventilation and air-conditioning systems with ceiling-mounted fan coil units, a full sprinkler system, raised floors, building automation system, an access control system at the entrance to the building and security systems. The building has been fitted out in accordance with the tenants' requirements.

PROJECT DETAILS

LOCATION:
Moscow, Russian Federation

OWNER / CLIENT:
ENKA-Koray Joint Venture

PROJECT DURATION:
Mar 2001-Dec 2001

CONTRACT TYPE:
Lump Sum

ENKA SCOPE OF SERVICES:

- Procurement
- Construction

CONTRACT VALUE:
US$ 11 Million

NABEREZHNAYA TOWER

PROJECT DETAILS

LOCATION:
Moscow, Russian Federation

OWNER / CLIENT:
City Center Investment BV.

PROJECT DURATION:

Building Block A:
Aug 2003-Oct 2004

Building Block B:
July 2004-Nov 2005

Building Block C:
Jan 2005-Nov 2007

CONTRACT TYPE:
Turnkey

CONTRACT VALUE:

Building Block A:
US$ 42 Million

Building Block B:
US$ 68 Million

Building Block C:
US$ 196 Million

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- The Naberezhnaya Towers (Block C) and Eurasia Tower, both of which were constructed by ENKA, are the only operational high-rise steel structure buildings in the Russian Federation.
- A Class office building, 260m in height.

PROJECT DESCRIPTION

The Naberezhnaya Tower Project, an investment project developed entirely by ENKA, is located on 1,574 hectares of land in MIBC Moscow City, at the intersection of the Third Transport Ring and Krasnopresnenskaya Embankment, a region of the city that is rapidly emerging as Russia's new business capital. Prominently situated on the riverside, the buildings offer awe-inspiring panoramas of central Moscow across the Moscow River.

The contract was awarded in November 2003 and the project comprised two-phases, consisting of two buildings, 17 and 27 stories respectively, designated as A and B in Phase 1. The Tower, also referred to as Building C, is a 60-story skyscraper developed as Phase 2.

Building A was constructed within 12 months and completed in October 2004, whereas Building B was completed in November 2005 within a 20 month construction period.

The construction of Building C began in January 2005 and was completed by the fourth quarter of 2007. This 60-story structure is the crowning glory and final phase of three A Class office buildings, developed by ENKA as the largest real estate investment project in Moscow. The gross construction area of all three buildings is 265,500 m^2, whereas the whole complex has a total rentable area of 163,000 m^2.

The 60-story Building C soars 260 m above the ground and includes 5 sub-level floors, which together with the other two buildings, incorporates restaurants, cafes, shops, technical premises and car parks. In the buildings' design, apart from the dead and live loads and wind loads, which were taken into consideration in accordance with both Russian and European standards, additional tests, such as wind tunnel testing, were applied, so that systems for the buildings, such as those for the facade, could be determined accordingly.

All the buildings are equipped with state-of-the-art mechanical and electrical systems. The tower is furnished with a total of 28 elevators, consisting of eight low-rise, eight mid-rise and six high-rise passenger lifts with a speed of eight meter per second, as well as six fire and service lifts.

The Naberezhnaya Tower complex is operated by ENKA with 136 personnel for the leasing of offices, and includes the facility management of the buildings and acting as a contractor for fit-out works.

The occupancy rate of Naberezhnaya Tower stands at approximately 93%, making it the most fully occupied building in the business district.

The Naberezhnaya Tower is the most attractive office choice for any leading international or Russian business. Some of the leases to international tenants with business relations spanning more than a decade have even been extended for additional periods. Existing tenants include reputable corporations and blue chip companies.

Being one of the most prestigious business centers in Moscow, The Naberezhnaya Tower holds a commercial real estate award for the best Class-A business center.

UNIQUE CHALLENGES

- The Naberezhnaya Tower complex consists of three buildings and the construction of the Building B was undertaken while Building A was operational. Similarly, Building C was constructed while Buildings A and B were operational and occupied by tenants.
- All the buildings have shared retail and underground parking areas below them. Therefore special measures had to be taken in order not to disturb the operational buildings and utilize the retail and parking areas to the maximum extent.
- Due to the high density of ongoing constructions on other Moscow city plots, very detailed logistic and execution studies had to be carried out in and around the site, taking into account the building(s) that were operational and the high-rise under construction.

ENKA SCOPE OF SERVICES

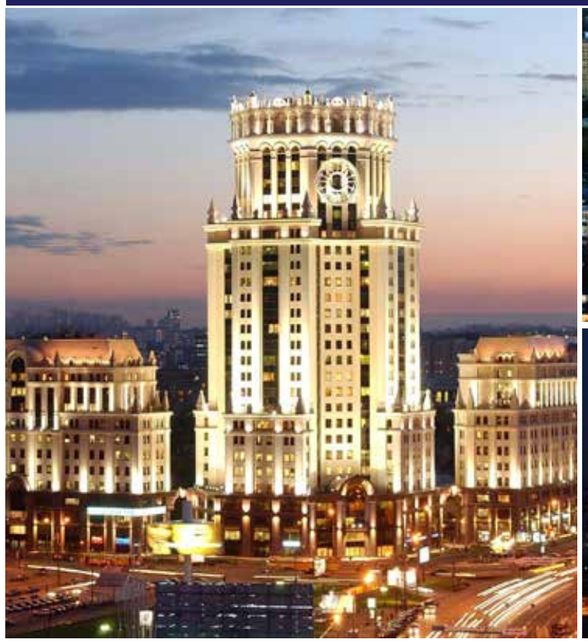
Naberezhnaya Tower is fully owned and developed by ENKA. The design of the complex belongs to RTKL & ENKA Architectural Office, while Thornton-Tomasetti Engineers & ENKA Design Office developed the structural engineering. ENKA self performed the engineering, procurement, and construction of the complex. In addition ENKA completed the fit-out for the office premises for various tenants, such as Oracle, KIT Finance, Lehman Brothers, Q-Tec, Symantec, Becton Dickinson, General Electric, American Planning, Standard Bank, Europolis, Medcore 2000, Regus, HSBC, Nestle, Servier and CGSH, located in Block C of Moscow City Plot 10 and the Office Building in Paveletskaya Square.

Major Quantities

Commodity	UoM	Total
Total Construction Area	m^2	266,500
Building A Total Floors	ea	17
Building b Total Floors	ea	27
Building C Total Floors	ea	60
Reinforced Concrete	m^3	149,200
Reinforcement Amount	ton	22,735
Structural Steel	ton	13,000
Metal Decking	m^2	101,050
Maximum Height	m	260

ENKA

PAVELETSKAYA SQUARE BUSINESS CENTER – A, B, C STAGE



PROJECT DETAILS

LOCATION:
Moscow, Russian Federation

OWNER / CLIENT:
ENKA İnşaat ve Sanayi A.Ş.

PROJECT DURATION:
Mar 1997-Mar 2003

CONTRACT TYPE:
Lump Sum-Turnkey

CONTRACT VALUE:
US$ 92 Million

MAJOR QUANTITIES:
Total Floor Area: 110,628 m²
Total Leasable Area: 60,832 m²

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- The buildings were fitted out by ENKA in accordance with the tenants' requirements.

PROJECT DESCRIPTION

Paveletsky Business Center, located on a 1.26 hectare plot of land on Paveletskaya Square on the Grand Ring, was one of the ENKA's major development projects in Moscow.

The 12-storey, 25,000 m² office building was constructed in 1997 as the first phase of the project. The second phase, a 27,100 m² office building was completed in 1998. Each of the two phases was built in nine (9) months.

The third and final phase of Paveletsky Business Center was the construction of Paveletsky Tower. This 27-storey, 60,000 m² building has 4 underground levels, accommodating a restaurant and car parks. The construction of the tower was completed in March 2003.

ENKA SCOPE OF SERVICES

The contract was on a lump-sum basis and included the turnkey engineering, procurement, and construction.

STAGE A:

Design and construction of a business and trade center. The building has 13 storeys + 1 basement.

STAGE B:

Design and construction of the Paveletskaya Square Business Center stage B, a 'Luxury Class' Office Building with 27 storeys at a height of 110 m. The building has a build up façade (gas block / brick + heat insulation + plaster + paint) and the whole structure is reinforced concrete.

STAGE C:

Design and construction of a business and trade center. The building has 14 storeys + 3 basements.

RIVERSIDE TOWERS SQUARE OF ART

PROJECT DETAILS

LOCATION:
Moscow, Russian Federation

OWNER / CLIENT:
Moskva KrasnyeHolmy JSC.

PROJECT DURATION:
Building 1-5:
July 1995-Sep 1999

Building 7-11:
June 2007-Nov 2009

CONTRACT TYPE:
Lump Sum-Turnkey

CONTRACT VALUE:
US$ 171 Million

PROJECT DESCRIPTION

JSC Moskva Krasnye Holmy was established at the end of 1994, to develop a business and cultural center called Riverside Towers, which is located on the eastern tip of Kremlin Island on a 7.1 hectare plot.

Designed in the traditional style of a Russian monastery, the development resembles a small town with buildings of various sizes.

Completed in five stages, the center comprises 61,000 m^2 of rentable A Class office space, a 235 key, 37 floor, five star hotel, a very large conference center, both of which are operated under the name of Swissôtel Krasnye Holmy, and an art gallery. The Moscow International Music House, a masterpiece of modern architectural design and one of the largest concert halls in the world, is also located within the grounds of the Riverside Towers.

UNIQUE CHALLENGES

- The complex is located on an island plot, over the Moscow River and channel, which was previously an old industrial area.

ENKA SCOPE OF SERVICES

Design

- Civil&Architectural Working Design
- Façade
- Mechanical Working Design
- Electrical Working Design
- Interior Design for Public Areas

Construction& Engineering

- Civil and Architectural Works
- Façade Works
- Mechanical Works
- Electrical Works
- Interior Works for Public Areas
- Site Works & Infrastructure

Procurement and Logistics

- Local Procurement
- International Procurement & Logistics

TSVETNOY MULTIFUNCTIONAL COMPLEX

PROJECT DESCRIPTION

The Office and Residence Plaza, Legend of Tsvetnoy, is located on the Tsvetnoy Boulevard, in Moscow's famous and historical city center. The contract for the project, covering an area of 120,296 m^2, was awarded by CAPITAL GROUP, a Russian real estate development company that carries out high-end residential and office projects for the Moscow property market.

The 16 story Plaza consists of a three storey underground car park covering an area of 33,218 m^2, a 7 story business center covering an area of 56,294 m^2 and three distinctive 8 and 7 story residential towers, covering an area of 30,786 m^2, that rise above the business center. One of the three blocks of the business center is reserved exclusively for the Presidential Administration and the other two accommodate A Class office space, restaurants and retail areas.

ENKA SCOPE OF SERVICES

The contract was awarded on a shell and core basis. ENKA's work comprised civil, architectural, MEP, facade, roofing and landscaping work. Construction of the project commenced in August, 2007 and was completed in April 2011.

PROJECT DETAILS

LOCATION:
Moscow, Russian Federation

OWNER / CLIENT:
Capital Group LLC

PROJECT DURATION:
Aug 2007-Apr 2011

CONTRACT TYPE:
Lump Sum

CONTRACT VALUE:
US$ 134 Million

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- On November 25, 2010, the Legend of Tsvetnoy was chosen as the winner of the residential property prize, Urban Awards 2010, for the category, The Best Luxury Residential Development Under Construction.

Major Quantities

Commodity	UoM	Total
Business Center Area	m^2	114,776
Residential Area	m^2	30,786
Commercial Area	m^2	2,800
Glass Façade	m^2	35,000
Carpark Capacity	ea	567

THE CENTRAL CORE OF MIBC, MOSCOW INTERNATIONAL BUSINESS CENTER

PROJECT DETAILS

LOCATION:
Moscow, Russian Federation

OWNER / CLIENT:
Bellgate Constructions Ltd.

PROJECT DURATION:
Dec 2006-Dec 2009

CONTRACT TYPE:
Fixed Lump Sum

CONTRACT VALUE:
US$ 237 Million

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- There are 449 retail areas in the Center, including shops and restaurants. This shopping center aspires to be one of the most outstanding and upmarket shopping areas of Moscow.

PROJECT DESCRIPTION

The Central Core of MIBC, Moscow International Business Center, is a multifunctional center, featuring a shopping mall, cinemas, food courts, restaurants and administrative premises, including access to underground car parks and the metro. The building is located on the Krasnopresnenskaya Embankment in Moscow, Russian Federation.

In its entirety, the center is an eight-floor reinforced concrete building with 4 floors above ground, 1 subterranean public floor, and a 3-floor underground car park. The underground floors have direct access to the metro.

The building is a standard rectangular form, 117 m by 410 m; however, a glazed atrium dome affords the building its unique appearance. This central core maintains a vital interconnection between Moscow City's high-rise blocks with the two roads that run along the longitudinal façades.

The project, which was awarded in December 2006 and successfully completed in December 2009, was constructed to the required quality in the 36 months schedule.

UNIQUE CHALLENGES

The main challenge encountered during the project's implementation was the design, procurement and installation of the glazed atrium dome, which covers an area of 10,500 m^2. Its installation was only achievable as a result of an enormous scaffolding framework, [approximately 115,000 m^3]. Its special design and complex engineering makes it a unique and exceptional example of Moscow's contemporary architecture.

Protecting this huge glass dome from the possibility of damage, as a result of the ongoing high-rise building's construction around the Central Core, was another big challenge. To achieve this, a special structure was necessary and the entire dome was covered until just before the center was officially opened with a specially designed and built timber shell, to prevent damage by objects falling from the adjacent high-rise buildings.

ENKA

THE CENTRAL CORE OF MIBC, MOSCOW INTERNATIONAL BUSINESS CENTER

ENKA SCOPE OF SERVICES

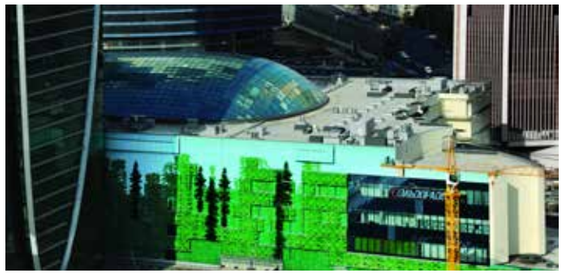
The scope of services provided by ENKA for this project included all the design and engineering work, procurement, construction and installation, the civil, structural, mechanical, electrical and roofing work. ENKA also installed the lifts and escalators and undertook the finishing of the building's operational, maintenance and technical facilities, covering a total construction area of 194,344 m^2.

The mechanical systems for the project included heating, ventilation, air conditioning, hot and cold water supply, sewage, a fully automated sprinkler, smoke extraction and pressurization systems and building automation and control systems.

The electrical work for the project included the power supply, intruder alarm system, CCTV system, fire alarm system, public announcement and emergency evacuation systems.

Major Quantities

Commodity	UoM	Total
Reinforced Concrete	m^3	38,500
Partition Walls	m^2	118,000
Dome Skylight	m^2	10,500
Roof Covering	m^2	20,000
Lifts & Excalators	set	66



WHITE SQUARE OFFICE CENTER

PROJECT DETAILS

LOCATION:
Moscow, Russian Federation

OWNER / CLIENT:
AIG Lincoln Coalco.

PROJECT DURATION:
June 2006-Nov 2009

CONTRACT TYPE:
Lump Sum-Turnkey

CONTRACT VALUE:
US$ 196 Million

MAIN QUANTITIES:
Above Ground Area: 80,000 m²
Office Area: 59,000 m²

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- The total number of people who worked during the construction of all three projects at its peak period was approximately 1,600 and included 60 technical and administrative personnel.

PROJECT DESCRIPTION

The White Square Office Centre is located in Moscow's city center, adjacent to the Belorusskaya Metro Station. The contract covered the construction of the multifunctional office complex, which comprised three mid-rise office buildings [Buildings A, B, and C] with a common three-level underground car park.

The total construction area of the project was 109,100 m², the 80,000 m², of which is above ground level. The total office area is 59,000 m².

Buildings A and B are 16 stories with 31,000 m² and 27,000 m² of office space, respectively. The Building C, on the other hand, is seven stories with 9,000 m² of office space. The three-level underground parking area has the capacity for a total of 840 vehicles. The shell and core works of all these structures were completed by mid-November, 2009.

In addition to the shell and core work, the fitting-out for Buildings A and B was undertaken by ENKA by way of two separate contracts signed in April 2008.

The completion dates for Building A and Building B fitting-out were October 30 and June 15, 2009, respectively.

Due to its unique architecture, the White Square is known not only as a business center that houses such multinational companies as Deloitte, McKinsey & Company, and PricewaterhouseCoopers, but also as a community landmark, largely due to its fountain (which, during the winter holiday season, is covered with a giant Christmas tree), a piazza, a mix of cafes and restaurants, community-focused events, and its view of the adjacent Nikolay Chudotvorets Church.

WHITE SQUARE OFFICE CENTRE

ENKA SCOPE OF SERVICES

The underground section of the project was built using a semi-top-down method, in which the first segment to be constructed is the first basement level, as slab-on-grade. This slab is supported with temporary column piles, allowing the excavation to be performed straight down to the foundation level. Following the completion of the excavations, the raft foundation was made, which is in fact the third basement slab.

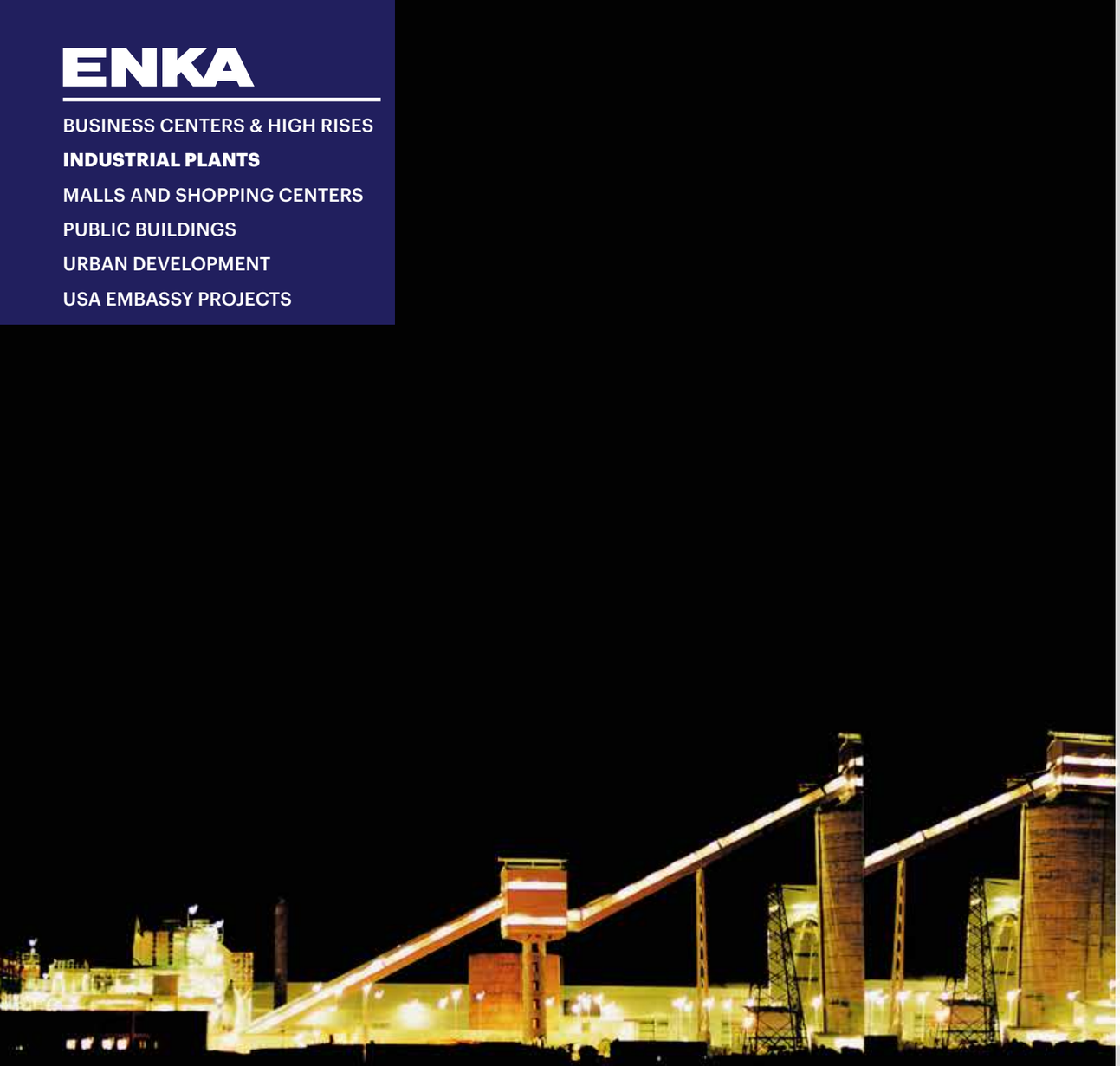
The remainder of the work for the reinforced concrete sections commenced with the third basement level columns, then the second basement level slab and finally the second basement level columns, which eventually replaced the temporary columns.

Following the successful completion of this phase, construction continued independently with the floors above ground level. A diaphragm wall was constructed to avoid water penetration, as well as to limit possible settling in the neighboring buildings. Construction for the three buildings' above ground sections was made using cast-in-situ reinforced concrete with conventional formwork systems.

Cast-in-situ concrete piles with a diameter of 1200 mm were used with regard to soil improvement. The foundation of the project was designed to be a piled-raft foundation, where loads are distributed evenly between the concrete piles and the reinforced concrete raft foundation. The thickness of the foundation varied from 1.4 m to 2.5 m.

The buildings' mechanical and electrical systems included HVAC; hot and cold domestic water supply and firewater mains; power supply and lighting; intruder alarm; CCTV; fire alarm and public announcement; fully automatic sprinkler systems; smoke extraction and pressurization and building automation and control systems.

The buildings have 4 cm thick stone ventilated facade cladding and aluminum window systems with aluminum profiles and glass packages, as well as a curtain wall, including aluminum cladding at certain sections.



INDUSTRIAL PLANTS

GENERAL MOTORS NEW CAR ASSEMBLY PLANT, RUSSIAN FEDERATION

MARS CONFECTIONERY PLANT, RUSSIAN FEDERATION

TOYOTA CAR AND ASSEMBLY PLANT, RUSSIAN FEDERATION

TOYOTA-SA AUTOMOBILE FACTORY, TURKEY

DERNA DESALINATION PLANT, LIBYA

SOUSSA DESALINATION PLANT , LIBYA

ZAWIA DESALINATION PLANT , LIBYA

ZUARA DESALINATION PLANT, LIBYA

MESSEBO CEMENT FACTORY, ETHIOPIA

BENGHAZI CEMENT PLANT, LIBYA

HAWARI CEMENT PLANT, LIBYA

SOUQ AL-KHAMIS CEMENT PLANT, LIBYA

AL KHOMS CEMENT PLANT, LIBYA

TASLUJA CEMENT PLANT, IRAQ

KERBELA CEMENT PLANT, IRAQ

FALLUJA WHITE CEMENT PLANT , IRAQ

BADOOSH CEMENT PLANT, IRAQ

NEW BADOOSH CEMENT PLANT/OPERATION&MAINTENANCE, IRAQ

RASHADIYA CEMENT PLANT, JORDAN

KUBAISA CEMENT PLANT, IRAQ

INDUSTRIAL PLANTS

GENERAL MOTORS NEW CAR ASSEMBLY PLANT

PROJECT DETAILS

LOCATION:
St. Petersburg, Russian Federation

OWNER / CLIENT:
General Motors.

PROJECT DURATION:
May 2007-Sep 2008

CONTRACT TYPE:
Lump Sum-Turnkey

CONTRACT VALUE:
US$ 137 Million

MAIN QUANTITIES:
Total Floor Area: 72,000 m²

PROJECT DESCRIPTION

The plant, located in the Russian Federation's city of St. Petersburg, is a General Motors investment with a production capacity for 80,000 cars per year. The construction of the facility was initiated in May 2007, completed in 17 months and handed over in September 2008.

ENKA SCOPE OF SERVICES

The factory was constructed on a 391,000 m² plot of land and has a covered area of 72,000 m². The plant has four major process shops and 2,800 m² of administration buildings.

The major work items of the project were 198,000 m³ of excavation, 69,000 m of driven piles, 31,000 m³ of concrete, 4,700 tons of reinforced steel, 2,400 tons of structural steel, 56,000 m² of roofing, 32,000 m² of wall cladding, 56,000 m² of ground slab hardening, 9,000 m of infrastructure piping, 125,000 m of cabling, 83,000 m² of landscaping and 45,000 m² of roads and parking areas.

The complete electrical and mechanical utility system and heating, ventilation and air conditioning (HVAC) system were also installed, together with a large-scale building automation system.

MARS CONFECTIONERY PLANT

PROJECT DESCRIPTION

The turnkey contract was awarded to ENKA by Masterfoods (USA) in 1994, for the construction of the 30,000 m² Mars Confectionery Plant. Located in Stupino, 120 km south of Moscow, the plant occupies a 40 ha plot.

The project included the construction of the snack food plant, office building, energy block, warehouses, wastewater treatment plant, oil tanks, drainage systems, external utilities, roads, parking areas and landscaping, as well as the erection of 500 tons of processing equipment.

ENKA SCOPE OF SERVICES

ENKA completed the project within 13 months in 1995. Additional contracts were signed in 2001 for the turnkey construction of extension phases, comprising a nut processing plant, a packaging building and a warehouse, with a total construction area of 15,000 m².

PROJECT DETAILS

LOCATION:
Moscow, Russian Federation

OWNER / CLIENT:
A/O Masterfoods.

PROJECT DURATION:
June 1994-July 1995

CONTRACT TYPE:
Lump Sum

CONTRACT VALUE:
US$ 67 Million

Major Quantities

Commodity	UoM	Total
Excavation	m³	55,000
Concrete	m³	9,000
Steel Structure	ton	2,200
Hollow Core Slabs	m²	4,500
Wall Cladding	m²	21,000
Roofing	m²	22,000
Utility Piping	m	32,000

Major Quantities

Commodity	UoM	Total
Cabling	m	155,000
Refrigeration Plant	kW	2,300
Water Yreatment Plant	m³/h	18
Waste Water Treatment Plant	m³/h	160
Boiler Plant Erection	ton/h	2x15
Process Equipment Erection	ton	500
Total Floor Area	m²	27,000

TOYOTA CAR ASSEMBLY PLANT

PROJECT DETAILS

LOCATION:
St. Petersburg, Russian Federation

OWNER / CLIENT:
Toyota Motor Manufacturing Russia.

PROJECT DURATION:
May 2006-Sep 2007

CONTRACT TYPE:
Lump Sum-Turnkey

CONTRACT VALUE:
US$ 71 Million

PROJECT DESCRIPTION

The plant, with an annual production capacity of 50,000 cars, is one of the biggest Toyota factories in Europe. The factory was constructed on land covering 214,000 m^2 and had a covered area of 57,000 m^2. The plant consists of four major process shops of 12,000 m^2 each, as well as a 5,000 m^2 utility shop and a 4,000 m^2 Administration Building. The poor soil conditions and the high underground water table made it necessary to use deep bored piles and sheet piling techniques for structures, such as sludge pools and booth pits. The plant was completed and handed over in August 2007.

The major process shops included a paint shop, a general assembly shop, a body shop and a production control shop. All the shops were constructed as single storey buildings. The plant also included a 50,000 m^2 shipping yard for new cars and a 27,000 m^2 container yard.

ENKA SCOPE OF SERVICES

The work included the construction of an automobile factory, including four process buildings and 11 service buildings. The project also included the procurement and construction of electrical and mechanical works, roads, parking areas and landscaping.

All slab-on-grade, as well as the foundations and pits were supported with driven piles averaging 29 m in length. The roof structure was made of primary and secondary trusses with a purlin grid of 2.5 m. The steel structure for the roof system rests on precast concrete columns with dimensions of 80mm x 800mm dimensions. The roof covering system was made of two layers of steel load bearing sheets with 140 mm of insulation layer between them. All the shops are single storey buildings and the plant's facade is a sandwich panel system with insulation.

The mechanical and electrical systems include: HVAC, hot and cold water supply and a fire water main, power supply and lighting, intruder alarm, fire alarm, fully automatic sprinkler, public announcement and emergency evacuation systems, smoke extraction, as well as pressurization and building automation and control.

Major Quantities

Commodity	UoM	Total
Excavation	m^3	100,000
Backfilling	m^3	50,000
Concrete	m^3	30,000
Reinforcing Steel	ton	4,000
Structural Steel	ton	3,500
Driven Piles	m	105,000
Bored Piles	m	11,000
Roofing	m^2	55,000

Major Quantities

Commodity	UoM	Total
Wall Cladding	m^2	20,000
Ground of slab hardening	m^2	44,000
Infrastructure Piping	m	17,000
Utiliy Piping	m	31,000
Cabling	m	147,000
Landscaping	m^2	110,000
Roads & Parking Areas	m^2	70,000
Total Floor Area	m^2	57,000

TOYOTA-SA AUTOMOBILE FACTORY

PROJECT DESCRIPTION

The plant, located in Adapazarı, is a Toyota SA investment with an annual production capacity of 100,000 cars. It ranks as third amongst the 35 Toyota factories in the world. The factory was constructed on 400,000 m^2 of land and has a covered area of 135,000 m^2. Out of the 29 buildings in the plant, the assembly shop and the painting shop are 35,000 m^2 each and the communal buildings have a floor area of 19,000 m^2.

ENKA SCOPE OF SERVICES

ENKA completed the turnkey construction of the plant within 21 months and handed it over to Toyota SA in April 1994.

Other ENKA Group companies also took part in the construction of the Toyota plant alongside ENKA İnşaat ve Sanayi A.Ş. It took Kasktaş three months to carry out a total of 45,000 m of piling, together with the diaphragm and curtain walls, and 14,500 tons of structural steel was fabricated by Çimtaş in its Gemlik Works and it was erected at the site within nine months.

PROJECT DETAILS

LOCATION:
Adapazarı, Turkey

OWNER / CLIENT:
Toyota-Sabancı Automotive Industry and Trade Co. Inc. - TOYOTA-SA

PROJECT DURATION:
Apr 1992-Apr 1994

CONTRACT TYPE:
Lump Sum

CONTRACT VALUE:
US$ 80 Million

Major Quantities

Commodity	UoM	Total
Excavation	m^3	310,000
Backfilling	m^3	420,000
Concrete	m^3	50,000
Reinforcing Steel	ton	1,960
Structural Steel	ton	12,000

Major Quantities

Commodity	UoM	Total
Piling	m^3	15,000
Roads	m^2	37,000
Parking Areas	m^2	30,000
Landscaping	m^2	30,000
Total Floor Area	m^2	127,640

DERNA DESALINATION PLANT PROJECT (SEA WATER THERMAL (MED-TVC) PLANT)

PROJECT DETAILS

LOCATION:
Derna - Libya

OWNER / CLIENT:
General Electricity Company of Libya (GECOL)

PROJECT DURATION:
Aug 2006 – Aug 2010

CONTRACT TYPE:
Lump Sum Turn Key

CONTRACT VALUE:
EUR 38 Million

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- 1.1 million man-hours
- First supply and delivery of floating HDPE offshore pipe (dia. 1,400 mm) in total 500 m length on piece bundle from Turkey. First Çanakkale channel crossing of HDPE pipe string by floating method with tug boat in total of 650 m.
- 600 ton of concrete water intake head erection in 12 m depth under seawater.
- 6 pcs of concrete blocks, 85 tons each, transportation by means of floating in 2 miles.

PROJECT DESCRIPTION

Derna Desalination Plant Project, located in Derna city in eastern part of Libya, was in part of a development plan implemented by General Electricity Company of Libya, in the period of 40th Anniversary preparations of Libyan Leader, to cover high demand of reliable water sources in eastern part of Libya.

The Project consisted of engineering, procurement, construction, commissioning and start-up of a 2 x 20,000 m^3/day Water Production Plant with two type of fuel, Heavy Fuel Oil (HFO) and Light Fuel Oil (LFO), complete with all Balance of Plant (BOP) systems. Heavy fuel oil (HFO) is used as main fuel for MED Desalination Plant operation whereas; light fuel oil (LFO) are used as back-up fuels. The project consists of a redundant sea water intake system of which complete basic and detailed engineering was included in EPC scope of the Project.

Main process and equipment, MED evaporators, boilers and auxiliaries are supplied by Sidem (Veolia, FR) as consortium partner of the Project.

The project includes a water distribution network line with water storage tanks.

UNIQUE CHALLENGES

Derna Desalination Plant is expected to address the growing demand for water in eastern part of the country and supply reliable water to public.

Sea water intake onshore system construction needed micro piling implementation to eliminate excessive amount of water flows through subsoil cracks. The micro piling system was carefully designed by ENKA to overcome natural difficulties. As part of the EPC Contract, ENKA through its piling specialist subsidiary Kasktas have installed Ø340 mm micro piles in 685 pcs in total.

Offshore portion of sea water system was challenge in eastern Mediterranean Sea under unexpected open sea conditions. Design and implementation of offshore portion were performed with appropriate design margins and redundancy requirements.

ENKA

DERNA DESALINATION PLANT PROJECT (SEA WATER THERMAL (MED-TVC) PLANT)

Project site is located in Derna city in the eastern part of Libya in a relatively high populated area. ENKA, while executing the work, successfully managed cultural relations with locals to avoid any clashes and maintained good relations with its neighbors.

Such regional location and high temperatures during summer months created unique challenges for the project workforce peaked at 450 people.

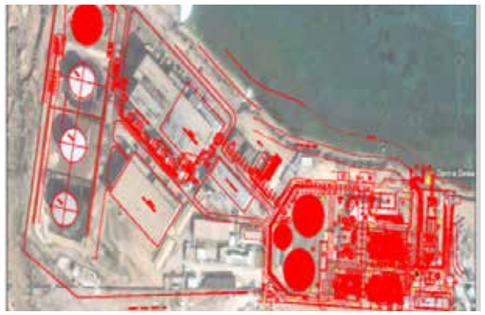
ENKA SCOPE OF SERVICES

ENKA has self performed the basic engineering, detail engineering, procurement, construction, commissioning, start-up and performance testing scope for the project utilizing in-house resources on a lump sum turnkey basis. Specific scope of services provided by ENKA included; complete basic and detailed design and engineering of the plant, supply of all balance of plant (BOP) systems and equipment, all civil works including foundations and structural steel, Product Water Tanks (2 x 20,000 m^3), Make Up Water Tank (1 x 500 m^3), HFO Tanks (1 x 20,000 m^3, 1 x 5,000 m^3), 2 x 40,000 m^3/day sea water intake system including 20 kg/hr electro-chlorination system, 2 x 1,000 m HDPE offshore sea water intake piping (dia. 1,400 mm), complete interconnecting piping of the plant, fire fighting system, MV/LV electrical & control and switchgear systems with aux. transformers, instrument and plant air supply systems, Emergency Diesel Generators, waste collection and treatment system, batteries and UPS System, ventilation and air conditioning (HVAC) systems, overhead cranes and maintenance hoists, power plant distributed control system (DCS), mechanical and electrical erection, complete civil and structural works, supply of spare parts, and start-up and commissioning of the plant. ENKA further provided training for the O&M personnel who will be operating and maintaining the plant.

ENKA scope also covers 9,000 m water distribution DI piping line (dia. 600 mm) with 2 x 10,000 m^3 water storage tanks.

Major Quantities

Commodity	UoM	Total
Concrete	m^3	14,200
Structural Steel	ton	650
Cabling	km	170
Equipment	ton	4,800
Engineering Hours	hrs	81,000
Document Qty.	pcs	1,296



Balmumcu Mah., Zincirlikuyu Yolu No: 10, 34349 Beşiktaş / İstanbul | Phone: +90 (212) 376 10 00 (pbx) | Fax: +90 (212) 272 88 69
e-mail: enka@enka.com | web: www.enka.com

SOUSSA DESALINATION PLANT PROJECT (SEA WATER THERMAL (MED-TVC) PLANT)

PROJECT DETAILS

LOCATION:
Soussa - Libya

OWNER / CLIENT:
General Electricity Company of Libya (GECOL)

PROJECT DURATION:
Aug 2006 – Aug 2010

CONTRACT TYPE:
Lump Sum Turn Key

CONTRACT VALUE:
EUR 25 Million

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- 1.5 million man-hours
- First supply and delivery of floating HDPE offshore pipe (dia. 1,400 mm) in total 500 m length on piece bundle from Turkey. First Çanakkale channel crossing of HDPE pipe string by floating method with tug boat in total of 650 m.
- 600 ton of concrete water intake head erection in 12 m depth under seawater.
- 6 pcs of concrete blocks, 85 tons each, transportation by means of floating in 2 miles.

PROJECT DESCRIPTION

Soussa Desalination Plant Project, located in Soussa city in eastern part of Libya, was in part of a development plan implemented by General Electricity Company of Libya, in the period of 40th Anniversary preparations of Libyan Leader, to cover high demand of reliable water sources in eastern part of Libya.

The Project consisted of engineering, procurement, construction, commissioning and start-up of a 2 x 20,000 m^3/day Water Production Plant with two type of fuel, Heavy Fuel Oil (HFO) and Light Fuel Oil (LFO), complete with all Balance of Plant (BOP) systems. Heavy fuel oil (HFO) is used as main fuel for MED Desalination Plant operation whereas; light fuel oil (LFO) are used as back-up fuels. The Project consists of a redundant sea water intake system, complete basic design and detailed design of which, was included in EPC Scope of the project.

Main process and equipment, MED evaporators, boilers and auxiliaries are supplied by Sidem (Veolia, FR) as consortium partner of the Project.

UNIQUE CHALLENGES

Soussa Desalination Plant is expected to address the growing demand for water in eastern part of the country and supply reliable water to public.

Offshore portion of sea water system was challenge in eastern Mediterranean Sea under unexpected open sea conditions. 2 x 500 m HDPE pipe string was floated and sank in one piece to be installed on sea bed. Design and implementation of offshore portion were performed with appropriate design margins and redundancy requirements.

Project site is located in near Soussa city in the eastern part of Libya. ENKA, while executing the work, successfully managed cultural relations with locals to avoid any clashes and maintained good relations with its neighbors.

Such regional location and high temperatures during summer months created unique challenges for the project workforce peaked at 380 employees.

ENKA

SOUSSA DESALINATION PLANT PROJECT (SEA WATER THERMAL (MED-TVC) PLANT)

ENKA SCOPE OF SERVICES

ENKA has self-performed the basic engineering, detail engineering, procurement, construction, commissioning, start-up and performance testing scope for the project utilizing in-house resources on a lump sum turnkey basis. Specific scope of services provided by ENKA included; complete basic and detailed design and engineering of the plant, supply of all balance of plant (BOP) systems and equipment, all civil works including foundations and structural steel, Product Water Tanks (2 x 20,000 m^3), Make Up Water Tank (1 x 500 m^3), HFO Tanks (2 x 5,000 m^3), 2 x 40,000 m^3/day sea water intake system including 20 kg/hr electro-chlorination system, 2 x 500 m HDPE offshore sea water intake piping (dia. 1,400 mm), complete interconnecting piping of the plant, fire fighting system, MV/LV electrical & control and switchgear systems with aux. transformers, instrument and plant air supply systems, Emergency Diesel Generators, waste collection and treatment system, batteries and UPS System, ventilation and air conditioning (HVAC) systems, overhead cranes and maintenance hoists, power plant distributed control system (DCS), mechanical and electrical erection, complete civil and structural works, supply of spare parts, and start-up and commissioning of the plant. ENKA further provided training for the O&M personnel who will be operating and maintaining the plant.

Major Quantities

Commodity	UoM	Total
Concrete	m^3	11,500
Structural Steel	ton	460
Cabling	km	147
Equipment	ton	4,000
Engineering Hours	hrs	65,000
Document Qty.	pcs	1,144

Balmumcu Mah., Zincirlikuyu Yolu No: 10, 34349 Beşiktaş / İstanbul | Phone: +90 (212) 376 10 00 (pbx) | Fax: +90 (212) 272 88 69
e-mail: enka@enka.com | web: www.enka.com

ZAWIA DESALINATION PLANT PROJECT (SEA WATER THERMAL (MED-TVC) PLANT)

PROJECT DETAILS

LOCATION:
Zawia - Libya

OWNER / CLIENT:
General Electricity Company of Libya (GECOL)

PROJECT DURATION:
July 2006 – Feb 2012

CONTRACT TYPE:
Lump Sum Turn Key

CONTRACT VALUE:
EUR 62 Million

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- 2.5 million man-hours
- The largest capacity of Desalination Plant Project in Libya

PROJECT DESCRIPTION

Zawia Desalination Plant Project, located in Zawia city in western part of Libya in 60 km distance to capital city Tripoli, was in part of a development plan implemented by General Electricity Company of Libya, in the period of 40th Anniversary preparations of Libyan Leader, to cover high demand of reliable water sources in eastern part of Libya.

The Project consisted of engineering, procurement, construction, commissioning and start-up of a 4 x 20,000 m^3/day Water Production Plant with three type of fuel, Heavy Fuel Oil (HFO), NG and Light Fuel Oil (LFO), complete with all Balance of Plant (BOP) systems. NG is planned to be used as main fuel for MED Desalination Plant operation whereas; heavy fuel oil (HFO) are used as back-up fuels.

Main process and equipment, MED evaporators, boilers and auxiliaries are supplied by Sidem (Veolia, FR) as consortium partner of the Project.

The project includes a relatively large water distribution network line in 142 km with water storage tanks and pumping stations.

UNIQUE CHALLENGES

Zawia Desalination Plant is expected to address the growing demand for water in western part of the country and supply reliable water to public.

Project site is located in Zawia city in the western part of Libya in a highly populated area. ENKA, while executing the work, successfully managed cultural relations with locals to avoid any clashes and maintained good relations with its neighbors.

Soil improvement has to be performed by means of replacement of subsoil with adequate fill material in the project site for foundations of heavy loads.

Such regional location and high temperatures during summer months created unique challenges for the project workforce peaked at 620 employees.

ENKA

ZAWIA DESALINATION PLANT PROJECT (SEA WATER THERMAL (MED-TVC) PLANT)

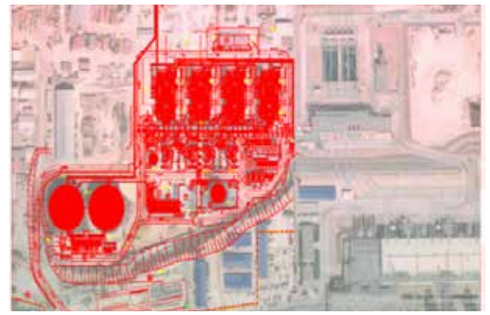
ENKA SCOPE OF SERVICES

ENKA has self performed the basic engineering, detail engineering, procurement, construction, commissioning, start-up and performance testing scope for the project utilizing in-house resources on a lump sum turnkey basis. Specific scope of services provided by ENKA included; complete basic and detailed design and engineering of the plant, supply of all balance of plant (BOP) systems and equipment, all civil works including foundations and structural steel, Product Water Tanks (2 x 20,000 m^3), Make Up Water Tank (1 x 500 m^3), LFO Tank (1 x 2,500 m^3), complete interconnecting piping of the plant, fire fighting system, MV/LV electrical & control and switchgear systems with aux. transformers, instrument and plant air supply systems, Emergency Diesel Generators, waste collection and treatment system, batteries and UPS System, ventilation and air conditioning (HVAC) systems, overhead cranes and maintenance hoists, power plant distributed control system (DCS), mechanical and electrical erection, complete civil and structural works, supply of spare parts, and start-up and commissioning of the plant. ENKA further provided training for the O&M personnel who will be operating and maintaining the plant.

ENKA scope also covers 142,000 m water distribution DI piping line with 9 pcs of water storage tanks (2 x 20,000 m^3, 5 x 10,000 m^3, 1 x 5,000 m^3, 1 x 2,500 m^3) and 4 pcs of pumping stations.

Major Quantities

Commodity	UoM	Total
Concrete	m^3	8,098
Structural Steel	ton	486
Cabling	km	340
Equipment	ton	7,900
Engineering Hours	hrs	48,900
Document Qty.	pcs	1,123



Balmumcu Mah., Zincirlikuyu Yolu No: 10, 34349 Beşiktaş / İstanbul | Phone: +90 (212) 376 10 00 (pbx) | Fax: +90 (212) 272 88 69
e-mail: enka@enka.com | web: www.enka.com

ZUARA DESALINATION PLANT PROJECT (SEA WATER THERMAL (MED-TVC) PLANT)

PROJECT DETAILS

LOCATION:
Zuara - Libya

OWNER / CLIENT:
General Electricity Company of Libya (GECOL)

PROJECT DURATION:
Mar 2007 – Nov 2010

CONTRACT TYPE:
Lump Sum Turn Key

CONTRACT VALUE:
EUR 20.5 Million

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- 1.1 million man-hours

PROJECT DESCRIPTION

Zuara Desalination Plant Project, located in near Zuara city within 10 km in western part of Libya, in 100 km distance to capital city Tripoli, was in part of a development plan implemented by General Electricity Company of Libya, in the period of 40th Anniversary preparations of Libyan Leader, to cover high demand of reliable water sources in eastern part of Libya.

The Project consisted of engineering, procurement, construction, commissioning and start-up of a 2 x 20,,000 m^3/day Water Production Plant with two type of fuel, Heavy Fuel Oil (HFO), and Light Fuel Oil (LFO), complete with all Balance of Plant (BOP) systems. HFO is planned to be used as main fuel for MED Desalination Plant operation whereas; light fuel oil (LFO) are used as back-up fuels.

Main process and equipment, MED evaporators, boilers and auxiliaries are supplied by Sidem (Veolia, FR) as consortium partner of the Project.

UNIQUE CHALLENGES

Zuara Desalination Plant is expected to address the growing demand for water in western part of the country and supply reliable water to public.

Project site is located in coast line of Zuara city in the western part of Libya. Soil was weak to withstand heavy loads of the project structures. So ENKA had to perform piling work with dia. 600 mm drill hole in total of 3,696 m in length.

Such regional location and high temperatures during summer months created unique challenges for the project workforce peaked at 280 people.

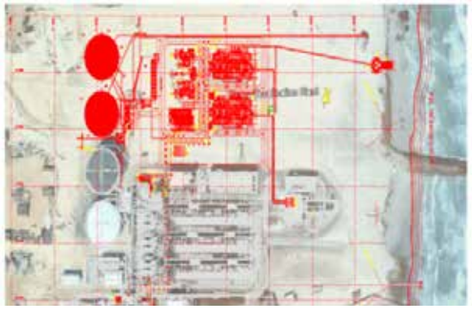
ZUARA DESALINATION PLANT PROJECT (SEA WATER THERMAL (MED-TVC) PLANT)

ENKA SCOPE OF SERVICES

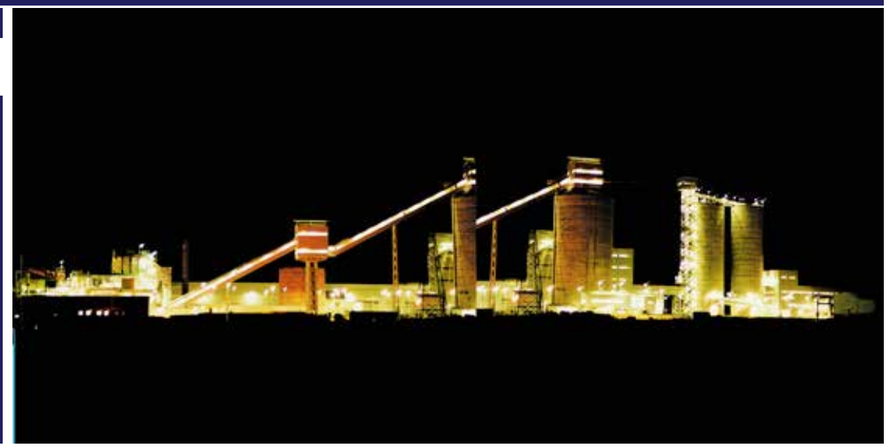
ENKA has self-performed the basic engineering, detail engineering, procurement, construction, commissioning, start-up and performance testing scope for the project utilizing in-house resources on a lump sum turnkey basis. Specific scope of services provided by ENKA included; complete basic and detailed design and engineering of the plant, supply of all balance of plant (BOP) systems and equipment, all civil works including foundations and structural steel, Product Water Tanks (2 x 20,000 m^3), Make Up Water Tank (1 x 500 m^3), LFO Tank (1 x 5,000 m^3), complete interconnecting piping of the plant, firefighting system, MV/LV electrical & control and switchgear systems with aux. transformers, instrument and plant air supply systems, Emergency Diesel Generators, waste collection and treatment system, batteries and UPS System, ventilation and air conditioning (HVAC) systems, overhead cranes and maintenance hoists, power plant distributed control system (DCS), mechanical and electrical erection, complete civil and structural works, supply of spare parts, and start-up and commissioning of the plant. ENKA further provided training for the O&M personnel who will be operating and maintaining the plant.

Major Quantities

Commodity	UoM	Total
Concrete	m^3	4,764
Structural Steel	ton	341
Cabling	km	185
Equipment	ton	4,800
Engineering Hours	hrs	28,300
Document Qty.	pcs	720



MESSEBO CEMENT FACTORY



PROJECT DETAILS

LOCATION:
Addis Ababa, Ethiopia

OWNER / CLIENT:
Messebo Building Materials Production Share Co.

PROJECT DURATION:
Feb 1997-Dec 1999

CONTRACT TYPE:
Lump Sum-Turnkey

CONTRACT VALUE:
US$ 45 Million

PROJECT DESCRIPTION

The construction of the cement factory started in January 1997 for the client, Messebo Building Materials Production Share Company. The plant is located in the northern part of Ethiopia, 7 km from Mekele city.

The project encompassed all the civil and structural works, supply and installation of the structural steel, and the entire mechanical erection works. The mechanical equipment was provided by F.L.Smith of Denmark.

ENKA SCOPE OF SERVICES

The annual capacity of the plant is 600,000 tons and it is capable of producing portland cement with or without additives. The project involved 256,000 m^3 of excavation and backfill, 44,000 m^3 of concrete, 3,700 tons of structural steel, 3,450 tons of reinforcement, 115,000 m^2 of formwork, 7,200 tons of mechanical installation and 500 tons of electrical installation. The project was completed at the end of 1999.

BENGHAZI CEMENT PLANT

PROJECT DETAILS

LOCATION:
Benghazi, Libya

OWNER / CLIENT:
General National Organization for Industrialization

PROJECT DURATION:
First Extension:
Mar 1972 - June 1973
Second Extension:
Oct 1974 – June 1976

CONTRACT TYPE:
Lump Sum-Turnkey

CONTRACT VALUE:
First Extension: US$ 20 Million
Sec. Extension: US$ 25 Million

ENKA SCOPE OF SERVICES:
Procurement and Construction Subcontracting works to "Bilfinger Berger"

PROJECT DESCRIPTION

All civil works of a cement plant extension project with a capacity of 600,000 tons/year (First Extension)

All civil works of a cement plant extension project with a capacity of 600,000 tons/year (Second Extension)

HAWARI CEMENT PLANT

PROJECT DETAILS

LOCATION:
Benghazi, Libya

OWNER / CLIENT:
General National Organization for Industrialisation

PROJECT DURATION:
Oct 1975-Nov 1977

CONTRACT TYPE:
Lump Sum

CONTRACT VALUE:
US$ 50 Million

MAIN QUANTITIES:
Formwork: 103,758 m^2
Reinforcing Steel: 2,998 tons
Reinforced Concrete: 33,242 m^3

PROJECT DESCRIPTION

Under the project scope, all civil and building works of the cement plant with a capacity of 1,000,000 tons/year were performed by ENKA.

ENKA SCOPE OF SERVICES

Subcontractor to main civil contractor (Bilfinger Berger). ENKA was responsible for the 80 % of the civil works.

SOUQ AL-KHAMIS CEMENT PLANT

PROJECT DETAILS

LOCATION:
Souk Al-Khamis, Libya

OWNER / CLIENT:
General National Organization for Industrialisation

PROJECT DURATION:
Aug 1974-May 1977

CONTRACT TYPE:
Lump Sum

CONTRACT VALUE:
US$ 40 Million

MAIN QUANTITIES:
Formwork: 115,000 m^2
Reinforcing Steel: 3,600 tons
Reinforced Concrete: 37,000 m^3

PROJECT DESCRIPTION

The project's scope of works included all civil and building works of a cement plant with a capacity of 1,000,000 tons/year.

ENKA SCOPE OF SERVICES

Subcontractor to main civil contractor – Bilfinger Berger. ENKA was responsible for the 80% of the civil works. KHD from Germany – Turnkey contractor

AL KHOMS CEMENT PLANT

PROJECT DETAILS

LOCATION:
Al-Khoms, Libya

OWNER / CLIENT:
General National Organization for Industrialisation

PROJECT DURATION:
Mar 1977-Mar 1979

CONTRACT TYPE:
Lump Sum-Turnkey

CONTRACT VALUE:
US$ 40 Million

MAIN QUANTITIES:
Formwork: 57,000 m^2
Reinforcing Steel: 1,700 tons
Reinforced Concrete: 30,500 m^3

PROJECT DESCRIPTION

The scope of works consisted of all civil and building works of a cement plant with a capacity of 1,000,000 tons/year.

ENKA SCOPE OF SERVICES

Subcontractor to main civil contractor “Bilfinger Berger”. ENKA was responsible for the 80% of the civil works.

TASLUJA CEMENT PLANT

PROJECT DETAILS

LOCATION:
Tasluja, Iraq

OWNER / CLIENT:
State Organization for Construction Industries – STOKI

PROJECT DURATION:
Mar 1981-Jul 1985
First Extension:
May 1981-Oct 1985

CONTRACT TYPE:
Lump Sum-Turnkey

CONTRACT VALUE:
US$ 47 Million

MAIN QUANTITIES:
Excavation: 155,248 m^3
Formwork: 84,080 m^2
Reinforced steel: 3,846 tons
Sliding formwork: 24,476 m^2
Concrete: 40,184 m^3
Prestressing wire: 112 tons

PROJECT DESCRIPTION

The project’s scope of works included the procurement and construction of all civil and building works with respect to the cement plant with the capacity of 1,000,000 tons/ year. All civil and building works related with 100 percent extension of Tasluja Cement Plant.

ENKA SCOPE OF SERVICES

ENKA, as construction contractor has undertaken all civil and building works related with the cement plant including detailed designs.

ENKA’s works consist of raw material crushing, storage and handling unit; cement packing, loading and dispatch unit; electrical power supply system; workshops, storage areas; administration building, camp facilities and other auxiliary facilities.

KERBELA CEMENT PLANT

PROJECT DETAILS

LOCATION:
Kerbela, Iraq

OWNER / CLIENT:
State Organization for Construction Industries - STOKI

PROJECT DURATION:
May 1981-Mar 1985
First Extension:
Sep 1981-Aug 1985

CONTRACT TYPE:
Lump Sum

CONTRACT VALUE:
US$ 48 Million

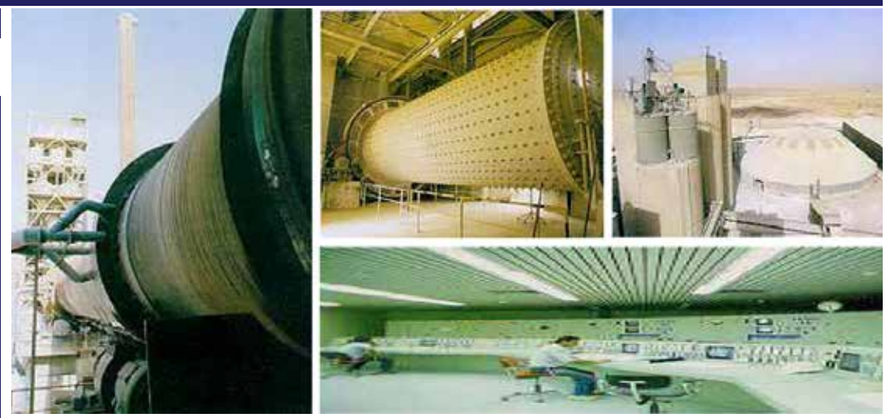
MAIN QUANTITIES:
Excavation: 266,057 m^3
Formwork: 170,162 m^2
Reinforced steel: 9,360 tons
Sliding formwork: 368,392 m^3
Concrete: 41,219 m^3
Prestressing wire: 108 tons

PROJECT DESCRIPTION

Cement Plant with a capacity of 1,000,000 tons/year (3,000 tons/day of cement clinker in one production line). ENKA,as construction contractor has undertaken all civil and building works related with the cement plant including detailed designs. ENKA’s works consist of raw material crushing, storage and handling unit; clinker production , storage and handling unit; central control and laboratory building; fuel oil and gas systems; cement grinding , storage and handiling unit; cement packing, loading and dispatch unit; electrical power supply system water supply system and auxiliary facilities.

All civil and building works related with 100 percent extension of Kerbela Cement Plant.

FALLUJA WHITE CEMENT PLANT



PROJECT DETAILS

LOCATION:
Falluja, Iraq

OWNER / CLIENT:
Iraqi Central Cement State Enterprise

PROJECT DURATION:
Jan 1985-Jan 1990

CONTRACT TYPE:
Lump Sum

CONTRACT VALUE:
US$ 3.7 Million

PROJECT DESCRIPTION

Technicnical management and consulting, design of preventive maintenance systems, supervision of spare parts manufacturing, periodical check of equipment and machinery, forn design , etc.

ENKA SCOPE OF SERVICES

ENKA’s wholly owned subsidiary, ENKA Teknik managed and operated Falluja White Cement for the Client, Central Cement State Enterprise.

BADOOSH CEMENT PLANT

PROJECT DETAILS

LOCATION:
Mosul, Iraq

OWNER / CLIENT:
Mosul Public Enterprise for Building Materials

PROJECT DURATION:
Oct 1980-Mar 1983

CONTRACT TYPE:
Lump Sum-Turnkey

CONTRACT VALUE:
US$ 6.7 Million

MAIN QUANTITIES:
Structural Steel: 2,500 tons

PROJECT DESCRIPTION

The scope of works consisted of design, engineering, fabrication and erection of the steel structure works of homogenisation buildings of the cement plant with a 3,000 tons daily capacity.

ENKA SCOPE OF SERVICES

Design, engineering, fabrication and erection of the steel structure works of homogenisation buildings. Totally 2,500 tons of steel structure works were performed.

NEW BADOOSH CEMENT PLANT / OPERATION & MAINTENANCE

PROJECT DESCRIPTION

Maintenance, operation and technical administration of grinding mills (separate contract).

Maintenance, operation and technical administration of quality control department (separate contract).

Overall maintenance, operation, technical administration of the 2nd extension of Badoosh Cement Plant (separate contract).

PROJECT DETAILS

LOCATION:
Mosul, Iraq

OWNER / CLIENT:
State Enterprise for Cement in Ninevah/SECIN

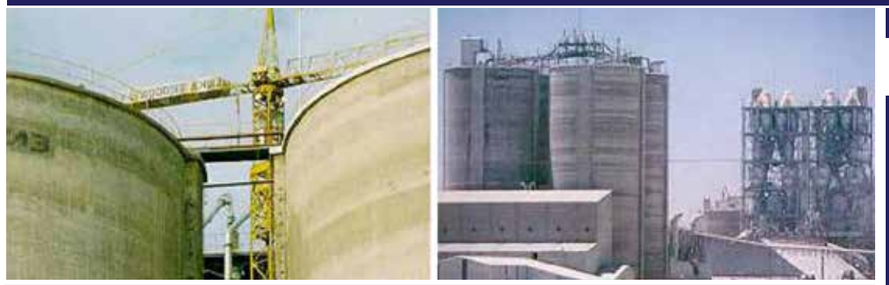
PROJECT DURATION:
Dec 1981 – Apr 1984
Sep 1982 – Apr 1984
Dec 1982 – Dec 1985

CONTRACT TYPE:
Lump Sum-Turnkey

CONTRACT VALUE:
US$ 3.8 Million
US$ 432 Million
US$ 11.5 Million

MAIN QUANTITIES:
Excavation: 155,248 m^3
Formwork: 84,080 m^2
Reinforced steel: 3,846 tons
Sliding formwork: 24,476 m^2
Concrete: 40,184 m^3
Prestressing wire: 112 tons

RASHADIYA CEMENT PLANT



PROJECT DESCRIPTION

The Rashadiya Cement Plant in Jordan with an annual capacity of 2,000,000 tons/ year were constructed.

ENKA SCOPE OF SERVICES

In joint venture with Jordan's Trocon Co. ENKA executed all civil and building works (Main plant building was constructed as heavy steel structure on reinforced concrete foundations), air-conditioning, all steel structure works erection, fabrication of mechanical steel structure such as ducts, chutes (1,440 tons) and clinker tower erection and infrastructure works.

PROJECT DETAILS

LOCATION:
Rashadiya, Jordan

OWNER / CLIENT:
National Planning Commitee – South Cement Company Ltd.

PROJECT DURATION:
Nov 1981-Jun 1984

CONTRACT TYPE:
Lump Sum

CONTRACT VALUE:
US$ 42.2 Million

MAIN QUANTITIES:
Excavation: 130,000 m^3
Formwork: 144,000 m^2
Reinforcing Steel: 5,300 tons
Steel Structure: 7,400 tons
Concrete: 66,000 m^3

KUBAISA CEMENT PLANT

PROJECT DETAILS

LOCATION:
Kubaisa, Iraq

OWNER / CLIENT:
State Organization of Industrial Projects - SOIP

PROJECT DURATION:
Jan 1986-May 1988

CONTRACT TYPE:
Lump Sum-Turnkey

CONTRACT VALUE:
US$ 16.9 Million

PROJECT DESCRIPTION

Turnkey construction of railcar bag and bulk cement loading facilities, heavy oil unloading system and railway.

ENKA SCOPE OF SERVICES

Between 1986 and 1988, ENKA's wholly owned subsidiary, ENKA Teknik constructed the railcar bag and bulk cement loading facilities of the Kubaisa Cement Plant.

ENKA

BUSINESS CENTERS & HIGH RISES
INDUSTRIAL PLANTS
MALLS AND SHOPPING CENTERS
PUBLIC BUILDINGS
URBAN DEVELOPMENT
USA EMBASSY PROJECTS

MALLS & SHOPPING CENTERS

KASHIRSKAYA MULTIFUNCTIONAL TRADE CENTER , RUSSIAN FEDERATION

KUNTSEVO MULTIFUNCTIONAL TRADE & BUSINESS CENTER, RUSSIAN FEDERATION

KAPITOLIY SHOPPING CENTER / SERGIEV POSAD, RUSSIAN FEDERATION

IKEA MEGA COMMERCIAL CENTRE, KHIMKI, RUSSIAN FEDERATION

METROPOLIS SHOPPING CENTER, RUSSIAN FEDERATION

KAPITOLIY SHOPPING CENTERS, RUSSIAN FEDERATION

MALLS & SHOPPING CENTERS

KASHIRSKAYA MULTIFUNCTIONAL TRADE CENTER

PROJECT DETAILS

LOCATION:
Moscow, Russian Federation

OWNER / CLIENT:
ENKA TC

PROJECT DURATION:
Oct 2015 – Dec 2017

CONTRACT TYPE:
Lump Sum

CONTRACT VALUE:
US$ 210 Million

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:
Received a green building certificate - Green Standard in November 2017

PROJECT DESCRIPTION

During the 3rd Quarter of 2015, ENKA started its new project in Moscow to deliver a modern community hub for the city: the Kashirskaya Multifunctional Trade Center. The project features a complex that conveniently includes public retail, fitness, cinema, entertainment, F&B and hypermarket amenities. Having a total area of 196,750 m^2, the project aims to create a pedestrian-friendly neighborhood destination that celebrates its existing natural surroundings of waterfronts and landscape. The site's easy accessibility, connection to local parks, and vibrant, visible public spaces, ensures plenty of activity and interaction within the project area.

The shopping mall, Kapitoliy-Kashirskaya, which was opened for business in 2001, is the second mixed–use project to be newly constructed: Kashirskaya Multifunctional Trade Center. The existing shopping center with a gross area of 30,038 m^2 was demolished and is being replaced by a modern shopping center with a net leasable area of 73,000 m^2 and a multi-storey underground car park with capacity for 1,440 cars. The project is the second re-development Shopping Mall project for ENKA TC, one of the leading commercial real estate developers in the Russian Federation, and a subsidiary of the ENKA group of companies.

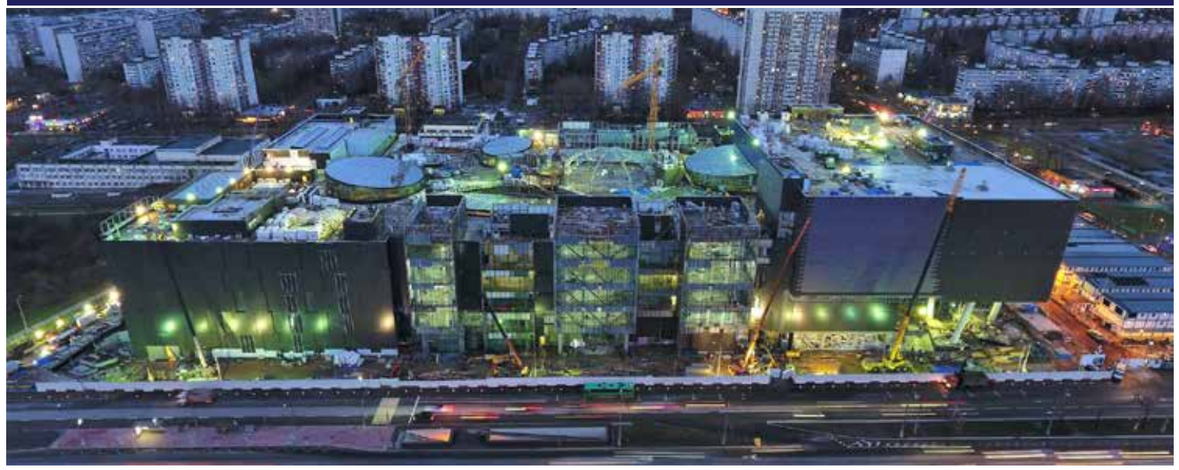
Visitors to the mall will encounter architecture featuring clustered masses and extruded facades that will invite exploration. Combining warm stone with glass reveals at street level, as well as an atrium and upper levels, the building envelope creates a solid/void experience, offering fleeting glimpses into its interior. Inside, the layers of public space encapsulate a blend of organic inspirations. Defining each major internal hub, the elements of water, air, fire, and earth are colorfully highlighted in four experiential atrium plaza districts.

Set amidst Moscow's exacting urban geometry, the Kashirskaya Multifunctional Trade Center's landscape breaks away from the city grid to deliver an organic terrain that naturally draws energy from the surrounding communities and luxuriant nature. The nearby river serves as inspiration for the fluid motion juxtaposed against the adjoining, rigid Apple Park grid, and sets the tone of the overall landscape design. The park's sprawl extends further into the multi level outdoor social and dining spaces with views across the landscaped areas to the river and beyond.

The aim for Kashirskaya is to extend the urban vivacity of Moscow as a public destination in a way that will boost future development in the city. This modern community hub will not only be an important local amenity for entertainment and commercial attractions, but an economically viable and socially dynamic city space that will energize the evolution of the Moscow region.

ENKA

KASHIRSKAYA MULTIFUNCTIONAL TRADE CENTER



ENKA SCOPE OF SERVICES

ENKA was contracted by ENKA TC to provide mobilization work, including the installation of tower cranes, demolition of the existing building, the removal and utilization of waste, installation of piles along the perimeter of the excavation pit, development of the excavation pit together with removal and utilization of soil, the construction of solid reinforced concrete and steel structures, partitions, the installation of all necessary internal engineering and fire-fighting systems and a range of utility systems, internal and external finishing, which included the finishing of the facades and glazing, landscaping, including the layout and expansion of roads and the landscaping of the adjacent territory, connection of the external utility lines and networks and commissioning for the project.

Major Quantities

Commodity	UoM	Total
Excavation	m^3	363,668
Concrete	m^3	127,548
Reinforcement	ton	22,424
Steel Structure	ton	6,276
Façade	m^2	60,186
Parking Area	m^2	57,680
Gross Construction Area	m^2	196,750

KUNTSEVO MULTIFUNCTIONAL TRADE & BUSINESS CENTER

PROJECT DETAILS

LOCATION:
Moscow, Russian Federation

OWNER / CLIENT:
ENKA TC

PROJECT DURATION:
Apr 2011 – Aug 2015

CONTRACT TYPE:
Lump Sum

CONTRACT VALUE:
US$ 405 Million

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- ENKA, together with the Kuntsevo Multifunctional Trade Business Center Project, was awarded the Cityscape Award for Emerging Markets by Cityscape Global Project, the Best Shopping Center 2015 Award by Russian Council of Shopping Centers and the Best Facility for Customers Award, Silver Mark by The Review Competition.
- The mixed-use project that comprises commercial squares with multi-story parking, a hypermarket, office and entertainment towers, was developed to be one of the first multifunctional buildings in the Russian commercial real estate market.
- Became one of Russia's 37 green investment projects after receiving a green building certificate (Green Standard – GOLD) in April 2013.

PROJECT DESCRIPTION

Since ENKA has a long-term commitment to the Russian Commercial Real Estate market, a decision was made to redevelop its existing shopping malls. The shopping mall Kapitoliy-Kuntsevo, which became operational in 1997, was the first to be newly constructed as a mixed–use project: Kuntsevo Plaza.

Officially opened on January 23, 2015, Kuntsevo Plaza is located in Moscow's Yartsevskaya Street, in the same vicinity as Molodezhnaya metro station.

The entire complex amounts to 245,000 m², while the Gross Leasable Area of the retail part is corresponding to 65,000 m². Furthermore, four levels of underground parking, with over 2,000 lots, are designated for retail.

Located in a district within a prestigious neighborhood, featuring a rich collage of universities, city administrations, medical facilities, and residential amenities, which is admired for its natural beauty and wealth of history, Kuntsevo Plaza was designed as a place for the local community, business people, and visitors alike. Innovative design and planning, based on contextual and historical inspirations, the Kuntsevo district creates a compelling, site-specific addition, as well as a new heart and urban living space.

The plaza's design sets out to achieve the highest standards both in environmental and social sustainability. The use of various local materials is highlighted and maximum exposure to the sun and extensive use of natural light is implemented throughout the project. The green rooftops reduce the cooling loads and offer additional public open space, all unifying to promote a model of economic, social, and environmental sustainability not only for Kuntsevo but all of Moscow.

Among the anchor tenants of the complex there are: the Auchan hypermarket on two levels (13,800 m²) and the World Class fitness center, including a swimming pool (2,800 m²). Kuntsevo Plaza offers its visitors a wide entertainment component including the MORI CINEMA multiplex with eight screen salons (6,900 m²), the Cosmic entertainment center (3,010 m²) with bowling and Q-Zar, as well as a unique food and beverage area with a food court, chef restaurants, and a two-level Sky Bar with terraces.

ENKA

KUNTSEVO MULTIFUNCTIONAL TRADE & BUSINESS CENTER

Apart from this, the Kuntsevo Plaza shopping gallery features amongst others, fashion brands such as HUGO BOSS, CK Jeans, Armani Jeans, SONY, Massimo Dutti, Lacoste, PINKO, Michael Kors, Maje, Mango, ZARA and Sandro.

As a whole, the five-level shopping and entertainment center includes 200 stores.

In addition to its spectacular light-filled retail and entertainment spaces, the complex consists of office buildings (25,000 m²) and a small number of apartment units. Through its synergistic combination of retail, entertainment, dining, cultural uses, state-of-the-art office and modern residential, within a single, world-class facility, all designed at an experientially articulated pedestrian scale, Kuntsevo Plaza further enhances its respected, historic city, breathing new life into Moscow.

ENKA's range of work as the main contractor for Kuntsevo Multifuntional Trade & Business Center, comprised: demolishing the existing 19,400 m² shopping center, design management, procurement, execution of all branches of construction, start-up, as well as testing and commissioning of new building.

UNIQUE CHALLENGES

Due to its presence in the Russian Federation, since 1990, ENKA is an experienced contractor with an extensive knowledge of local standards, work procedures and state policies that has solved many unforeseen challenges in the process of execution of projects. Design, procurement, local work permits and construction teams has enabled them to work reliably and with balance. As a result, the Kuntsevo Plaza had its grand opening on time. The four most significant challenges faced and overcome by the professionals are listed as follows:

1. The Russian Authorities suspends work during the periodical inspections of the work and the commissioning of the building. In order to pass local authority inspections, all the design documentation prepared by the international design firms, such as Jerde, EMPG, Berksan and Dinamik, was checked and approved by their semi-official Russian counterparts, leading to many revisions of the design and technical documentation prior to the inspections. This efficient practice saved a great deal of time and money by averting the suspension of work that would not have otherwise been approved by local authorities.

2. Delayed provision of design solutions to in situ problems – Communication between various design teams around the globe has always presented a big challenge. The lack of strong communication would have resulted in irretrievable idle periods and would have had an impact on time and cost for the project. Having continuous of representation of all the design firms on site for the full time integration and collaboration of all the disciplines proved to be the best solution for maintaining the strict schedule of this fast track project.

3. Multiple milestones with various dates for the different sections and shops of the mixed-use complex – Zone based modeling and zone management made it possible for various lease holders to commence their own fit out work without hindrance from neighboring premises. This approach also eased the hazard control of leased spaces and created a more secure area.

Major Quantities

Commodity	UoM	Total
Excavation	m³	621,970
Concrete	m³	203,544
Reinforcement	ton	33,186
Steel Structure	ton	4,394
Façade	m²	69,697
Underground Parking Area	m²	2,000
Total Leaseable Area	m²	65,000

4. Interruption of material flow due to global and local weather conditions, public holidays – Kuntsevo Plaza has been created using materials from different parts of the world. ENKA prepared and strictly followed the Material Flow Chart, taking into consideration public holidays of the origin of material. Conversely, the procurement department periodically warned the professionals in the team of the dangers of late consignments. Moreover, apart from the usual limitations to transport, such as frozen waterways for six months of a year, weather conditions and the transport of vehicles were tracked in every way possible.

SERGIEV POSAD MULTIFUNCTIONAL SHOPPING CENTER

PROJECT DETAILS

LOCATION:
Moscow, Russian Federation

OWNER / CLIENT:
ENKA TC

PROJECT DURATION:
Apr 2013 – Sep 2014

CONTRACT TYPE:
Lump Sum

CONTRACT VALUE:
US$ 210 Million

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- Largest Shopping Center in Sergiev Posad.
- 1.8 Million work hours without a lost time incident.
- Management of the construction, to ensure the project remained within the established budget.

PROJECT DESCRIPTION

During the 2nd Quarter of 2013, ENKA started a new Shopping Mall project in the Moscow Region for ENKA TC, a subsidiary of the ENKA group of companies, is one of the leading commercial real estate developers in the Russian Federation. The shopping mall in Sergiev Posad has been in operation since the beginning of August 2014.

The gross building area of the complex amounts to 36,750 m², while the Gross Leasable Area of the retail part is corresponding to 24,883 m². Furthermore an open car-park area with over 696 lots is designated to retail. The shopping mall hosts a cinema with five salons, an entertainment center, a children's playground and a food-court area, including several restaurants and cafes. In its entirety, the shopping center includes more than 100 retail stores, in addition to the 7,000 m² supermarket.

Adhering to high quality standards, this is essentially a new approach to the concept of a shopping center with a suitable tenant mix that enables citizens to overcome the limitations of everyday routine, while combining shopping experience with leisure. A modern entertainment center with a multiplex cinema and free open-air parking, provides people with a variety of up to date recreational activities, while creating a popular and unique venue for the city.

ENKA has self-performed and successfully completed the project on a lump sum turnkey basis, using its project management and implementation expertise, covering a full range of basic and detailed engineering, procurement, construction, erection, commissioning, and operation phases to the full satisfaction of ENKA TC. Construction on the Sergiev Posad Shopping Mall was completed with investments totaling US$ 59 Million.

ENKA

SERGIEV POSAD MULTIFUNCTIONAL SHOPPING CENTER

UNIQUE CHALLENGES

The ancient town of Sergiev Posad, located just outside Moscow, is one of the pearls of the Golden Ring of historic towns that surrounds the capital. Located about 70 km from the city, the town is dominated by its UNESCO world heritage site. While executing the work, ENKA successfully managed cultural relations with locals to avoid any clashes and maintained good relations with its neighbors. Environmental sensitivity of the historical city was carefully maintained; in addition, ENKA took some environmental measures to protect the nature.

First and foremost, ENKA brought its Zero Accidents philosophy to its execution and built a strong safety and security plan that was strictly implemented throughout the duration of the project to protect their workforce and their customer, as well as the environment and communities surrounding the Project. Safety is always ENKA's top priority.

Major Quantities

Commodity	UoM	Total
Excavation	m³	90,000
Concrete	m³	23,000
Steel Structure	ton	156
Precast Piles	pcs	1,978
Roof Covering	m²	10,550
Total Leasable shops Area	m²	24,600
Total Floor Area	m²	39,702

IKEA MEGA COMMERCIAL CENTER

PROJECT DETAILS

LOCATION:
Moscow, Russian Federation

OWNER / CLIENT:
LLC IKEA MOS (Retail and Property)

PROJECT DURATION:
Sep 2003-Jan 2005

CONTRACT TYPE:
Lump Sum-Turnkey

CONTRACT VALUE:
US$ 115 Million

MAJOR QUANTITIES:
Land Plot: 44 ha
Construction Area: 186,000 m²
Car park area: 32,000 m²
Total Floor Area: 212,644 m²

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- During periods of busiest activity, about 1,700 workers and technical and administrative personnel had been employed in the project.

PROJECT DESCRIPTION

The contract for the construction of the commercial center, located in the Khimki district of Moscow, an investment project of LLC IKEA MOS (Retail and Property), was signed in August 2003 and included all additional work.

The commercial center occupies a 44-hectare plot and is primarily a 2-storey building with an additional mezzanine floor of 3,000 m² for the cinema complex, having a total construction area of 186,000 m², including the 32,000 m² car park.

The structure of the Mega Building is predominantly reinforced concrete, with steel and pre-cast concrete columns of various spans up to 24 m.

The IKEA Office building, which is connected to the Mega building, is a separate three-storey reinforced concrete structure, with a construction area of 5,000 m² and the Auchan hypermarket building is another separate, single-storey building connected to the main Mega Building. It has a mezzanine floor and has a construction area of 46,000 m² including a 22,000 m² underground parking space.

All the facades on the buildings are a combination of insulated sandwich panels, brick walls and glazing.

The Do-It-Yourself (DIY) OBI Store, constructed at the northwest end of the Mega building is 19,000 m². The main part of the building features reinforced concrete columns, a steel roof structure and a facade made of sandwich panel cladding. Its winter garden section has steel structure columns, a roof and a fully glazed facade.

The main entrance of the Mega building opens onto a main hall with an area of 6,000 m², has a space truss roof with spans of up to 52 m and accommodates a food court, cafes and coffee shops, adorned with vegetation, and an ice rink that operates throughout the year.

ENKA SCOPE OF SERVICES

The scope of the project included all the design, procurement and construction (all civil, structural, architectural, MEP and utility works).

The mechanical and electrical systems included in the project were HVAC, hot and cold water supply and fire water mains, power supply and lighting, intruder alarm system, CCTV system, fire alarm and fully automatic sprinkler systems, public announcement and emergency evacuation systems, smoke extraction and pressurization systems, building automation and control systems, as well as a theatrical sound and lighting system, located in the main hall, above the ice rink.

METROPOLIS SHOPPING CENTER

PROJECT DESCRIPTION

Owned by CAPITAL PARTNERS, the Metropolis Project is a mixed-use center, encompassing a shopping/retail center, three A Class office buildings and a multilevel car park, all of which total a construction area of 350,000 m². The shopping/retail center contains a hypermarket with an area of 6,800 m², shops, boutiques, a recreation center, a food court with an area of 2,700 m², a restaurant with capacity for 380 customers, 12 cinema halls and a fitness center. The shopping/retail center has an underground car park with capacity for 1,500 vehicles and above ground a multi-level car park with space for 1,400 vehicles.

ENKA SCOPE OF SERVICES

The glazed aluminum facade cladding serves as a ventilated facade for the office buildings and an insulated sandwich panel for the retail build-ing. The structures are designed as cast-in-situ reinforced concrete foundations, columns, beams, slabs and walls around the elevator shafts, utilizing conventional formwork systems.

The contractual work also included site dewatering and the removal of the existing building's foundations.

The mechanical and electrical systems include: a HVAC system; hot and cold water supply system; elevators and escalators; a power supply and a lighting system; an intruder alarm system; a fully automatic sprinkler system; a smoke extraction and pressurization system; building; building au-tomation and control systems, as well as auto-mated car parking systems.

PROJECT DETAILS

LOCATION:
Moscow, Russian Federation

OWNER / CLIENT:
Capital Partners.

PROJECT DURATION:
Sep 2006-May 2009

CONTRACT TYPE:
Lump Sum

CONTRACT VALUE:
US$ 320 Million

MAJOR QUANTITIES:
Total Floor Area: 350,000 m²

PROJECT DETAILS

LOCATION:
Russia Federation

OWNER / CLIENT:
ENKA TC

PROJECTS' DURATION:
Kapitoliy Vernadskogo
Jan 2005 - Sep 2006
Kapitoliy Maryina Roscha
May 1999 - Dec 1999
Kapitoliy Kashirskoe Shosse
May 2000 - Jan 2001
Kapitoliy Belyaevo
Feb 2002 - Oct 2002
Kapitoliy Leningrdaskiy
May 2002 - Dec 2002
Kapitoliy Podolsk
May 2003 - Oct 2003
Kapitoliy Sevastopolsky
Sep 2003 - Sep 2005
Kapitoliy "Outlet"
Sep 2004 - Aug 2005
Kapitoliy Orekhovo-Zuevo
Jan 2007 - Sep 2007
Kapitoliy Sergiev Posad
Apr 2013 - Sep 2014
Kuntsevo Plaza
Apr 2011 - Aug 2015

CONTRACT TYPE:
Lump Sum Turn Key

CONTRACT VALUE:
US$ 364 Million

PROJECT DESCRIPTION

ENKA TC is a shopping mall operator based in Russia. ENKA TC (formerly known as "RamENKA") was founded in 1997 and is one of the first foreign retailers in the Russian food retail market.

Today ENKA TC owns and operates 10 shopping malls under the "Kapitoliy" brand name, 9 of which are located in Moscow and the Moscow Region; the other one is in St. Petersburg. The total overall closed area of these shopping malls adds up to 442,000 m².

"Kapitoliy" shopping malls are homes to more than 900 stores, complete with supermarkets, cinemas, restaurants, health clubs and performance areas. These stores are the world's top fashion, luxury, electronic, and entertainment brands that satisfy every retail desire. Victoria's Secret, Auchan, MediaMarkt, Worldclass, Castorama, Mac, Zara, Lacoste, Baldinini, Starbucks, Torro Grill, Loving Hut, IMAX, Karo Film, Mothercare, La Senza, Calvin Klein, Gant, Tommy Hilfiger and Levi's are some of them.

More than 54 million customers visit the shopping malls of ENKA TC annually.

Two of the most significant shopping mall projects of ENKA TC won the "Best Shopping Center" awards of the Commercial Real Estate Committee in Russia.

Furthermore, the shopping mall "Kapitoliy-Sevastopolsky" in Moscow has been awarded "The Most Convenient Shopping Center in the South-West Administrative District of Moscow." Apart from the stores in shopping centers, the company started renting large scale offices in 2007 by renting offices at the Vernadskovo complex.

Since ENKA TC has a long-term commitment in the Russian commercial real estate market, the company has made a decision to redevelop its existing shopping malls. The shopping mall "Kapitoliy-Kuntsevo," which began operation in 1997, is the first mixed-use Project, with a total area of circa 242,000 m²; the construction of which has recently been completed in 2015 . It is a unique approach to the combination of shopping, entertainment and retail in an extraordinarily new architectural style.

KAPITOLIY MARYINA ROSCHA

29, 600 M²

Procurement & construction of a hypermarket, store and shop offices group with a total floor area of 8,000 m² and a shopping mall with a total floor area of 24,700 m² in three floors including infrastructural works and parking area.

KAPITOLIY VERNADSKOGO

114,200 M²

Construction of a shopping center which consists of 5,580m² hypermarket, 1,300m² storage area with 45 check-outs and 53,300 m² mall including an aquapark and 6 halls multiplex cinema complex and 33,000 m² closed car parking and open car parking.

KAPITOLIY "OUTLET"

48,500 M²

Construction of a shopping center, including; Mall, hypermarket, storage areas, multi-storey parking, multiplex cinema complex.

KAPITOLIY SEVASTOPOLSKY

55,900 M²

Construction of a shopping center including 4,400 m² hypermarket, 800 m² storage area with 28 check-outs, 25,000 m² mall and a multiplex cinema complex, 18,000 m² closed and open car parking.

KAPITOLIY PODOLSK

16,000 M²

Renovation and transformation of an existing factory building into a shopping mall.

KAPITOLIY LENINGRDASKY

72,006 M²

Construction of a shopping center, including 8,720 m² hypermarket with 41 pay desks, 1,700 m² storage area, 28,000 m² mall and a multiplex cinema complex with 23,600 m² with covered car parking

KAPITOLIY BELYAEVO

26,500 M²

Hypermarket, store / shop, underground car parking, movie theatre complex and offices, including outside parking area and infrastructure works.

KAPITOLIY OREKHOVO-ZUYEVO

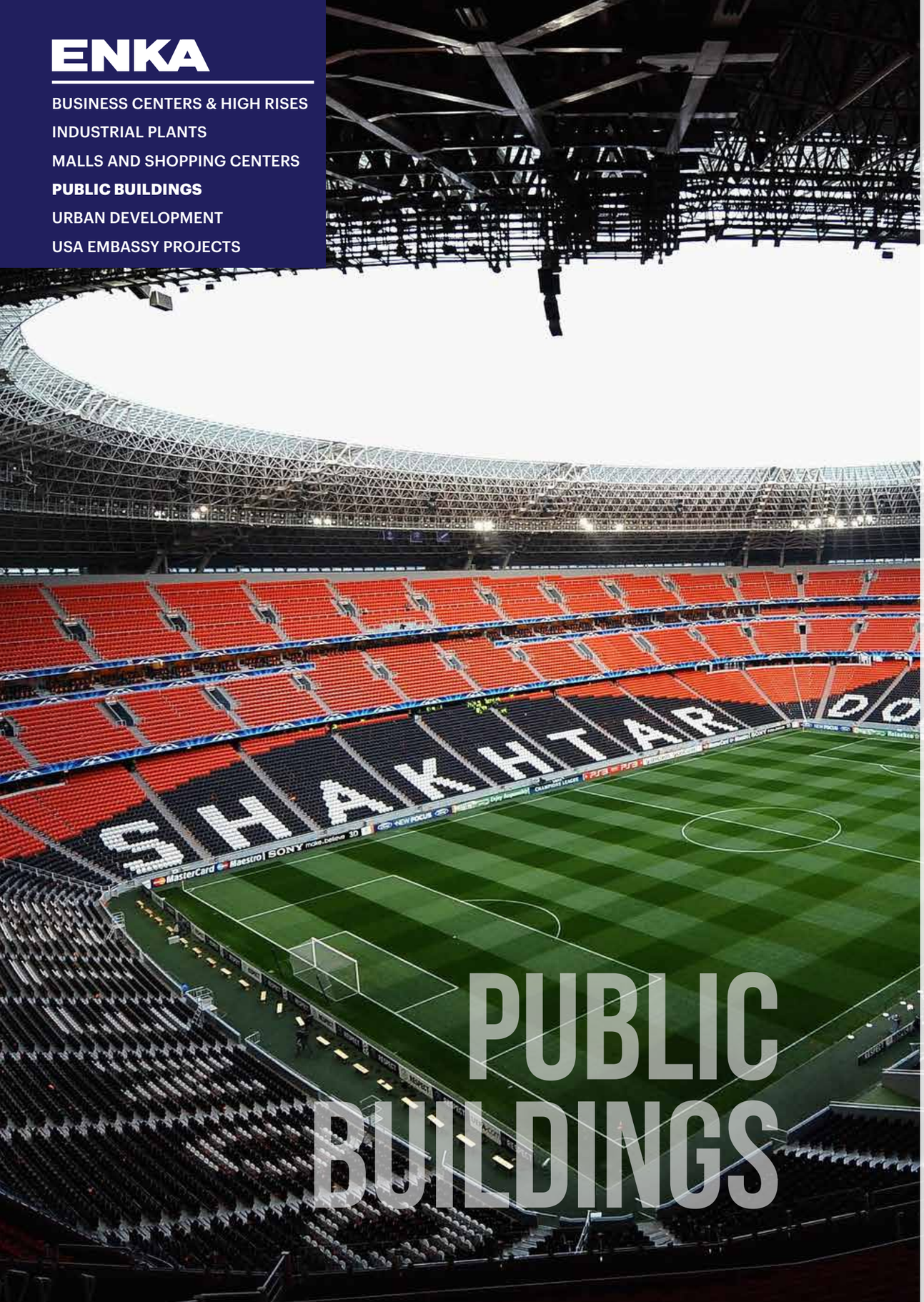
21,300 M²

Construction of a shopping center including hypermarket, children playground, a cinema komplex and parking area

The shopping mall "Kapitoliy Udelniy Park" in St. Petersburg was honored with the "Best Shopping Center of St. Petersburg" award in 2006, and the shopping mall "Kapitoliy-Vernadskovo" in Moscow received the "Best Large-Scale Shopping Mall of Moscow" award of CRE in 2007.

ENKA

BUSINESS CENTERS & HIGH RISES
INDUSTRIAL PLANTS
MALLS AND SHOPPING CENTERS
PUBLIC BUILDINGS
URBAN DEVELOPMENT
USA EMBASSY PROJECTS



PUBLIC BUILDINGS

BAKU INTERNATIONAL AIRPORT, AZERBAIJAN

CONSTRUCTION OF THE MAUSOLEUM, MOSQUE, LIBRARY, GABON

DEVELOPMENT OF MUSCAT INTERNATIONAL AIRPORT MAIN CONTRACT 3, OMAN

FC SHAKHTAR STADIUM, DONBASS ARENA. UKRAINE

LAPINO PERINATAL MEDICAL CENTRE, RUSSIAN FEDERATION

MOSCOW INTERNATIONAL HOUSE OF MUSIC, RUSSIAN FEDERATION

SHEREMETYEVO INTERNATIONAL AIRPORT, TERMINAL 3, RUSSIAN FEDERATION

SWISSÔTEL KRASNYE HOLMY, RUSSIAN FEDERATION

UFA PERINATAL MEDICAL CENTRE, RUSSIAN FEDERATION

MULTIFUNCTIONAL MEDICAL COMPLEX IN GELENDZHIK, RUSSIAN FEDERATION

PUBLIC BUILDINGS

BAKU INTERNATIONAL AIRPORT

PROJECT DETAILS

LOCATION:
Baku, Azerbaijan

OWNER / CLIENT:
State Concern of Civil Aviation Azerbaijan Airlines - AZAL

PROJECT DURATION:
Jan 1998-Jun 1999

CONTRACT TYPE:
Lump Sum - Turnkey

CONTRACT VALUE:
US$ 67 Million

MAIN QUANTITIES
Construction Area: 54,000 m²
Passenger Capacity per hour : 1,600

PROJECT DESCRIPTION

Baku International Airport is located in Baku, the capital and largest city of Azerbaijan. The airport is approximately 25 km east of downtown Baku with a travelling time of approximately 40 minutes.

The construction of a new international airport at Baku, Azerbaijan was originally initiated in 1982; however, construction work had to be suspended several times. Due to this disruption, only the erection of the steel frame, pre-cast floors and claddings of the buildings were completed in the space of several years.

ENKA SCOPE OF SERVICES

After securing the necessary financing through sources, such as TEXIM, ECGD, EBRD and a number of commercial banks, ENKA, and its joint venture partner, signed the contract with Azerbaijan Airways and started construction in January 1998.

The project entailed the construction of five interconnected buildings within the airport complex, fitted out with the latest equipment. ENKA completed the project in November 1999. The airport comprises a total construction area of 52,000 m² and was designed to serve 1,600 passengers per hour. It houses duty free shops, restaurants, cafes, bars, VIP lounges, and car-rental and hotel reservation facilities.

The airport renovation was split into two phases, with phase one relating to the completion of two modules, which comprises the north terminal, together with the lobby to gate one. The work for phase one was completed in March 1999.

The second phase comprised the completion of the two remaining modules, which form the south terminal and a central module that is used by AZAL as an administration and air traffic control center.

The work for phase two was completed in June 1999. The renovation of the airport included extensive work on terminal systems like the baggage handling, flight information displays and a public address facility. Reconstruction also involved the upgrading of air-conditioning, water supply, heating and sewerage services.

In addition, the renovation of the airport terminals involved the installation of high and low-voltage distribution systems, passenger boarding bridges, aircraft docking guidance systems, lifts and escalators, X-ray and security equipment, and airport furniture and signs.

THE MAUSOLEUM, MOSQUE, LIBRARY & MUSEUM

PROJECT DESCRIPTION

The Mausoleum Project is located in Franceville city in the southeast of Gabon. The Project is dedicated to the former president of the Gabonese Republic, El Hadj Omar Bongo Ondimba, and includes a Mausoleum, Mosque, Library and Museum, as well as other service buildings.

UNIQUE CHALLENGES

It is a prestige project for Gabon and ENKA allocated all the necessary resources, in order to achieve the planned completion date, which was the anniversary of El Hadj Omar Bongo Ondimba becoming president.

The logistics of the project was one of the major challenges, including offshore transportation, difficulties resulting from the harsh tropical seasons of the country, the constraints presented by the road between Libreville and Franceville and also due to the project's very tight schedule.

In addition, a lack of skilled labor in the remote part of the country created another challenge and required ENKA to bring labor from various parts of the world as well as expatriate personnel from Turkey. Despite this, the project was completed with 50% local content. ENKA successfully trained and managed local personnel in various fields with the compulsory and rigorous safety program and the tough human resources management program.

ENKA SCOPE OF SERVICES

The scope of the project included engineering, procurement and underground construction, structural, mechanical, electrical, architectural and finishing work. Some art works, which include handmade zellige tiles and carved wood work, were completed by the architect's team of Moroccan artists.

PROJECT DETAILS

LOCATION:
Franceville, Gabon

OWNER / CLIENT:
The Precidency of the Gabonese Republic.

PROJECT DURATION:
Apr 2013-Dec 2014

CONTRACT TYPE:
Lump Sum

CONTRACT VALUE:
US$ 38 Million

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- ENKA was the first company in the history of Gabon to achieve 1,000,000 work hours without any lost time incident and ENKA was rewarded by the Client for their outstanding success, despite the excessive challenges.
- The President of Gabonese Republic also awarded ENKA with a Certificate of Recognition.

Major Quantities

Commodity	UoM	Total
Excavation	m³	94,042
Concrete	m³	13,453
Underground Piping	m	2,468
Total Direct Manhour	mhr	1,353,584
Total Manpower	ea	826
Total Floor Area	m²	8,500

DEVELOPMENT OF MUSCAT INTERNATIONAL AIRPORT MAIN CONTRACT 3

PROJECT DETAILS

LOCATION:
Muscat, Oman

OWNER / CLIENT:
Ministry of Transport and Communications Public Authority for Civil Aviation.
Engineer: COWI-LARSEN Joint Venture (former).
Hill International . Project Management Consultant: ADPI

PROJECT DURATION:
Feb 2011-Dec 2016

CONTRACT TYPE:
Design and Build,
Lump Sum Fixed Price

CONTRACT VALUE:
US$ 1.8 Billion

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- The Development of Muscat International Airport project is the largest ever to be undertaken in the history of Oman.
- Once completed, the New Muscat airport will be the new gateway to the Sultanate of Oman
- State of art Passenger Terminal Building
- 14 Million man-hours without LTI

PROJECT DESCRIPTION

On February 23, 2011, ENKA and Co. LLC - Bechtel and Co. LLC – Bahwan Engineering Company LLC unincorporated consortium (BEB), was awarded the Main Contract 3 for the development of the Main Terminal Buildings of the Muscat International Airport. The design is to be developed on the basis of the design prepared by the COWI-Larsen Joint Venture. The contract is a Design and Build, Lump Sum Fixed Price contract, except where any item or work, described as provisional or prime cost, is subject to adjustments in accordance with the provisions of the contract.

BEB carried out and is fully responsible for the development and completion of the design, procurement, manufacture, supervision, delivery to site, construction, erection, inspection, testing, trial operation, commissioning and maintenance of equipment and the remediation of defects for the facilities, in accordance with the Employer's Requirements.

UNIQUE CHALLENGES

The steel structure of the Passenger Terminal Building consists of extremely heavy 3D curved trusses. The first challenge was production, as the manufacturing of such irregular components had its own challenges; however, Cimtas successfully completed production. Transportation also presented challenges, due to size limitations and the components being produced at the Cimtas factory in one piece, shipped to site in pieces and welded back together on site, as a pre-assembled truss ready for lifting into place. As the weight of the trusses was substantial, two crawler cranes of 1,600-ton capacity were used. The erection was safely completed, notwithstanding the challenges of an active runway next to the site, together with interface challenges.

ENKA SCOPE OF SERVICES

The buildings and structures in the contract include: Passenger Terminal Building: Enclosed Area – 247,633 m^2, North, South and West Piers: Approximately 111,633 m^2, Traffic Concourse: Approximately 71,094 m^2, North and South Multistory Car Park: Approximately 116,318 m^2, North and South Multistory Forecourt Buildings and Lift Building: Approximately 35,615 m^2, Forecourt Plaza: Approximately 37,144 m^2, Taxi Drivers Facility Building: Approximately 800 m^2

ENKA

DEVELOPMENT OF MUSCAT INTERNATIONAL AIRPORT MAIN CONTRACT 3

Other Buildings (Provisional Sum)

- Guardhouse VIP (approx. 50 m^2)
- OAMC Airside (approx. 12,500 m^2)
- Ground Handler Workshop (approx. 8,000 m^2)
- Staff Amenities Building (Maintenance Yard) (approx. 1,154 m^2)
- Maintenance Yard Gate Building (approx. 2,300 m^2)
- Waste Management Building (approx. 500 m^2)
- Fuel into Plane Operators Building (approx. 2,796 m^2)

Access ramps

- 5 post tensioned viaducts, total length of 800 m and max. span 51 m (Approximately 12,380 m^2)

Bridges (approx. 1740 m^2)

Surface Car Parking and Associated Roads

- Shaded car parking for 2,000 cars; open car parking for 2,000 cars, including shaded walkways to PTB

Roads and Car Park Areas

- Asphalt paved, approx. 271,008 m^2
- Hard landscaped, approx. 65,988 m^2
- Soft landscaped approx. 74,662 m^2

Hard landscape around Buildings

- Approximately 18,602 m^2

The Gross closed building area is around 647,480 m^2 with capacity for 12 million passengers per annum (mppa) extendable to 24 mppa and 36 mppa.

In addition to the main quantities specified below, the extent of the work also includes special equipment installations, such as a Conveying System, Visual Docking System, Media Mesh, Signage and way finding systems. Integrated artwork, such as balustrades, glazed escalator sides, glass screens, water features, stone carvings and patterns.

The work of the consortium also includes the installation of MEP systems, such as Rain Water System, Plumbing System (domestic water & sewage systems), Fire Fighting System, Cooling Systems (pipes, valves, supports etc.) – Refrigeration, Ventilation / Air Conditioning & Ductwork, Building Management System (BMS), Water Feature & Pools, SCADA (Supervisory Control & Data Acquisition System), Power Distribution, UPS, Internal, External, Arch, Façade and Emergency Lighting, Lighting Control System, Small Power Installations, Fire Alarm, Public Address System, Car Park & Traffic Management System, Info Display System (containment only), Access Control System (containment only), CCTV System (containment only), IT Structured Cabling System (containment only).

As of the end of 2015, the completion percentage is 85%.

Major Quantities

Commodity	UoM	Total
Concrete Works	m^3	530,000
Rebar Works	ton	80,000
Earth Works	m^3	4 Million
Structural Steel	ton	31,000
Façade	m^2	135,000
Roofing	m^2	175,000
Blockworks	m^2	225,000
Screed	m^2	378,000
Asphalt Works	m^2	405,000

Major Quantities

Commodity	UoM	Total
Floor Covering Works	m^2	600,000
Wall covering works	m^2	600,000
Suspended ceiling	m^2	300,000
Doors including metal, wood, glazed, sliding and roller shutters	ea	7,100
Customized counter and desk furnitures	ea	723
Fixed glass partitions	m^2	33,000
Toughened bonded glass	m^2	33,000

SHEREMETYEVO INTERNATIONAL AIRPORT, TERMINAL 3

PROJECT DETAILS

LOCATION:
Moscow, Russian Federation

OWNER / CLIENT:
OAO Terminal

PROJECT DURATION:
June 2005-Nov 2011

CONTRACT TYPE:
Lump Sum - Turnkey

CONTRACT VALUE:
US$ 770 Million

ENKA SCOPE OF SERVICES:

- Engineering,
- Procurement,
- Construction

PROJECT DESCRIPTION

Sheremetyevo International Airport, one of the largest international airports in the Russian Federation, in addition to various Russian airlines, also serves more than 40 foreign carriers. Sheremetyevo Airport's principal carrier is Aeroflot Russian Airlines, Russia's largest air carrier, for which Sheremetyevo serves as the base. Initially, the airport had two terminals, Sheremetyevo 1 and Sheremetyevo 2, providing services for domestic and international routes. OAO AEROFLOT decided to build a third terminal to serve as Aeroflot's and its alliances' international terminal. Terminal 3 has a carrying capacity of up to 12 million passengers annually, and with the terminal in operation, Sheremetyevo International Airport complex has reached a total carrying capacity of 3,800 passengers per hour, combining arrivals and departures. ENKA was awarded the turnkey design and build contract by JSC TERMINAL in June 2005.

The terminal building consisted of a 6-floor reinforced concrete building. The footprint of the building is 52,000 m^2 and a total construction area is 170,000 m^2. The height of the terminal building is 38.5 m, and the roof has a steel structure dome with a diameter of 66 m and a steel main arch with canopies weighing more than 1,800 tons. The building's facade is composed of glazing, aluminum composite and natural stone. Apart from the terminal building, major work in the contract included an apron area of 374,000 m^2; a multi-story car park for 4,000 cars; a control tower; 12 fixed passenger bridges; various car and bus parks; external facilities, such as a water treatment plant and water supply lines, an MV switch room; infrastructure, including high voltage cable lines, sewage lines, fiber optic cable ducts; construction of the aircraft refueling system, and hard and soft landscaping. Check-in and passport counters and the lounge furniture were also included in the contract work.

ENKA

SHEREMETYEVO INTERNATIONAL AIRPORT, TERMINAL 3

UNIQUE CHALLENGES

- As the existing airport facilities were in operation throughout construction, extra special care had to be taken with regard to safety, environmental protection and security.
- The project was conducted with due diligence, taking into consideration compliance with Russian norms and also in accordance with the international (IATA) standards on design and engineering.
- Supply and installation of all of the existing utilities (including provision of power, cold & hot water supply) beyond the site borders were also included in the General Contractor's Scope of Works.
- The refueling system and its connections were included in the General Contractor's Scope of Works and all works including installation, testing and commissioning were conducted while the main systems of the airport was operational for other terminals.
- Permanent flyovers and access roads to and from the terminal and construction of all connections were conducted without any disturbance to the existing traffic to/from the running terminals.

Major Quantities

Commodity	UoM	Total
6 storey Terminal Building	m^2	170,000
3 storey Car park Building	m^2	83,000
Apron	m^2	374,000
Concrete Works	m^3	313,732
Rebar Works	ton	19,752
Excavation & Earth Removal	m^3	420,833
Backfill including gravel, sand and crushed aggregate, which were all imported	m^3	608,902
Flyover Bridge	m^2	19,750
Highway	m^2	46,330
Viaduct	m^2	5,194
Access Roads and Flyovers	m^2	88,000

FC SHAKHTAR STADIUM, DONBASS ARENA

PROJECT DETAILS

LOCATION:
Donetsk, Ukraine

OWNER / CLIENT:
Stadion Shakhtar Limited.
Project Designer: Arup Sport

PROJECT DURATION:
June 2006-Sep 2009

CONTRACT TYPE:
Lump Sum -Turnkey

CONTRACT VALUE:
US$ 220 Million

ENKA SCOPE OF SERVICES:

- Engineering,
- Procurement,
- Construction

PROJECT DESCRIPTION

ENKA acted as the prime contractor. Construction began in 2006 and was completed in 2009. To erect the five-star arena to such a tight schedule (three years) over 1,600 people worked on site at peak times.

Turnkey construction of UEFA Elite Class stadium in Donetsk, Ukraine for 52,667 visitors, of which 3,680 are VIPs. The Stadium is an oval shape with an inclined roof. Inside the Stadium there are restaurants, bars, cafes, fast food facilities, a sports center, Club Museum and Shops.

The eye-catching stadium was designed by Arup Sport, which was the creative and inspirational force behind some of the world's greatest arenas, such as the City of Manchester Stadium (Manchester, England), Allianz Arena stadium (Munich, Germany), the new stadium of Valencia CF (Valencia, Spain), Sydney Football Stadium (Sydney, Australia), Beijing National Stadium (or the Bird's Nest in Beijing, China) etc. The total project budget was US$ 400 Million.

CAPACITY

- The total seating capacity of the stadium is 52,667.
- There are 290 seats for the media, of which 152 are for journalists and 138 seats for TV commentators (a combination of 46 commentary boxes).
- A total of 196 places and seats for people with disabilities and their carers (104 and 92, respectively).
- The stadium's 44 corporate boxes can accommodate a total of 915 people.
- Altogether 180 media representatives can always feel at home at the arena's spacious Conference Room.
- All the restaurants, bars and cafés at the stadium combined, total 1,830 covers.
- The stadium has more than 1,000 car parking spaces (245 of which are underground).

ENKA
FC SHAKHTAR STADIUM, DONBASS ARENA

UNIQUE CHALLENGES

Set within the beautiful Leninsky Komsomol Park, this stunning new home for FC SHAKHTAR has become a new symbol for Donetsk city, while providing an unforgettable match experience for spectators.

Its bowl design offers a high degree of comfort, as well as improved viewing quality. Immediately adjacent to the seating areas are a range of facilities catering for every fan's needs. In addition to adhering to Ukraine's codes and standards, the stadium's design meets the most current internationally recognized safety standards. The roof includes a large area of translucent sheeting material to improve daylight and sunlight penetration and promote improved natural turf-growing conditions. Furthermore, large open areas are incorporated into the perimeter of the lower-tier concourse to enable cross ventilation of the pitch. The external elevation of the building provides a seamless glazed facade and a high degree of transparency to the exterior of the building.

The stadium combines an elegance of form with simplicity of materials. It has become a landmark stadium for world class players and a worldwide audience. The stadium's conceptual design was developed to meet the specific requirements of the club for a natural playing surface, a seating capacity for 52,667 spectators, qualification for UEFA elite status, VIP suites with segregated viewing areas and underground VIP parking, as well as additional facilities such as a club museum, a club shop, a cafeteria and a health club. During the construction, considerable de-watering works were carried out to reduce the level of the underground water table. These were followed up with piling works to improve the load bearing capacity of the soil by using 400 mm x 400 mm friction piles. The tiers comprised a total of 3,400 pre-cast concrete elements. The total amount of concrete used in the works amounted to 120,000 m^3. The roof is a three dimensional, structurally efficient design that appears to float above the building. The shape inclines towards the south, resting on a dozen 60 m long steel support trusses that were manufactured and erected by Çimtaş and maneuvered with a giant, 600-ton mobile crane, able to lift steel structures in excess of 230 tons. These 12 steel support trusses designed and manufactured by Mero-TSK have a combined weight of 4,000 tons and carry the space-frame structure of the roof.

Major Quantities

Commodity	UoM	Total
Concrete	m^3	160,000
Rebar	ton	12,295
Excavation	m^3	458,761
Cabling	km	1,200
Pre-cast Element	ea	3,400
Tubular Pile	ea	3,248

LAPINO PERINATAL MEDICAL CENTRE

PROJECT DETAILS

LOCATION:
Lapino Village in Odintsoysky Region, Moscow, Russian Federation

OWNER / CLIENT:
LLC Haven (MD Medical Group Company)

PROJECT DURATION:
Dec 2010-Mar 2013

CONTRACT TYPE:
Fixed Lump Sum

CONTRACT VALUE:
US$ 95 Million

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- A Perinatal Medical Center was designed as a modern hospital complex providing family-oriented alternatives to in-patient technologies for all stages of health rehabilitation. The client's request for high standards for their elite clientele was satisfactorily met.

PROJECT DESCRIPTION

The Lapino Perinatal Medical Center comprises 42,686 m^2 and is situated on a 2.16 ha plot on the 1st Uspenskoye Highway, near Lapino Village, in the rural area of Nazarjevskoye in the Odintsovsky Municipal district of Moscow.

The Perinatal Center consists of three adjacent blocks, separated by expansion joints:

Block A – the main medical center with a basement and 5 floors above ground, has a comb shape layout.

Block B – the main food preparation center with a basement and one above ground floor has a semicircular shape layout.

Block C – a spa and rehabilitation center with a basement and 3 floors above ground, has a semicircular shape layout.

The hospital includes an in-patient ward with 87 beds and comprises:

- Obstetrics department: 50 beds, including a 37-bed physiology ward and a 13-bed pregnancy pathology ward
- Neonatal center: 17 beds including a 5 bed rehabilitation center for older children (1-3 years) and a 12-bed newborn pathology department
- Probationary ward: 10 beds
- Gynecology ward: 10 beds

The hospital comprises a pediatric consultancy-diagnostic center, designed for 150 visits per shift; a consultancy diagnostic center for adults (with 1 day-stay in-patient section) designed for 250 visits per shift; a laboratory; a spa-center with a rehabilitation therapy area, a cosmetology department and a swimming pool.

ENKA
LAPINO PERINATAL MEDICAL CENTRE

UNIQUE CHALLENGES

The basic and Stage P design of the Lapino Perinatal Medical Center had been elaborated as per the prevalent Russian norms and regulations for the medical institutions; whereas the Client requested to upgrade the hospital as an upscale facility to serve the upper class of Moscow population in a more secluded and quiet environment, incorporating the highest standards of mechanical and electrical amenities, as well as the luxurious finishing materials at the realization stage. Coping with the conflict between these upper level requirements and the initial design based on prevalent norms and making the required adaptations to this end was one of the main challenges to be encountered.

The project was finished and handed over to the Client and had been put into operation approximately six months ahead of the contractual Schedule, despite the delays and insufficient mode of work of Client's third party subcontractors for medical equipment and furniture which was another challenge to be faced.

ENKA SCOPE OF SERVICES

The work undertaken by ENKA comprises all the design:including all the basic design, Stage P design and all the working and detailed designand all procurement, all civil, structural, architectural, MEP and medical construction and the installation and commissioning works.

The scope of the construction included all civil and structural works, facade, all architectural finishing works interior decoration of the main lobbies and spa areas mechanical and electrical engineering systems, medical gas system, all weak current systems, including CCTV, security and access control, nurse call, public announce, fire alarm, building management and control systems, hardscaping and site work.

Major Quantities

Commodity	UoM	Total
Gross Area	m^2	42,686
Excavation	m^3	184,640
Reinforcement	ton	3,750
Façade	m^2	21,500
Concrete	m^3	25,000
Partition Walls	m^2	60,000
Aluminum & Ventilated Façade	m^2	21,500
Ceramis Tiles	m^2	31,500
Painting	m^2	108,500

MOSCOW INTERNATIONAL HOUSE OF MUSIC

PROJECT DETAILS

LOCATION:
Moscow, Russia

OWNER / CLIENT:
Moscow Government

PROJECT DURATION:
Mar 2001-Dec 2002

CONTRACT TYPE:
Lump Sum - Turnkey

CONTRACT VALUE:
US$ 72 Million

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- One of the largest concert halls in the world with 1,800 seats.
- The first concert hall built in Moscow for classical music in the last 100 years.

MAIN QUANTITIES
Total Construction Area:
47,000 m^2

PROJECT DESCRIPTION

Home to the world famous Russian violinist and conductor, Vladimir Spivakov's Virtuosi of Moscow Chamber Orchestra, the International House of Music is one of the largest concert halls in the world. It also has the distinction of being the first concert hall built for classical music in the city of Moscow during the last 100 years.

The building encompasses a 1,800 seat grand philharmonic concert hall, a 575 seat chamber music concert hall, a 532 seat multifunctional theatre, as well as several rehearsal rooms of various sizes, audio-visual recording studios, restaurants, cafes, shops, administrative premises and a two-story underground car park.

Following the award of the turnkey contract, the construction began in March 2001 and was completed by year-end 2002. The total construction area is 47,000 m^2. The primary component of the music house is a rounded spatial structure topped with a cupola, formed by an elegant blend of glass and stainless-steel architectural elements.

In the interior decoration of the building, wooden elements were widely used to provide superior acoustics. The structure accommodates two of the three concert halls, configured with one atop the other, each designed with separate entrances and lobbies.

One of the rehearsal halls is large enough to accommodate a philharmonic orchestra and allows for the highest possible quality audio recordings. To this end, for protection from external vibrations, the concert and rehearsal halls have all been isolated from the ground by inserting special neoprene elements between the lower and upper parts of the load-bearing structures.

This grand music house first opened its doors to guests in December 2002. Since 2003, this magnificent venue has welcomed numerous celebrated Russian and international musicians, artists and orchestras to perform under its cupola.

ENKA

MOSCOW INTERNATIONAL HOUSE OF MUSIC

UNIQUE CHALLENGES

- The complex was designed to be the home for the most sophisticated concerts and activities in Moscow.
- Unique design and engineering were undertaken for the acoustic and sound systems.
- The treble clef sculpture on the top of the building was designed by the Russian sculptor and architect, Mr. Zurab Tsereteli, and installed using a helicopter lift.
- The pipe organ inside the philharmonic hall was specifically designed and produced in Germany.

ENKA SCOPE OF SERVICES

Design

- Civil and Architectural Working Design
- Façade
- Mechanical Working Design
- Electrical Working Design
- Interior Design

Construction

- Civil and Architectural Works
- Façade Works
- Mechanical Works
- Electrical Works
- Interior Works

PROJECT DETAILS

LOCATION:
Moscow, Russian Federation

OWNER / CLIENT:
Moskva Krasnye Holmy JSC.

PROJECT DURATION:
Apr 2003-July 2005

CONTRACT TYPE:
Lump Sum - Turnkey

CONTRACT VALUE:
US$ 80 Million

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- First high rise building over 100 m in the center of Moscow

MAIN QUANTITIES
Total Cons. Area: 34,162 m²
Total Floors: 37
Maximum Height: 160 m
Reinforced Concrete: 22,875 m³
Façade: 33,881 m²

PROJECT DESCRIPTION

Fully opened in September 2005, following a soft opening in the July of the same year, the 235-key hotel, Swissôtel Krasnye Holmy, is one of the most recent additions to the Riverside Towers Business Center. With its slim, circular-shaped tower and its antenna reaching a height of 160 m, the hotel is one of central Moscow's tallest buildings.

The hotel's interior design is a grand flourish of contemporary style, well befitting Moscow's new image.

The 37-story high-rise takes full advantage of its height to afford its spacious rooms and suites clear views of Moscow with wall-to-wall, floor-to-ceiling windows. The rooftop bar, named City Space, commands a breathtaking 360-degree panorama. In addition, the hotel hosts three other bars, two restaurants, meeting and conference rooms, a full-floor banqueting facility, a health club with spa and swimming pool, as well as a dedicated business lounge for its executive guests.

The state-of-the-art room management system, as well as high-speed and wireless telecommunication facilities, makes life easy for the guests. The building's automation, fire protection and security systems surpass the highest international standards.

With work commencing in July 2003, ENKA completed the turnkey construction of the hotel, which has a total construction area of 30,000 m² within 26 months, including the installation of furniture, fixtures and equipment. The structure of the building is reinforced concrete with a foundation sitting on 1,000 mm diameter piles some 24 m long. The facade system is a combination of aluminum composite panel cladding, granite and stainless steel.

UNIQUE CHALLENGES

- Swissotel Krasnye Holmy, as the first high-rise building of its kind in Moscow's city center, required the relevant authorities, for the first time with this project, to develop and issue special specifications and requirements.

ENKA SCOPE OF SERVICES

Design

- Civil Working Design
- Architectural and Finishing Working Design
- Façade
- Mechanical Working Design
- Electrical Working Design
- Interior Design

Construction

- Civil Works
- Architectural and Finishing Works
- Façade Works
- Mechanical Works
- Electrical Works
- Interior Works
  - Public Areas FF&E
  - Hotel Rooms FF&E
  - Pool & SPA Centre
  - Bars & Restaurants
  - Kitchen & Laundry Equipment

Procurement and Logistics

- Local Procurement
- International Procurement & Logistics

PROJECT DETAILS

LOCATION:
Russian Federation,
Bashkortostan Republic, Ufa

OWNER / CLIENT:
LLC MD Proekt 2010 (MD Medical Group Company)

PROJECT DURATION:
Apr 2013-Oct 2014

CONTRACT TYPE:
Fixed Lump Sum

CONTRACT VALUE:
US$ 73 Million

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- 1st Private Family Medical Centre of Bashkortostan Republic
- Medical Center has been designed as a modern complex providing a family oriented alternative to in-patient technologies for health rehabilitation at all stages.

PROJECT DESCRIPTION

The Ufa Perinatal Medical Center is situated on a plot of land covering an area of 4.22 hectares in the Oktyabrsky District of the city center of Ufa, Russian Federation, between Oktyabrskaya and Salavat Yulaev Mendeleev streets.

The project is a maternity hospital consisting of a gross construction area of 33,300 m² and has seven floors plus a basement.

The hospital has a total of 95-beds, 51 of which are in the physiology, pregnancy pathology and observation units of the obstetrics center, with the remaining 44 devoted to the rehabilitation, neonatal pathology, gynecology, in vitro fertilization (IVF) and inpatient units of the neonatal center.

The hospital has an outpatient diagnostic center, laboratory and a physiotherapy center with capacity for 100 patient visits per day for children and 150 patient visits per day for adults.

The hospital was designed as two main blocks: Block A serving as the main medical center and Block B for the administration and the catering facilities. These two blocks are connected by a passage on each floor and were designed with a Level-2 fire-resistance classification.

UNIQUE CHALLENGES

The main challenges of the project were, the reduction of the construction time, in accordance with the Client's request, in order to complete the project before the winter period and the contractual finish date. The RC structural works and the facade walls were completed using fast track scheduling, which also incorporated demanding night work. A temporary heating system was installed and temporary closing of the outer shell openings of the building was carried out in order to continue the architectural and MEP work under the difficult winter conditions in the Ufa region.

As a result of these measures, the project was completed six months ahead of the scheduled contract date and the hospital was put into operation following the hand over and opening ceremony, which was held on 31 October 2014.

ENKA SCOPE OF SERVICES

The range of work undertaken by ENKA comprises all the design work, including basic design, Stage P design and all the working and detailed design, as well as all procurement, all civil, structural, architectural, MEP, medical construction, installation and commissioning work.

As with the previously designed and constructed Lapino Perinatal Medical Center in Moscow, for the same Client group, construction for Ufa PMC included all the civil and structural work, the facade, all architectural finishing, the interior decoration of the main lobbies and spa areas, the mechanical and electrical engineering systems, medical gas system, all weak current systems – including CCTV, security and access control, nurse call, public announcements, fire alarms – building management and control systems, hardscaping and site work.

Major Quantities

Commodity	UoM	Total
Gross Area	m²	33,295
Capacity	beds	95
Reinforcement Concrete	m³	15,000
Partition Walls	m²	59,800
Steel and Wooden Doors	ea	1,620
Aluminum & Ventilated Facade	m²	15,500
Ceramic Tiles	m²	32,000
Painting	m²	68,500
Lifts	set	21

MULTIFUNCTIONAL MEDICAL COMPLEX IN GELENDZHIK

PROJECT DETAILS

LOCATION:
Gelendzhik, Krasnodar, Russian Federation

OWNER / CLIENT:
ROSNEFT

PROJECT DURATION:
Oct 2016-Nov 2017

CONTRACT TYPE:
Lump Sum Turnkey

CONTRACT VALUE:
US$ 46 Million

MAIN QUANTITIES:
Total indoor construction area - 11,495 m²

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

PROJECT DESCRIPTION

Multifunctional Medical Centre was designed as a modern health complex that shall provide high quality standard healthcare services. Medical Centre includes 28 beds, 5 VIP rooms, 1 Day-Stand room and 8 intensive care unit. The building also comprises out-patient clinic that has latest technological medical scanning systems and equipment. Façade of the building has been designed using the modern materials and suitable colors in harmony with city architecture and the city hospital. Materials used in building interior finishes were selected by considering patients' health and maximising hygiene standarts. With these characteristics, the building will be one of the most modern complex and the city. As a part of the project, the building will be connected to the main building of the city hospital via transition gallery.

Multi-flat Residential House Building has been designed as a modern living complex, consisting of 8 storey, including 1 underground car park floor. The building has 2 VIP flats and 42 normal flats, offices & meeting room, fitness center and car park area. Design of the VIP flats offers high quality living standards and maximum comfort. Standard flats was designed for providing all comfort living needs. Fitness center is located on ground floor. It is equipped with modern fitness equipment, required for high quality fitness activities.

New Laundry Building is located within the boundaries of the "City Hospital Complex" and is a 2 storey building. The facility is equipped with modern laundry equipment and devices reaching to a washing, drying and disinfecting capacity of 4 tons/hr. The facility was handed over to the Customer and City Hospital Operations Team on 23 June 2017; one month earlier than the planned completion date, and is now operational.

UNIQUE CHALLENGES:

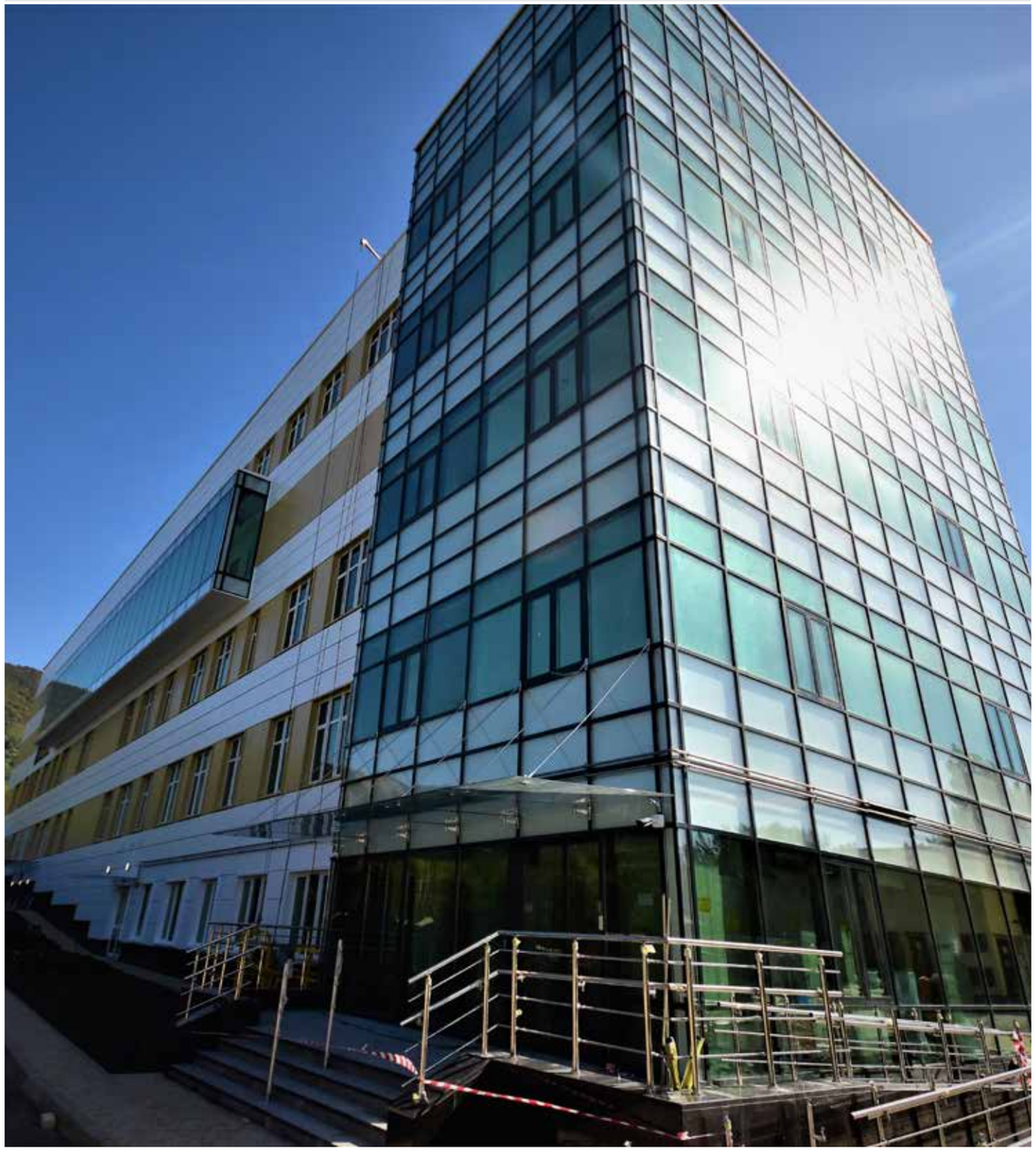
This is one of the fast track projects of ENKA that is planned to be completed within 13 months.

ENKA

MULTIFUNCTIONAL MEDICAL COMPLEX IN GELENDZHIK

ENKA SCOPE OF SERVICES

ENKA commenced "Multifunctional Medical Center Complex Project" in Gelendzhik, Krasnodar to construct a modern medical Complex within the third quarter of 2016. The Contract was signed by Rosneft and ENKA on 10 October 2016. ENKA's scope of works includes detailed design, civil & structural works, lifts, mechanical, electrical and plumbing, façade works, architectural works, finishing works, external works and supply & installation of medical equipment and furniture. Project's total indoor construction area is approximately 11,495 m² and it consists of three separate buildings, including Multifunctional Medical Centre, Multi-flat Residential House & New Laundry.



Balmumcu Mah., Zincirlikuyu Yolu No: 10, 34349 Beşiktaş / İstanbul | Phone: +90 (212) 376 10 00 (pbx) | Fax: +90 (212) 272 88 69
e-mail: enka@enka.com | web: www.enka.com

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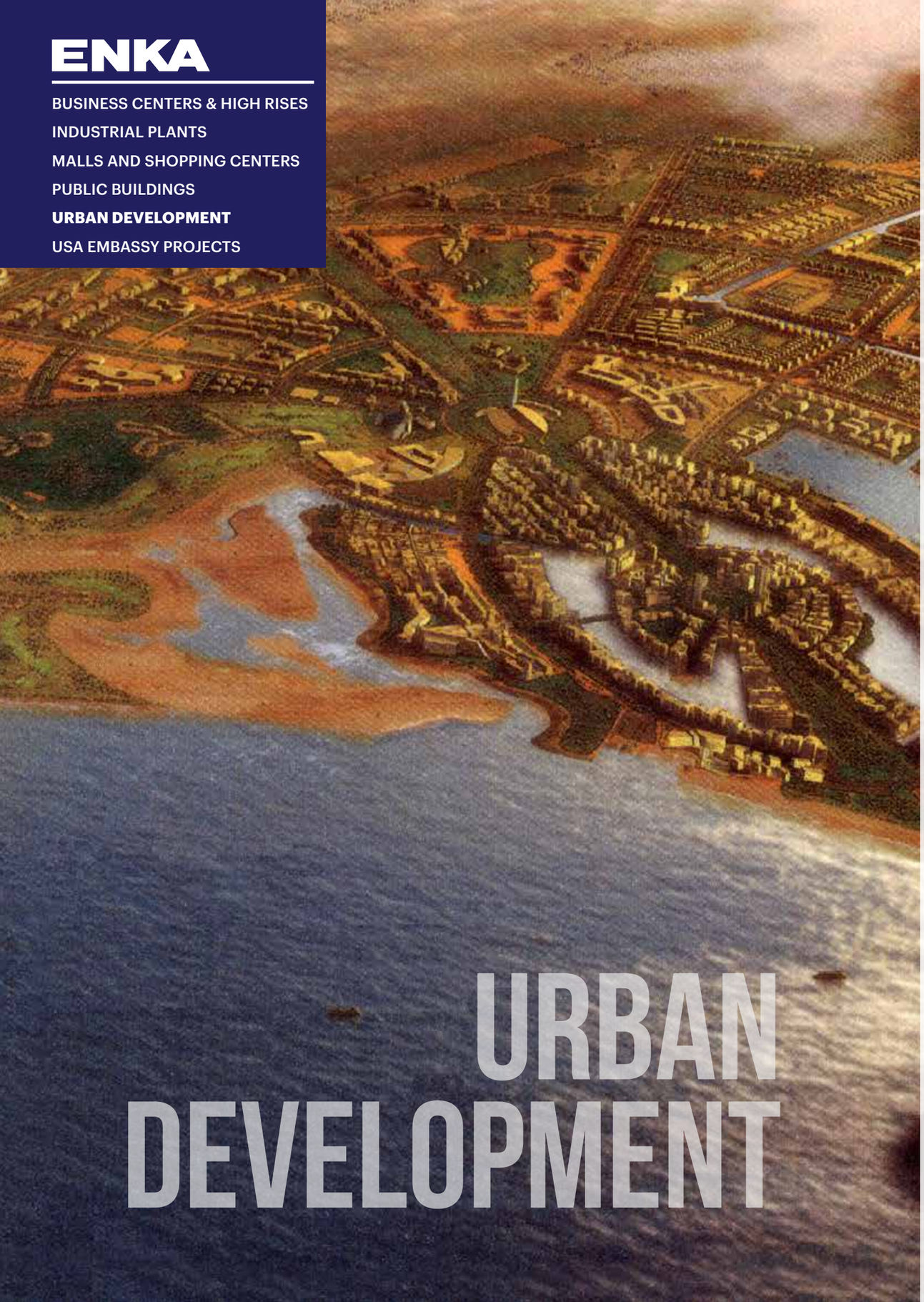


URBAN DEVELOPMENT

BORISOW MILITARY HOUSING PROJECT. BELARUS

BREGA NEW TOWN PROJECT, LIBYA

HARAWA HOUSING PROJECT, LIBYA

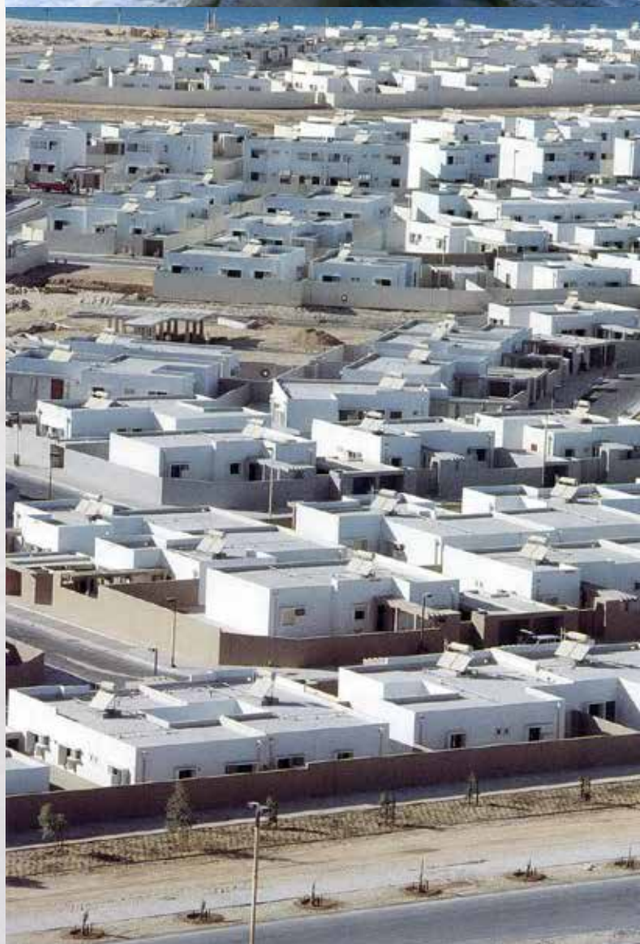
SIRTE BAY HOTEL AND CONFERENCE CENTER, LIBYA

RAS LANUF NEW TOWN PROJECT, LIYBA

SLONIM MILITARY HOUSING PROJECT, BELARUS

TSCHAIKOWSKI MILITARY HOUSING PROJECT, RUSSIAN FEDERATION

URBAN DEVELOPMENT



ENKA

BORISOW MILITARY HOUSING PROJECT

PROJECT DETAILS

LOCATION:
Borisow, Belarus

OWNER / CLIENT:
Housing Department Ministry of Defence/Sojuzvneshstrojimport.

PROJECT DURATION:
July 1991-Dec 1991

CONTRACT TYPE:
Lump Sum - Turnkey

CONTRACT VALUE:
US$ 79 Million

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- Completion of 725 Units took 173 Days only

PROJECT DESCRIPTION

The design and turnkey construction of a residential complex with 725 dwelling units, including social and technical buildings and the furnishing thereof with the complete infrastructure. The total floor area is 84,000 m². The project also includes a 30 MW central heating plant.

The Borisow military housing project in Belarus was the pioneering settlement within the military housing program and, as such, demanded great speed of construction. From the green field to turnkey completion took just 173 days. The project had a total construction area of 85,000 m² and included social and technical buildings, infrastructure and a 30 MW heating center.

ENKA SCOPE OF SERVICES

Within the context of rapid developments, following the unification of Germany, ENKA was determined to hand over the project on the planned arrival date of the troops. ENKA's speed in completing the 725 apartments required intensive logistical arrangements, backed up by the network of ENKA Offices in Istanbul, Minsk, Moscow, Wiesbaden, Stockholm and London. As a result of this coordinated effort, a total of 1,510 trucks and 1,747 train wagons of equipment and materials were moved to the site. At the peak of activity, the number of workers and personnel reached 3,300.

The inauguration ceremony on January 8, 1992, received extensive international media attention, and marked ENKA's successful contribution to a historic event.

Major Quantities

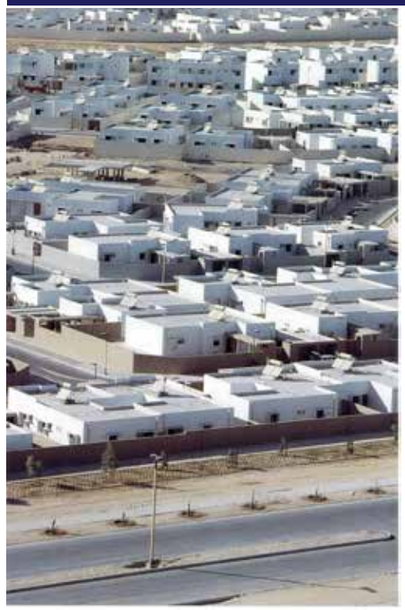
Commodity	UoM	Total
Excavation	m³	170,000
Backfilling	m³	30,000
Concrete	m³	51,000
Formwork	m²	200,000
Reinforcement	ton	3,750
Screed	m²	65,000
Linoleum Floor	m²	9,500
Ceramic Floor	m²	7,350

Major Quantities

Commodity	UoM	Total
Painting	m²	125,800
Gypsum Board Partitions	m²	75,000
Glazed Tile	m²	14,200
Wall Paper	m²	80,500
Door & Windows	pcs	5,714+9,452
Parquet Floor	m²	36,000
Roads	m²	7,800
Total Floor Area	m²	84,000

ENKA

BREGA NEW TOWN PROJECT



PROJECT DESCRIPTION

The Brega New Town Construction Project was a Mega Housing Project of the Petroleum Ministry of Libya. The total contract value was US$ 510 Million. The contract was turnkey and comprises two housing projects covering 432,300 m² construction area consisting of 2,666 single or two-story villas of 18 different types, social buildings, including schools, supermarkets, clinics, post offices and other service units, cultural centers, soccer fields and tennis courts, roads, complete infrastructure, landscaping, telecommunication and interior furnishings of the buildings.

Turnkey construction of 2,666 villas in 18 different types, 2,110 of which were one-storey and 556 of which were two storey buildings with a total floor area of 432,300 m². In addition to these villas the project included five schools, two supermarkets, two clinics, two post offices, recreational facilities, two service shops, two cultural centers, one hospital, one mosque and a communication center. The project also included all infrastructure works and landscaping. Electrical installations, town gas system, telecommunication system and utilities. For the construction of the villas a two-piece tunnel formwork system was used.

The main structural frame of these buildings were reinforced concrete wall and slabs, cast by means of steel tunnel-forms, where the wall and slab thickness was 15 cm. The tunnel form striking openings were closed using reinforced concrete precast wall elements, which were produced at the precast factory, where the reinforced concrete window and doorframes and garden pergolas were also produced. For thermal insulation, the structural walls were insulated by means of glass wool panels and covered by plaster, from inside the buildings.

PROJECT DETAILS

LOCATION:
Marsa El Brega, Libya

OWNER / CLIENT:
Great Socialist People's Libyan Arab Jamahiriya Secretariat of Heavy Industries, Brega and Ras Lanuf Higher Committee.

PROJECT DURATION:
May 1986-Aug 1993

CONTRACT TYPE:
Lump Sum

CONTRACT VALUE:
US$ 510 Million

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- By using this practical and speedy construction system in all activities, six houses/day were accomplished. At the peak time of construction there was total manpower of 5,200 at the site, of which 140 were engineers and 130 administrative staff.
- The President of Gabonese Republic also awarded ENKA with a Certificate of Recognition.

HARAWA HOUSING PROJECT

PROJECT DETAILS

LOCATION:
Sirte – Harawa, Libya

OWNER / CLIENT:
Organization for Betterment and Development of the Administrative Centers - (O.D.A.C.)

PROJECT DURATION:
Feb 1991-July 1993

CONTRACT TYPE:
Lump Sum - Turnkey

CONTRACT VALUE:
US$ 102 Million

PROJECT DESCRIPTION

Following the completion of the Great Man-Made River project in Libya, a 30×40 km expanse of land was selected for a new agricultural settlement. In 1991, ENKA signed a frame contract for the turnkey construction of 150 villas and 600 farm houses, including social and technical buildings, water reservoirs, pipelines, roads and infrastructure, with a total construction area of 180,000 m^2. Under this comprehensive contract, the project's objective was to transform arid desert into cultivatable land and a habitable settlement materialized in several stages between 1991 and 2001.

ENKA SCOPE OF SERVICES

Turnkey construction of 30 minister houses and 221 farm houses, each with its own stable, all of which were one-storey buildings with a total floor area of approximately 50,000 m^2. In addition to these houses, a 10 classroom school, a clinic, a police station, infrastructure for the 40 houses already constructed at Harawa, a cafeteria, guest houses, a club building and 18 water reservoirs, each with a capacity of 1,000 m^3 and two water reservoirs each with a capacity of 240 m^3. The housing project was designed in accordance with the local requirements and traditions. Groups of housing units were dispersed along a route of approximately 40 km. The columns were precast in reinforced concrete and houses' roofs were of a flat slab type reinforced concrete construction, utilizing specially manufactured flying table forms. The project also included all building, mechanical and electrical installations, potable water systems and local infrastructure works.

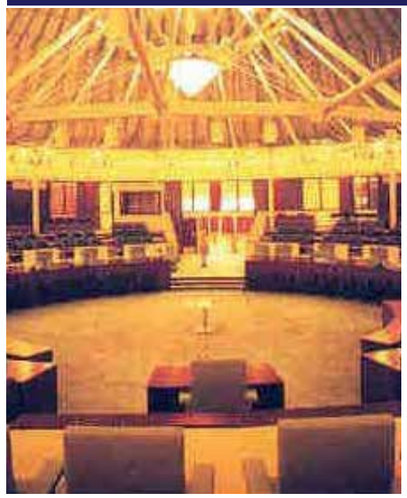
Major Quantities

Commodity	UoM	Total
Story Farm Houses	ea	221
Asphalt	m	7,000
Pipeline	m	2,500
Earthwork	m^3	200,000
Filling	m^3	100,000
Service Road	m	60,000
Concrete	m^3	75,000
Formwork	m^2	200,000

Major Quantities

Commodity	UoM	Total
Reinforcement	ton	5,000
Painting	m^2	220,000
Insulation	m^2	70,000
Bricklaying	m^2	140,000
Plastering	m^2	300,000
Terrazo Tiling	m^2	35,000
Total Floor Area	m^2	50,000

SIRTE BAY HOTEL AND CONFERENCE CENTER



PROJECT DESCRIPTION

This magnificent convention center and tourism complex in Libya, designed to host conferences and guests of high official levels, was completed at incredible speed in the extraordinarily short period of six months. The contract was on a turnkey basis at a cost of US$ 93 Million, complete with infrastructure, landscaping, and fully furnished and equipped facilities.

ENKA SCOPE OF SERVICES

Four hotel buildings, each comprising four stories of 32,200 m^2

- Reception hall of 2,700 m^2
- Giant tent-style conference hall of 3,500 m^2
- 43 bungalows, and administrative building, restaurant, cafeteria and sports center with a total construction area of 4,750 m^2
- Power center, water purification and chlorination plant, parking lot, heliport, and walk ways, with a total construction area of 47,500 m^2
- Turnkey construction of 59 high quality villas, fully furnished, including service buildings, roads, and infrastructure in Sirte.

PROJECT DETAILS

LOCATION:
Sirte, Libya

OWNER / CLIENT:
Great Socialist People's Libyan Arab Jamahiriya Secretariat of Heavy Industries Brega and Ras Lanuf Higher Committee.

PROJECT DURATION:
Jan 1989-July 1989

CONTRACT TYPE:
Lump Sum

CONTRACT VALUE:
US$ 93 Million

Major Quantities

Commodity	UoM	Total
Excavation	m^3	76,590
Filling	m^3	25,500
Reinforced Concrete	m^3	33,000
Concrete	m^3	17,000
Formwork	m^2	79,010
Structural Steel	ton	3,060
Walls	m^2	19,022
Gypsium Board	m^2	25,720

Major Quantities

Commodity	UoM	Total
Painting	m^2	75,432
Insulation	m^2	16,873
Marble	m^2	4,807
Carpet	m^2	18,423
Laundry (to serve)	pers.	400
Kitchen (to serve)	pers.	400
Total Construction Area	m^2	52,250

PROJECT DETAILS

LOCATION:
Ras Lanuf, Libya

OWNER / CLIENT:
Great Socialist People's Libyan Arab Jamahiriya Secretariat of Heavy Industries, Brega and Ras Lanuf Higher Committee.

PROJECT DURATION:

- Ras Lanuf New Town Project Contract No: 11 : Feb 1981-May 1985
- Ras Lanuf New Town Project Contract No: 12 : July 1981-May 1985
- Extension for Ras Lanuf New Town Phase 1 & 2 : Mar 1990-June 1994

CONTRACT TYPE:
Lump Sum - Turnkey

CONTRACT VALUE:

- Ras Lanuf New Town Project Contract No: 11 : US$ 224 Million
- Ras Lanuf New Town Project Contract No: 12 : US$ 100 Million
- Extension for Ras Lanuf New Town Phase 1 & 2 : US$ 98 Million

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- During the peak construction time of the residential buildings there were 3,356 people on the job site, of which 114 were engineers and technicians, 110 were administrative staff, 340 were mechanics and 2,792 were laborers.

PROJECT DESCRIPTION

Ras Lanuf New Town Project provides housing and supporting facilities for employees working in the petroleum industry in the Ras Lanuf Area. The project's main objective was to create a well-functioning urban settlement of high quality with all the necessary services, in order to attract the manpower required for the petrochemical and other industries, as well as for administrative and other services. To create an attractive town, the consultant placed special emphasis on conserving the traditional Libyan urban lifestyle, ensuring a high level of service, while protecting the town against pollution, providing suitable air conditioning and landscaping.

The site for the Ras Lanuf Town is spread over an area between the seventh and thirteenth km. south - east of As Sidrah, approximately 650 km east of Tripoli, located mainly between the coast and the coastal highway. Along with the dwelling units, the construction of motels, health care facilities, educational facilities, sports and recreational facilities, mosques, a commercial center, administration buildings and light industry areas were included in the project.

ENKA SCOPE OF SERVICES

The construction of the new town began with the award to ENKA of Contracts 11 and 12 and the Extension for the Ras Lanuf New Town Phase 1 and 2.

Contract No 11:

The turnkey construction of a total of 1,129 villa type housing units, 253 of which are two-storey buildings and the rest are single-storey. Each villa is located on a lot of 380 m^2 and total floor area amounts to 238,000 m^2.

The project also includes infrastructure work, such as roads, underpasses, sewerage systems, rainwater drainage systems, water supply networks, irrigation, electricity installations, a natural gas supply and telecommunication systems. Interior furnishing and landscaping is also included in the contract.

The main structural elements of these buildings are reinforced concrete walls and floors with a slab thickness of 15 cm. The dual side application of a two piece tunnel formwork system was selected for the construction, as there were more than a 100 repetitions of structural elements that were well within the limits for the practical application of tunnel formwork systems. This choice has maintained good quality, while assuring speedy erection with reduced labor requirements.

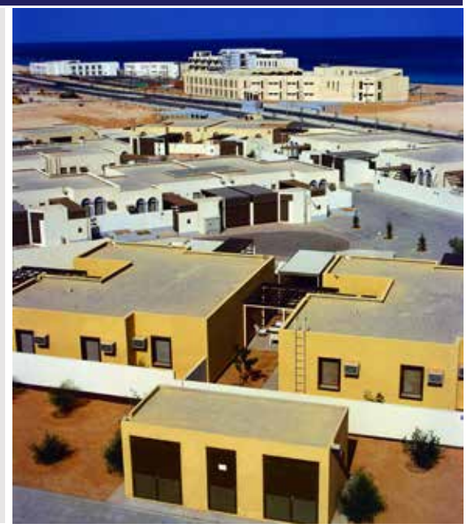
The precast roof slabs, together with stairs and awnings for the buildings were prefabricated on site and erected.

Contract No 12:

The work included the design and turnkey construction of five motels with a total floor area of 16,500 m^2, five three-storey apartment houses with a total floor area of 32,000 m^2, a primary school, a kindergarten, a supermarket with a total floor area of 11,500 m^2 and two water tanks, each with a capacity of 20,000 m^3, a sewage treatment plant, a water supply system, electrical and mechanical installations.

Extension for the Ras Lanuf New Town Phase 1 and 2:

The work included the design and turnkey construction of 360 houses with garages, one preparatory school, one multi-purpose office and one 56 bed hospital with a total floor area of 10,000 m^2. The project also included all infrastructure, landscaping, natural gas network system, telecommunication systems, an 11 KV energy system, transformer buildings and the interior furnishing of the houses.



MAJOR QUANTITIES

Contract 11

Commodity	UoM	Total
Reinforcement	ton	12,000
Concrete	m^3	290,000
Insulation	m^2	260,000
Aluminum Works	m^2	43,000
Carpentery Works	m^2	61,000
Pipe Works	m	250,000

Contract 12

Commodity	UoM	Total
Concrete	m^3	45,000
Bricklaying	m^2	50,000
Insulation	m^2	120,000
Reinforcement	ton	3,400
Formwork	m^2	195,000

Phase 1 & 2, Additional Works

Commodity	UoM	Total
Earthwork	m^3	415,000
Filling	m^3	540,000
Concrete	m^3	88,500
Formwork	m^2	490,000
Reinforcement	ton	4,900
Painting	m^2	450,000
Insulation	m^2	140,000
Bricklaying	m^2	40,000

SLONIM MILITARY HOUSING PROJECT

PROJECT DETAILS

LOCATION:
Slonim - Minsk, Belarus

OWNER / CLIENT:
Ministry of Defence Housing Department / Vneshstrojimport.

PROJECT DURATION:
Oct 1991-Dec 1992

CONTRACT TYPE:
Lump Sum - Turnkey

CONTRACT VALUE:
US$ 149 Million

SIGNIFICANT FEATURES / ACCOMPLISHMENTS:

- Successful completion of 1,455 Housing Units in 13 Months

PROJECT DESCRIPTION

The project included the engineering, procurement, and turnkey construction of a residential complex with 1,455 dwelling units including social and technical buildings and the furnishing thereof, together with the complete infrastructure. The project also included a 30 MW central heating plant, school, trade center, shopping center and social center with indoor swimming pool.

ENKA SCOPE OF SERVICES

The primary elements of the project included the following activities:

- 1,455 housing units in 73 housing compounds of five stories each (162,000 m²)
- A polyclinic with 150-bed capacity, a nursery for 330 children, a trade center and shopping center, a school with 33 classrooms, and a 25,000 m² social center with indoor swimming pool
- A 4,800 m² technical building comprising the heating center, switchboard, gas regulating stations, drinking water, drainage and sewage systems, and fuel oil pumping stations
- Infrastructure consisting of gas, heating, drinking water, sewage and drainage systems, and 10 KV, 0.4 KV, radio, telephone, fire alarm network
- Roads
- Landscaping
- Interior Furnishings

Major Quantities

Commodity	UoM	Total
Excavation	m³	1,500,000
Filling	m³	450,000
Concrete	m³	110,000
Formwork	m²	500,000
Reinforcement	ton	16,500
Precast Elements	pcs	13,250
Screed	m²	150,000
Painting	m²	420,000

Major Quantities

Commodity	UoM	Total
Bricklaying	m²	47,500
Plastering	m²	50,000
Terrazo Tiling	m²	7,800
Roads	m²	57,000
Pedestrian Ways	m²	21,000
Infrastructure Pipes	m	28,000
Infrastructure Cables	m	69,000
Total Floor Area	m²	191,800

TSCHAIKOWSKI MILITARY HOUSING PROJECT

PROJECT DESCRIPTION

The scope of the project comprised the design and turnkey construction of a residential complex with 1,385 dwelling units that included social and technical buildings incorporating a 250 bed hospital and the furnishing thereof with the complete infrastructure.

ENKA SCOPE OF SERVICES

In 1993, ENKA signed the contract for the construction of the hospital with Technostroyexport, the foreign trade organization acting on behalf of the owner, the General Department of Accommodation, the Ministry of Defense of the Russian Federation. The 250-bed hospital was constructed as part of the Tchaikovsky military housing project. The contract also included the delivery and installation of medical equipment, supplied both from local and international manufacturers. The building had a total construction area of 30,000 m² and was equipped with fully automated HVAC, firefighting and security, as well as medical gas systems.

PROJECT DETAILS

LOCATION:
Perm, Russian Federation

OWNER / CLIENT:
Ministry of Defense Housing Department / Technostroj-export

PROJECT DURATION:
Dec 1992-Mar 1995

CONTRACT TYPE:
Lump Sum

CONTRACT VALUE:
US$ 174 Million

ENKA

BUSINESS CENTERS & HIGH RISES
INDUSTRIAL PLANTS
MALLS AND SHOPPING CENTERS
PUBLIC BUILDINGS
URBAN DEVELOPMENT
USA EMBASSY PROJECTS

USA EMBASSY PROJECTS

AFGHANISTAN / KABUL
ALGERIA / ALGIER
BOSNIA AND HERZEGOVINA / SARAJEVO
BURUNDI / BUJUMBURA
CAMEROON / YAOUNDE
DJIBOUTI/DJIBOUTI
DOMINICAN REPUBLIC/ SANTO DOMINGO
EQUATORIAL GUINEA / MALABO
GREECE / ATHENS
GUINEA / CONAKRY
INDIA / HYDERABAD
KENYA / NAIROBI
MALI / BAMAKO
MAURITANIA / NOUAKCHOTT
MEXICO / MEXICO CITY
NEPAL / KATHMANDU
NETHERLANDS / WASSENAAR
PAPUA NEW GUINEA/ PORT MORESBY
PARAGUAY / ASUNCION
RUSSIAN FEDERATION/ MOSCOW
SAUDI ARABIA / DHAHRAN
SIERRA LEONE/ FREETOWN
SRI LANKA/ COLOMBO
TURKEY / İSTANBUL
TURKMENISTAN /ASHGABAT

USA EMBASSY PROJECTS

USA EMBASSY PROJECTS

PROJECTS' DETAILS

LOCATIONS:

- Afghanistan / Kabul
- Algeria / Algier
- Bosnia and Herzegovina / Sarajevo
- Burundi / Bujumbura
- Cameroon / Yaounde
- Djibouti/Djibouti
- Dominican Republic/ Santo Domingo
- Equatorial Guinea / Malabo
- Greece / Athens
- Guinea / Conakry
- India / Hyderabad
- Kenya / Nairobi
- Mali / Bamako
- Mauritania / Nouakchott
- Mexico / Mexico City
- Nepal / Kathmandu
- Netherlands / Wassenaar
- Papua New Guinea/ Port Moresby
- Paraguay / Asuncion
- Russian Federation/ Moscow
- Saudi Arabia / Dhahran
- Sierra Leone/ Freetown
- Sri Lanka/ Colombo
- Turkey / İstanbul
- Turkmenistan /Ashgabat

Following the successful collaboration between ENKA and the Caddell Construction Company of Montgomery, Alabama, on the construction of the new US Consulate building project in Istanbul, which was completed in 2003, ENKA is now providing consultancy and services for the construction of US Embassy buildings.

As part of the agreement, from 2003 - 2015 ENKA and Caddell bid for the majority of projects in Africa, Asia, Europe, South America and Australia and were awarded the design and build contracts for the US Embassy projects and US Navy Projects. The completed projects are Cameroon, Guinea, Mali, Sierra Leone, Algeria, Nepal, Bosnia, Burundi, Djibouti, Equatorial Guinea, Papua New Guinea and the Dominican Republic. The ongoing projects are Mauritania, The Netherlands, Djibouti Camp Lemonnier (US Navy), Russia, Afghanistan and Turkmenistan, Sri Lanka, India, the Saudi Arabia were awarded in year of 2016, and Paraguay, Kenya, Mexico and Greece embassy compound projects were awarded recently in 2017.

All the buildings are built from high-grade rein-forced concrete. Due to the diverse geotechnical features of the projects, several types of foundation and soil improvement methods have been developed, designed and applied.

The implementation of Excellence in Diplomatic Facilities and LEED requirements has led Caddell / ENKA to construct new methods and systems. Facades are being designed with architectural concrete finishes, specific exterior stone claddings, which complies to each country's architectural traditions by US Architects of Record, who team up with ENKA and Caddell from the tender stage onwards. Exterior doors and windows are forced entry/blast resistant for security. The mechanical systems include HVAC, fire protection, sanitary and plumbing in addition to kitchen equipment, elevators and fuel. Electrical systems entail electrical power supply with transformers, voltage regulators, emergency generators and UPS, power distribution, power monitoring and control, communication, intercom and fire alarm. Security systems include active vehicle barrier controls, door control system, compound access controls, emergency notification, security intercom, intrusion detection and CCTV systems.

One major challenge faced by ENKA and Caddell with these projects involved the engineering, procurement and construction logistics in different regions around the world, all of which had to comply with US Standards and Norms and had to occur on a fast-track cycle. Another very notable challenge was the maximization of local resources, including the workforce, so that added value was added to local economies. This was all successfully combined with the implementation of Zero Accident Policy in accordance with US Occupational Health and Safety Standards.

The Afghanistan Project, which was awarded in 2010, was planned for construction in two phases. Due to the border crisis in Afghanistan, the initial phase of the project began in 2012 and although the first phase of the project is now complete, the second phase of the project should be finished by the last quarter of 2017. The First Phase included the Office Buildings NOBX, NOX, Marine Security Guard Quarters (MSGQ), Staff Diplomatic Apartment 1 (SDA1), Utility Building, and Warehouse, which is a total of 59,226 m^2. The Second Phase of the project is the Staff Diplomatic Apartment 2 and 3 (SDA 2 and 3), which is 63,150 m^2. The total amount of concrete is 104,719 m^3. A total of a 1,100 Concrete Piles had been applied for soil improvement and foundation support. The Afghanistan Project is designed as per LEED Silver requirements. All the buildings' exterior shells are designed to comply with the Blast & Fe/Br requirements of the Client. In the compound, generators with the capacity to generate 16 Megawatts of power have been designed, procured and installed. Due to security issues, the logistics of the materials have been coordinated and strictly managed for rapid and safe routes.

ENKA
İNŞAAT VE SANAYİ A.Ş.

Balmumcu Mah., Zincirlikuyu Yolu No: 10, 34349
Beşiktaş / İstanbul
Phone: +90 (212) 376 10 00 (pbx) Fax: +90 (212) 272 88 69
e-mail: enka@enka.com web: http://www.enka.com