

Y Ü C E

Y A P I

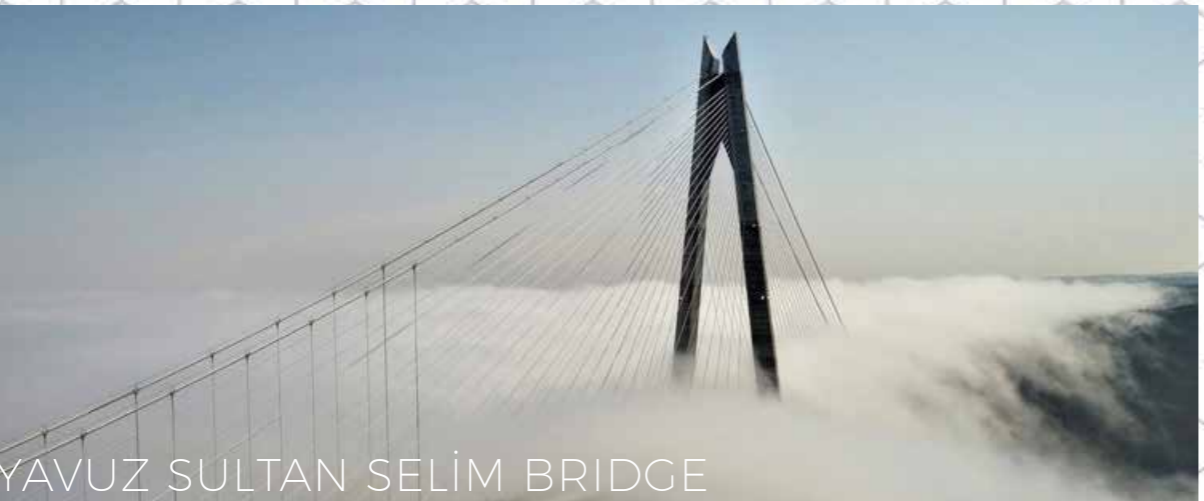
The Team of
Unusual Tasks





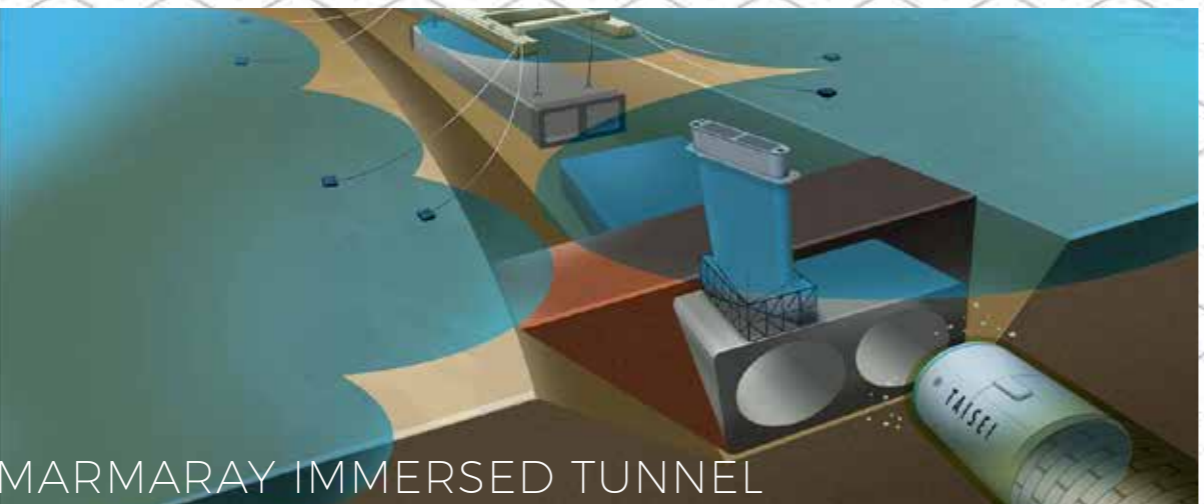
1915 ÇANAKKALE BRIDGE

The **LONGEST** suspension bridge



YAVUZ SULTAN SELİM BRIDGE

The **TALLEST** suspension bridge



MARMARAY IMMERSSED TUNNEL

The **DEEPEST** immersed tunnel

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YÜCE



YÜCE



İbrahim Engin Yüce
General Manager
Structural Engineer, M.Sc

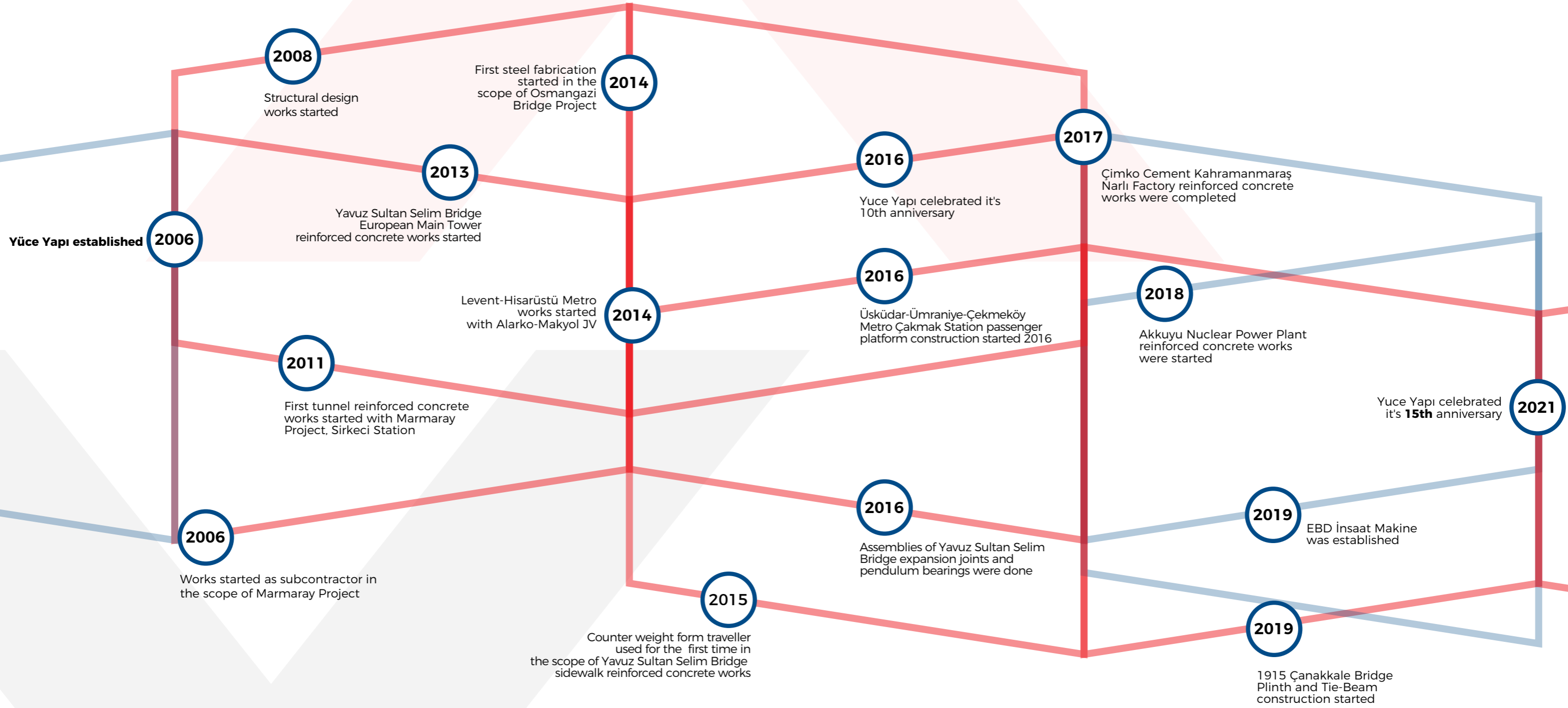
One of the most precious purposes humankind chases during all their lives is to leave a legacy behind. People, sometimes deliberately, sometimes unknowingly, endeavor to achieve this purpose for a lifetime. Raising a child to become a good person, building a school, planting a tree, writing a book or taking a photograph can immortalize a person.

Engineering is not only a profession but also a way to leave such precious legacy. The works one has built can be remembered along with creator's name for decades, even for centuries. As Yüce Yapı, we take our heritage very seriously, with our passion for our profession and our technical expertise beyond standard engineering projects. And we are thrilled to have our signature on the tallest, longest and deepest works. We blend our experience with innovative ideas and deliver the best solutions end-to-end while focusing on our clients' desire to create value.

We know our signature under numerous monumental projects all around Turkey is our heritage as well as our clients'. Yüce Yapı, celebrating its 16 th anniversary in 2022, will continue to live through the trace it has left in all the projects it has taken and shall be taking part.

In every step of our projects, we will continue to add value to people's lives, to chase our dreams and most important of all, to create works which will be passed onto next generations by our clients.

Milestones





ZUCFE

PROJECTS

1915 Çanakkale Bridge



Reinforced Concrete Works

(Daelim Limak SK Yapı Merkezi JV)

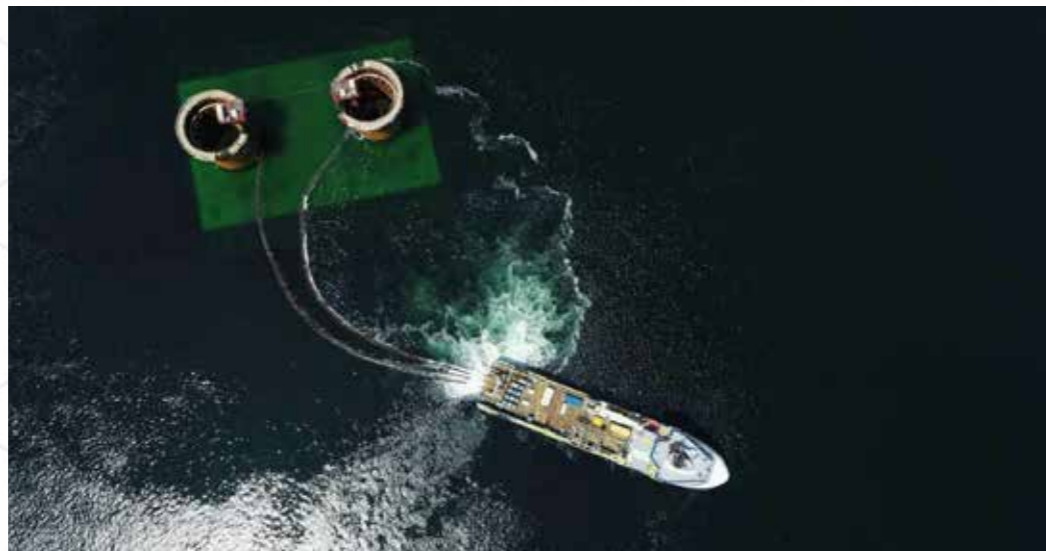
- › Shaft Concrete Casting
- › Plinth Construction
- › Cooling Pipe Installation
- › Concrete Castings of Plinths
- › Tie-Beam Construction
- › Stitch Construction





Shaft Concrete Casting

Following the completion of the immersion procedure of the caissons, the offshore concrete casting of the steel shafts was performed by Yüce Yapı. A total of 4.224 m³ of self-compacting concrete, 1.931 m³ of it on the European side and 2.293 m³ on the Asian side was casted by using 17 units of tremie pipes.





1915 Çanakkale Bridge, interconnecting the continents of Europe and Asia, with a tower height of 318 meters, is the longest suspension bridge of the world with its mid-span of 2.023 meters.

Plinth Construction

Based on conventional techniques of suspension bridge construction, plinths and tie-beams are built once caissons constituting the foundation of the towers are immersed in seabed.

Through use of an innovative technique implemented in this project for the first time in bridge construction history, plinths and tie-beams were constructed onshore, saving significant project time.

There were four plinths, one for each pier. Cylindrical shaped plinths had 19 meters of diameter and 10.5 meters of height each. The installation of plinth rebar was initiated onshore while the caissons were at the construction stage on the dry docks. The rebar was installed onshore on a steel rebar cage. 2.220 tons of rebar (555 tons per plinth) was installed in 7 months.

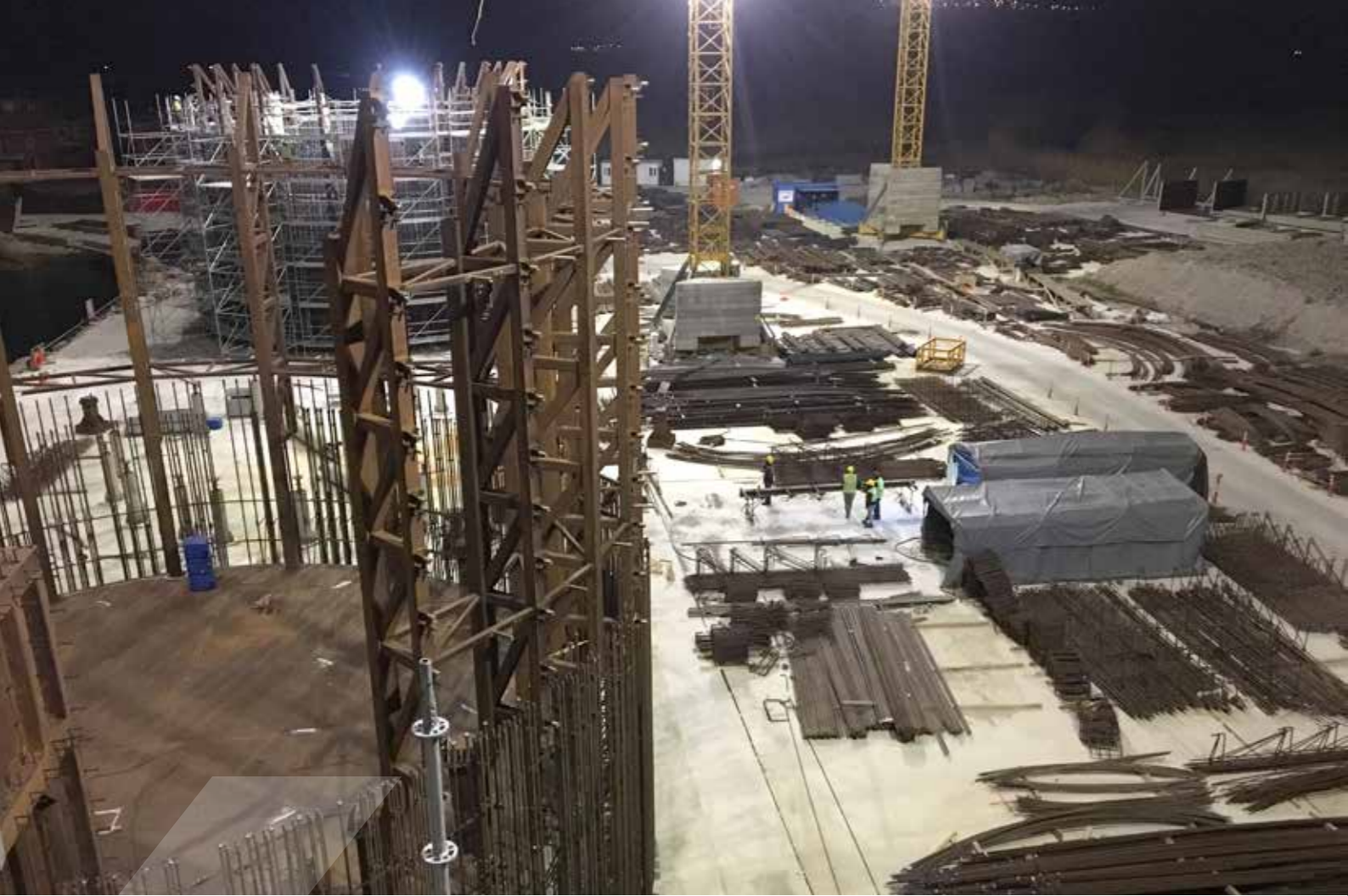
After the installation of rebar on the steel rebar cage, outer formworks were placed, completing the installation of the plinth formwork onshore. Then, the anchorage frames were placed within each plinth, concluding onshore constructions.

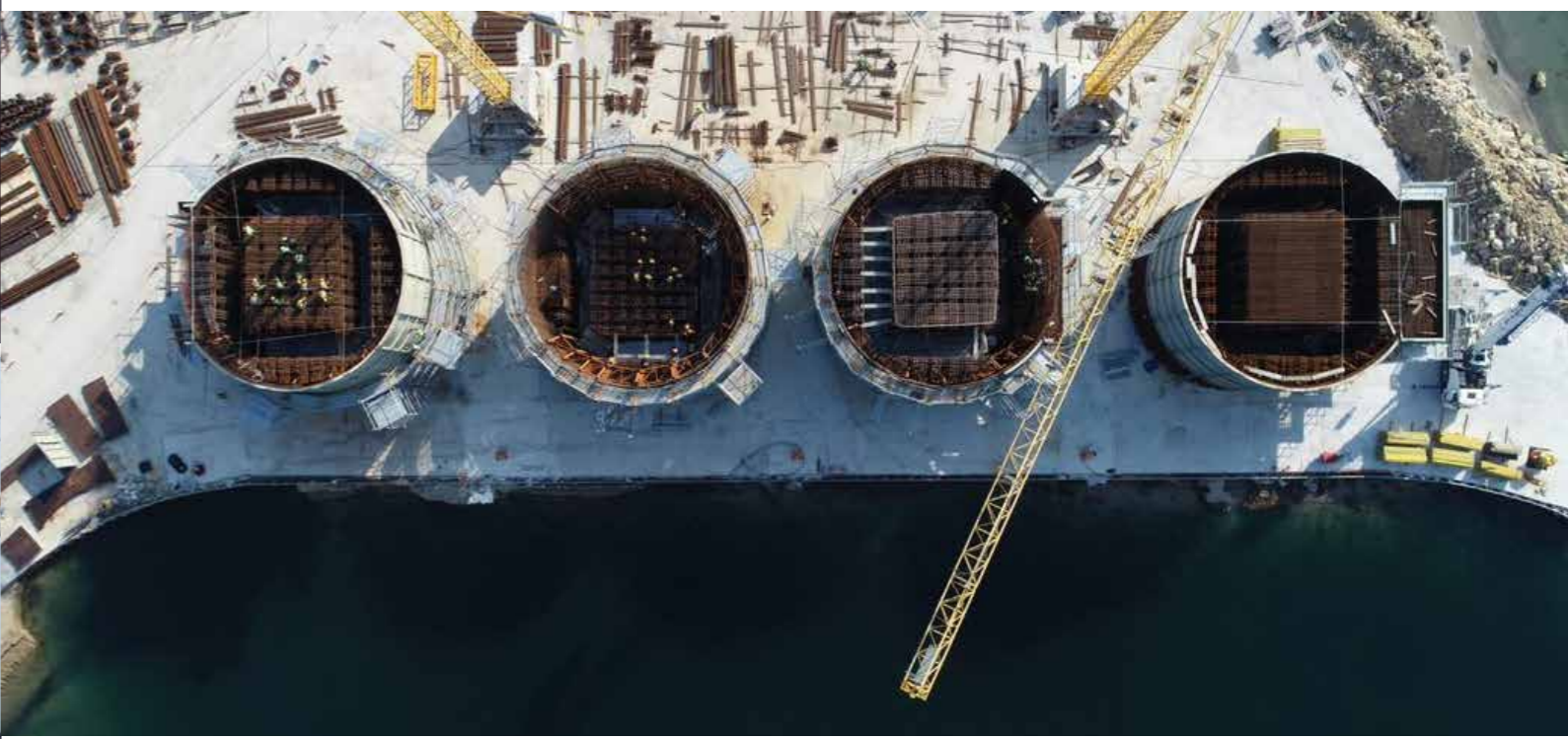
Once assembled, each plinth together with the rebar reinforcement, steel formwork, rebar cage and anchorage frame weighed approximately 1.000 tons. Each plinth was taken from the onshore construction site by a floating crane after the immersion of each caisson

to be installed onto the shafts. As a result, through use of the innovative technique described above, the installation of rebar, formwork and anchorage frame of plinths was completed in advance onshore and only the concrete castings were made offshore.

Each of the plinth rebars which ensured anchorage with the shaft, requiring high level of precision during installation, were placed under the tight supervision by surveyors. 1058 reinforcement bars, penetrating the shafts, were arranged in a way to go through the studs placed 10 cm apart from each other.

As a result of Yüce Yapı's precise work, all four plinths were installed successfully on shafts at first trial, without any disruptions or rework.









Cooling Pipe Installation

While the works of rebar installation of the plinths were in process onshore, Yüce Yapı installed the cooling pipes necessary to cool down the hydration temperature that may arise during the concrete casting also onshore. 23.697 meters of cooling pipes were laid inside the structure with 70 cm of distance vertically and 60 cm horizontally for each plinth.

Yüce Yapı also carried out the pressure tests of the pipelines and completed cement injections into the cooling pipes after concrete castings.

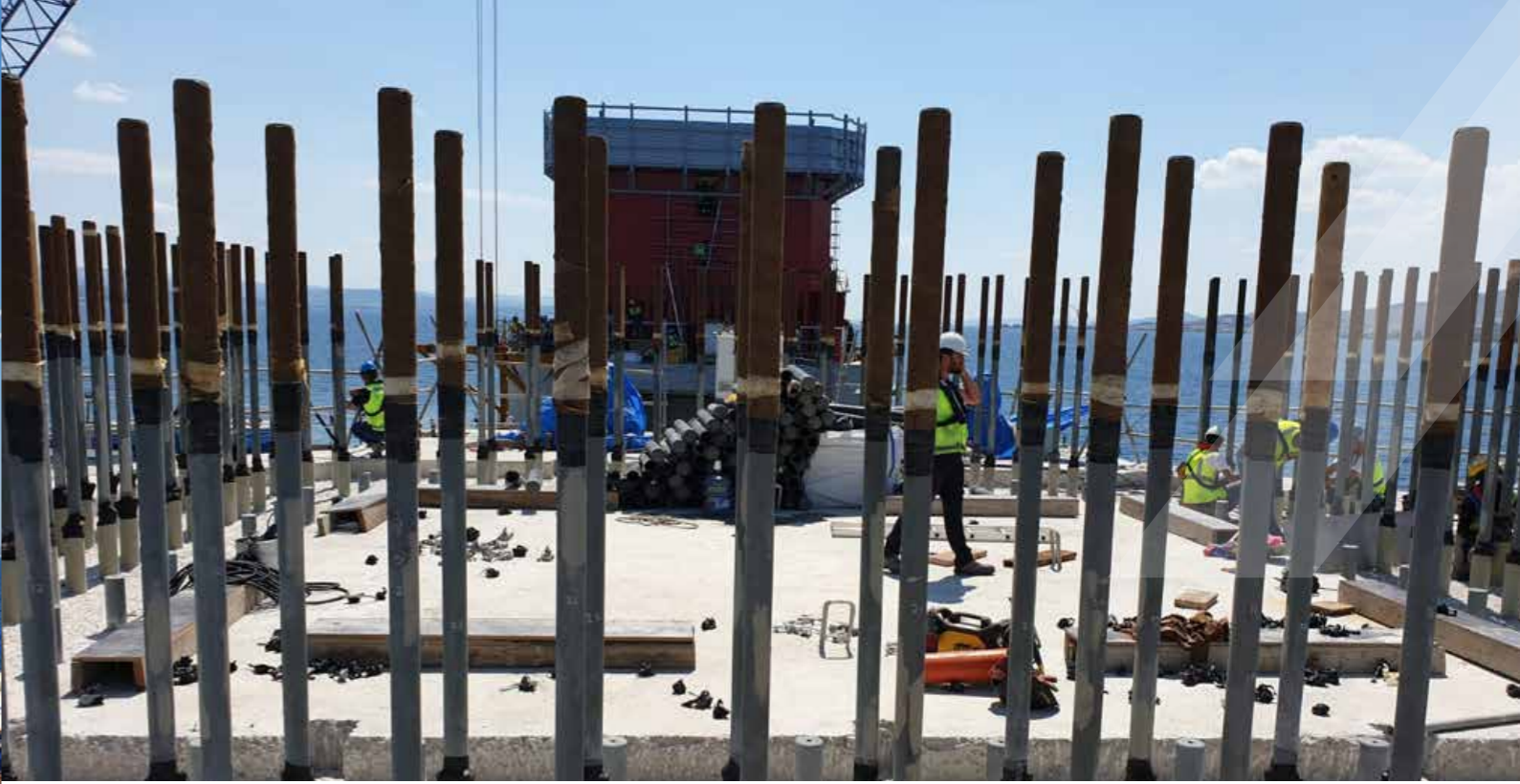




Concrete Castings of Plinths

11.616 m³ of concrete was casted offshore for the plinths. For the concrete casting of these plinths, four floating barges were used, three of them to transport the transmixers and one for concrete pumps. Concrete was casted using steel tremie pipes.







Tie-Beam Construction

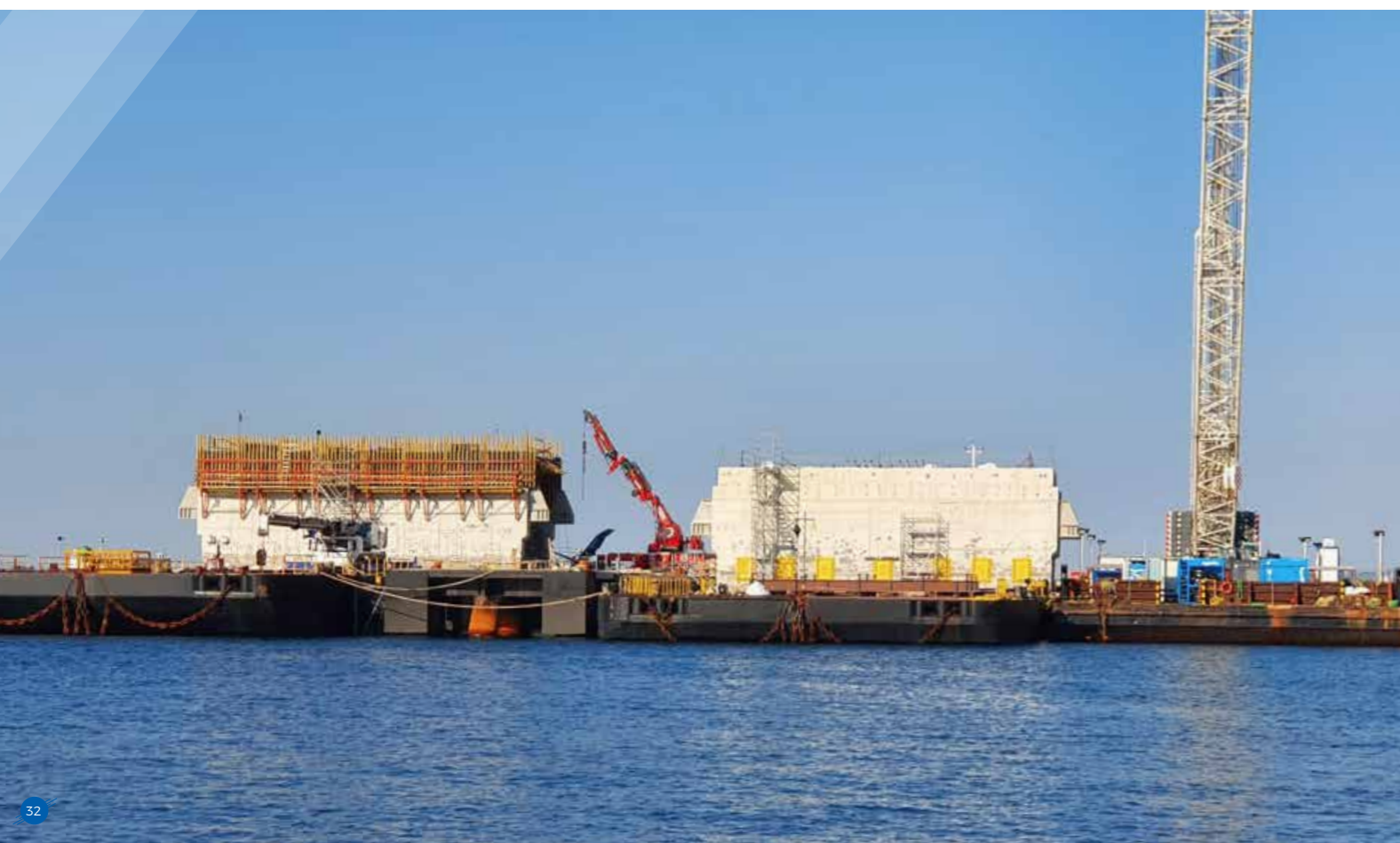
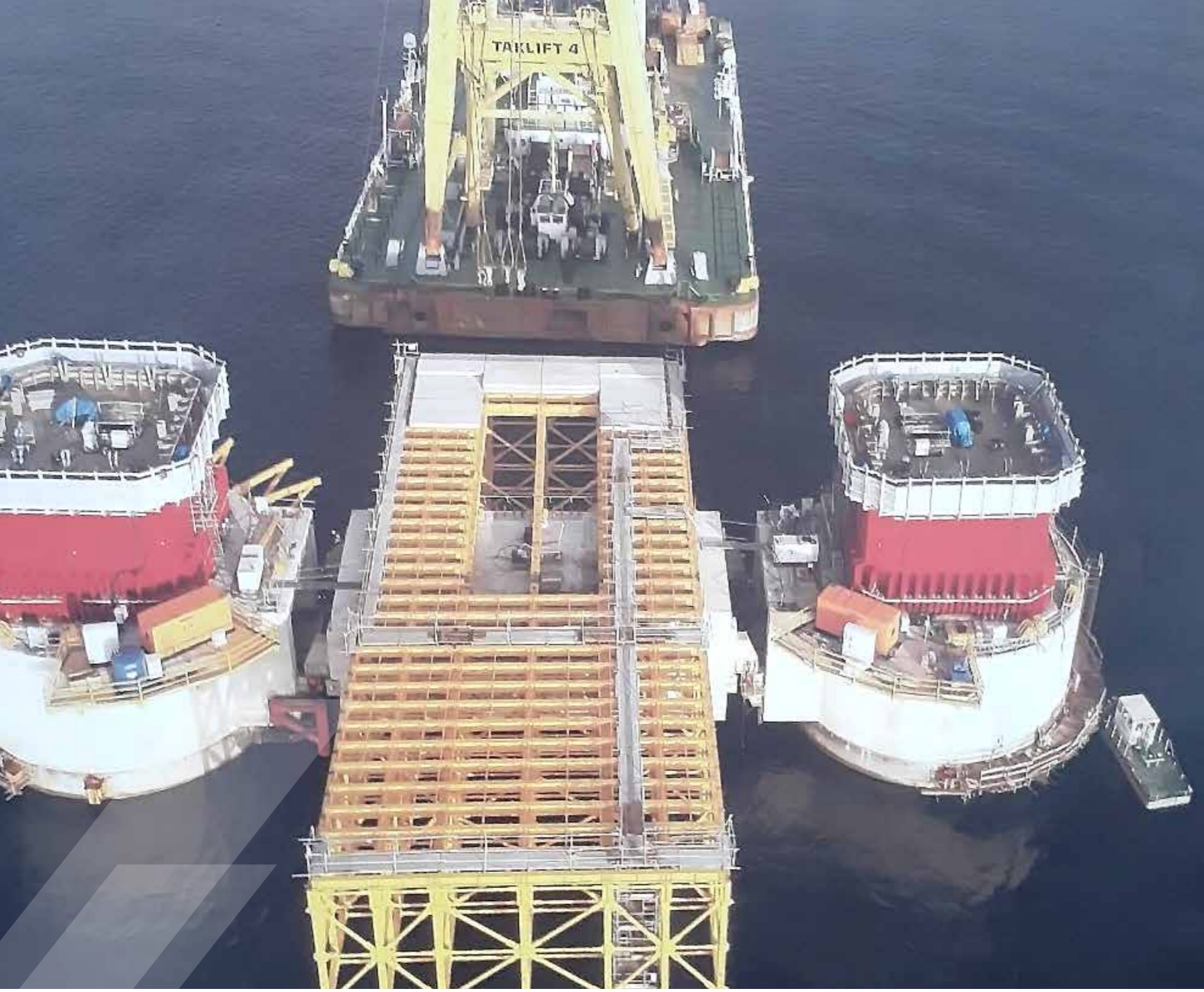
Formwork, rebar and concrete construction of the upper half of the side walls and top slabs of the tie-beams interlocking the plinths were performed by Yüce Yapı.

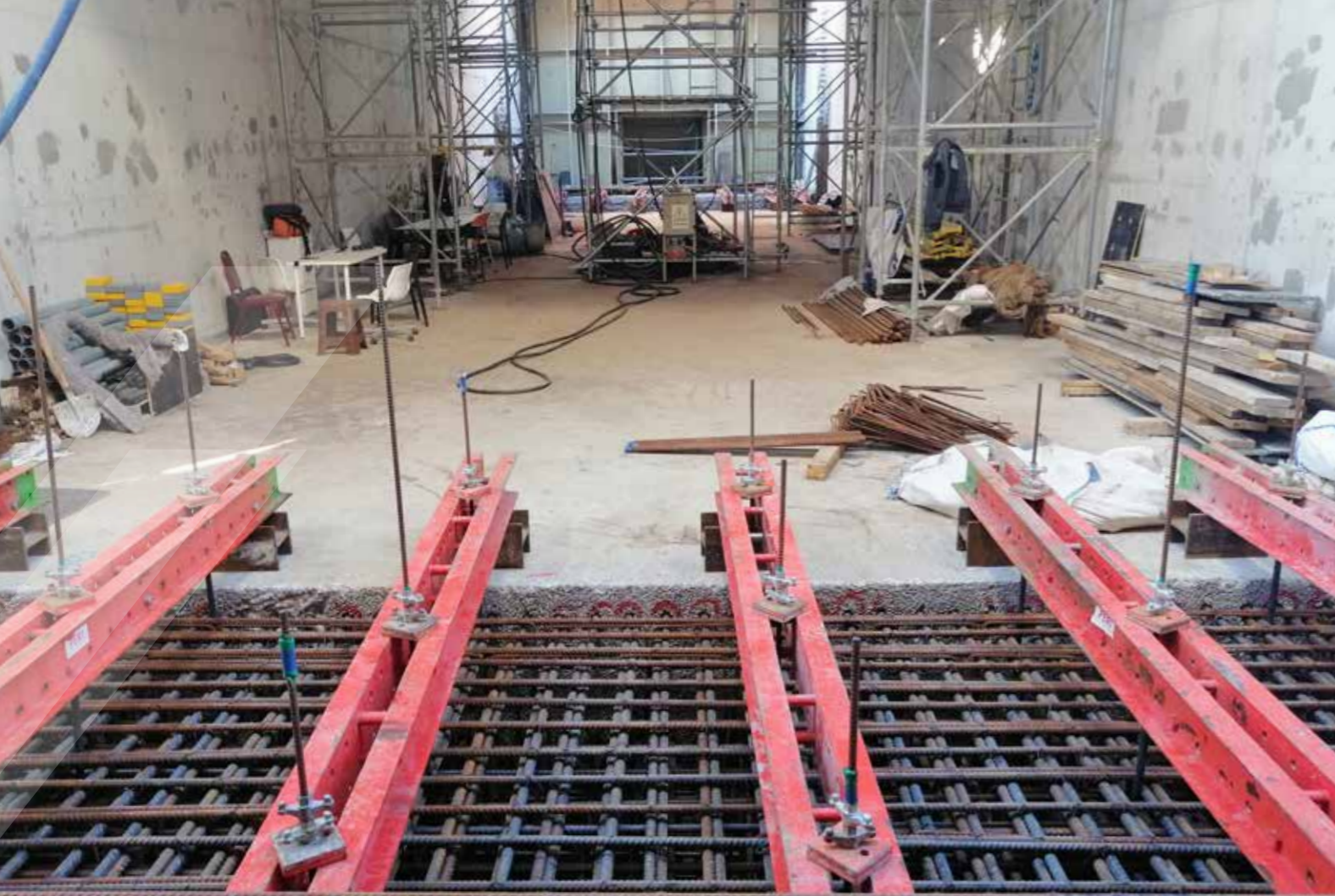
Bottom slabs and lower side walls of the tie-beams had been constructed onshore. These tie-beams were carried onto the floating barge by a floating crane. The top slabs and upper side walls were built on the floating barge.

PERI vario climbing system was used for the wall formwork installation of two tie-beams with a height of 8 m and a length of 24 m. PERI heavy loading slab formwork system was used as carrier for the top slab. The side walls and top slabs were casted at one time on the floating barge and the construction of the tie-beams was completed.

The tie-beams on the floating barge were brought to the tower locations by tugboats. The floating barges, placed between the plinths, were lowered by flooding water and tie-beams were installed on the plinth cantilevers. In the end temporary installation of tie-beams was completed.







Stitch Construction

The reinforced concrete construction of the gap having remained between the tie-beams and plinths has been made by Yüce Yapı.

Concrete casting of each stitch location was performed in two phases. Bottom slab was casted during the first phase and the sidewalls and top slab were casted together during the second phase.

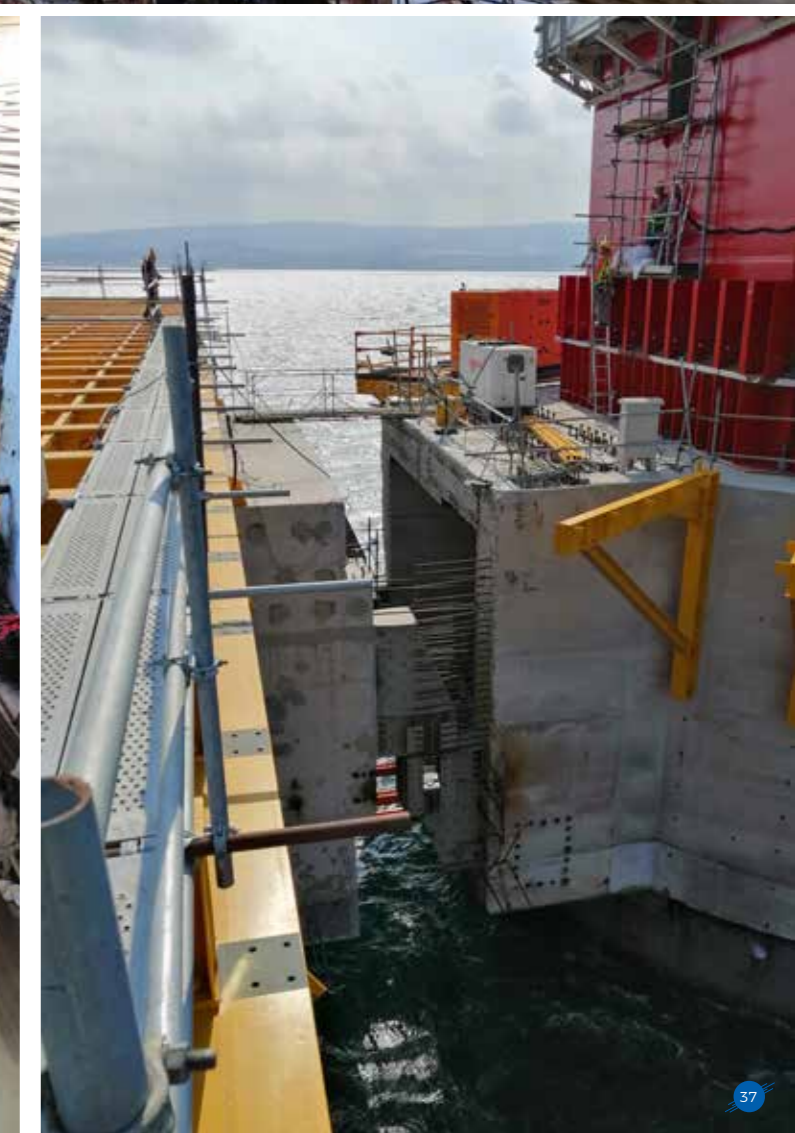
The reinforcements of the stitch location were connected to the plinth and tie-beam using couplers, ensuring rebar integrity between these two structures.

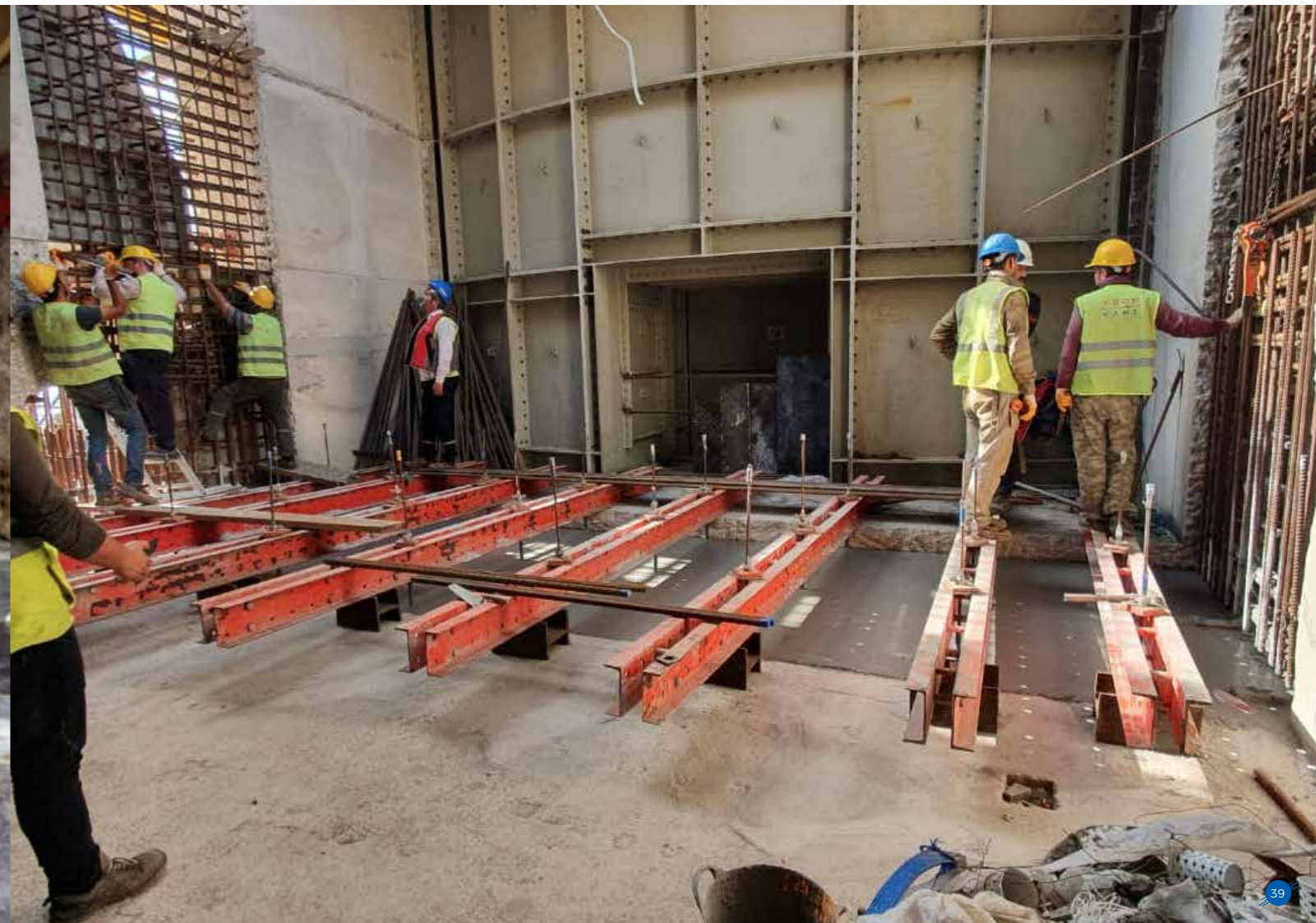
PERI vario formwork was used for the formwork installation. The formwork parts were taken onto the plastic floating barge for the bottom slab construction, and they were assembled and installed on-site. Since the construction location was 1.5 m above the sea level, the bottom slab formwork was suspended to the SRU Steel Waler, extended from the plinth to the tie-beam with tie-rods. Following the completion of the suspended formwork, the bottom slab rebars were connected to each other with

couplers. After the completion of the bottom slabs' concrete castings, working scaffoldings were installed at the inner and outer parts for the side walls for rebar and embedded item installation.

Then the top slab and inner side wall formworks were installed with the erection of the slab scaffolding. After the completion of the installation of the top slab rebar and embedded elements of the working platform, the outer formworks of the side walls were installed and the side wall and top floor concrete casting were finalized.







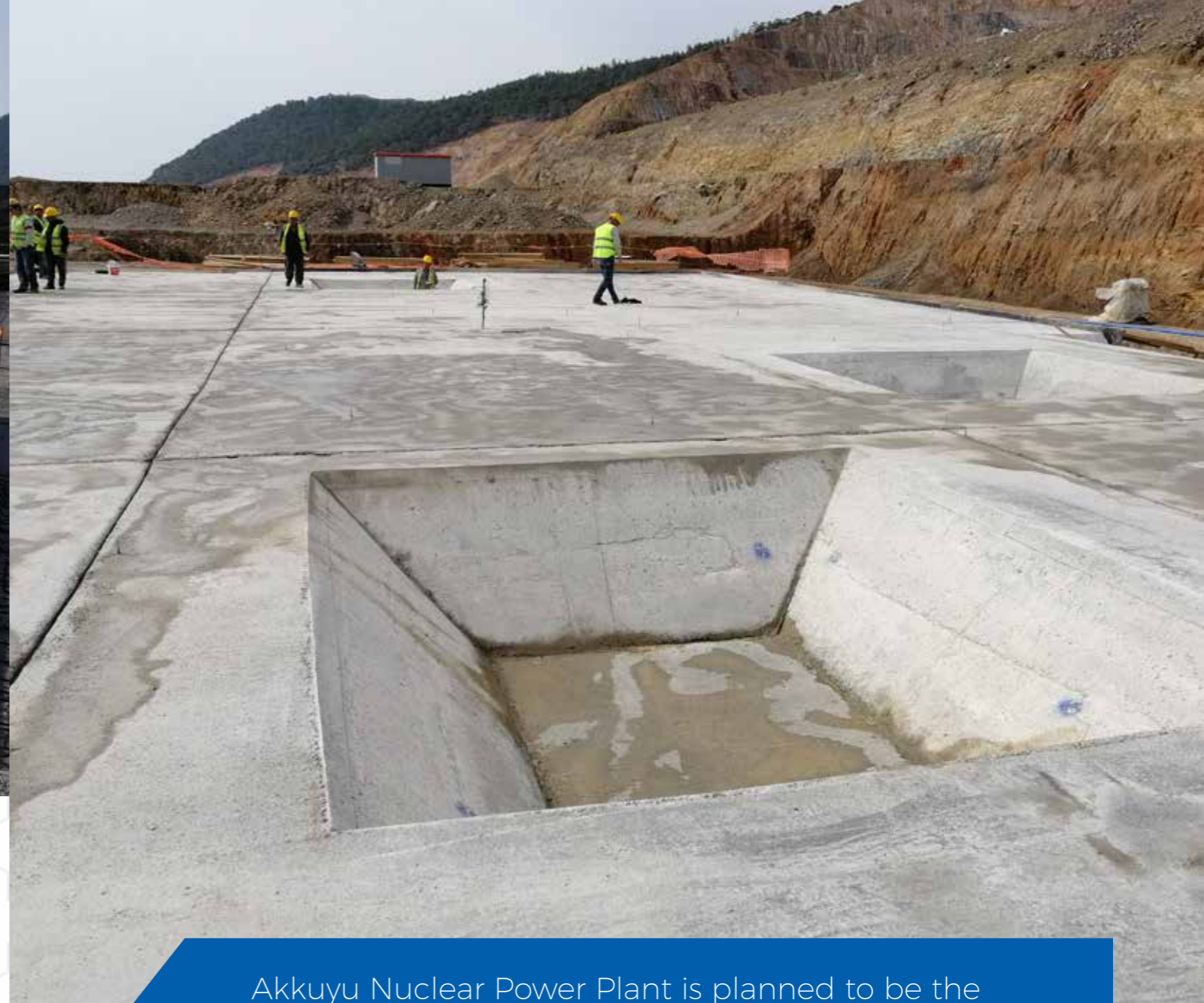
Akkuyu Nuclear Power Plant

Reinforced Concrete Works

(TITAN2 IC İÇTAŞ İnşaat A.Ş.)

- › Unit Standby Control Room Building (10UCB)
- › Liebherr 1000 EC-H40 Tower Crane Foundation
- › Mock-up Castings for Concrete Mix Design





Unit Standby Control Room Building (10UCB)

The reinforced concrete backfilling of the reactor's standby control room building was casted by Yüce Yapı up to the foundation bottom level. The building occupies an area of 630 m² with a width of 18 m and a length of 35 m. The concrete was casted in layers to prevent any hydration and shrinkage cracks. 2.000 m³ concrete was casted.



Akkuyu Nuclear Power Plant is planned to be the first nuclear power plant of Turkey.







Liebherr 1000 EC-H40 Tower Crane Foundation

The foundation of Liebherr 1000 EC-H40 tower crane was constructed by Yüce Yapı. The DOKA FRAMAX was used for the form of the foundation.

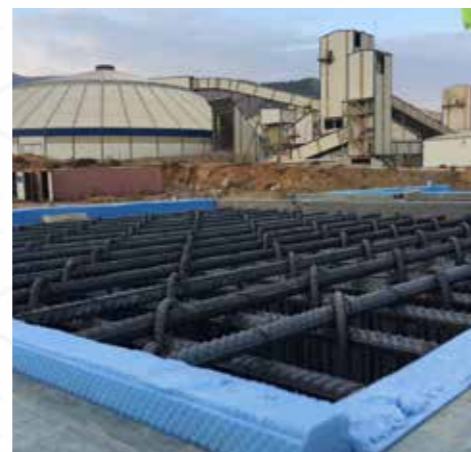




Mock-up Castings for Concrete Mix Design

The mock-up castings for the self-compacting concrete mixture were carried out by Yüce Yapı. For this purpose, the full scaled models of some parts of the reactor control building and reactor support buildings were prepared. DOKA FRAMAX formwork was used for this work. Following the placement of the steel embedded elements and rebar installation, thermocouples were installed inside the formwork to continuously measure the temperature.

The placement of the concrete was monitored using self-compacting concrete and its propagation velocity was measured. After the concrete casting, the cooling duration of the concrete was monitored by performing temperature measurements of the test model every 8 hours during a period of 7 days. The duration of cracking and sizes of cracks were monitored by changing the curing method and curing time intervals of the concrete.



Yavuz Sultan Selim Bridge

Reinforced Concrete, Steel Fabrication and Steel Assembly Works

(Hyundai Engineering & Construction Co., Ltd. & SK Engineering & Construction Co., Ltd. JV)

- › European Main Tower Construction
- › European Sidewalk Construction
- › European Anchor Block Covering, Precast Beam Fabrication and Installation
- › European Anchor Block Transition Slab Construction Substation Building
- › Retaining Wall Construction
- › Pendulum Bearing Installation & Presetting
- › Swivel Joist Expansion Joint Installation
- › Steel Drainage Pipe System Installation
- › Top Tower Beam (TTB) Platform Manufacturing
- › TTB Ladder Manufacturing & Installation
- › Hand Rope Post Manufacturing
- › Steel Doors of Pylon and Side Span Manufacturing & Installation
- › Other Bridge Facilities Manufacturing & Installation
- › European Side Span Formwork Assembly





Yavuz Sultan Selim Bridge

Reinforced Concrete, Steel Fabrication and Steel Assembly Works

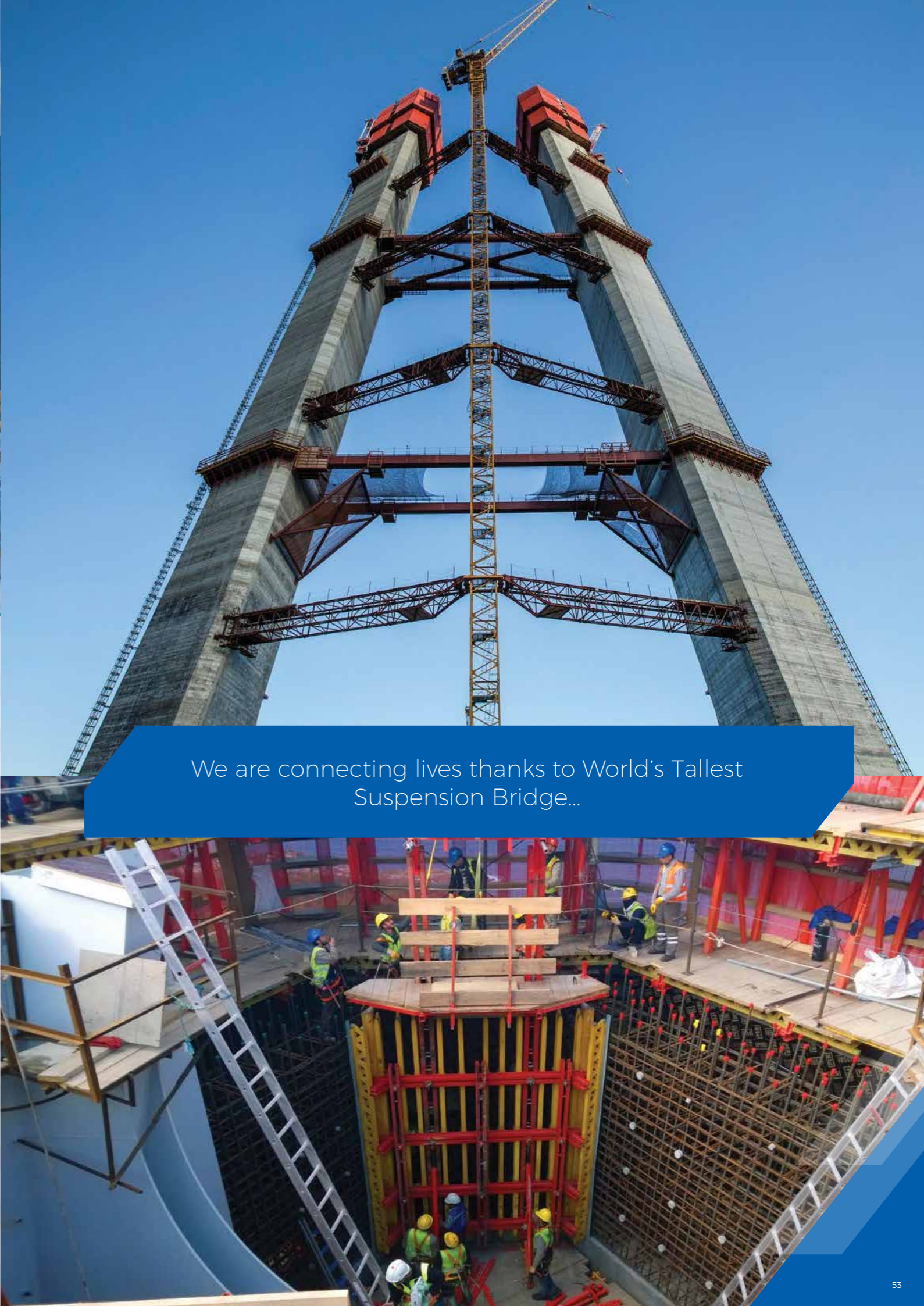
European Main Tower Construction

Being the third bridge project spanning the Bosphorus Strait - Istanbul, Yavuz Sultan Selim Bridge is a gigantic engineering project for both rail and motor vehicle transit between Asia and Europe continents, connecting the Black Sea to the Mediterranean Sea over the Sea of Marmara.

Yavuz Sultan Selim Bridge is not just the tallest suspension bridge of the globe thanks to its height of 322 meters, it is additionally the widest of the world with a deck width of 59 meters, and with 1408 meters of main span, it is also the longest bridge of the world, complete with a railway.

The European main tower of Yavuz Sultan Selim Bridge has been constructed by Yüce Yapı.

Within the scope of this work which continued for 18 months, slipform was used for the first 207 meters of bridge piers, while PERI / ACS (Auto Climbing System) cast-in-place formwork, assembled at the site, was used in the height range of 207 m - 304 m. With the use of ACS at a total height of 11 meters in total and a concrete casting height of 4.5 meters, 40 climbing sequences were completed with 20 climbs per North and South pier at a concreting level of +304.50. For this work, besides 4514 tons rebar installation in total, 18926 m³ concrete casting and 13813 m² ACS formwork assembly was performed.

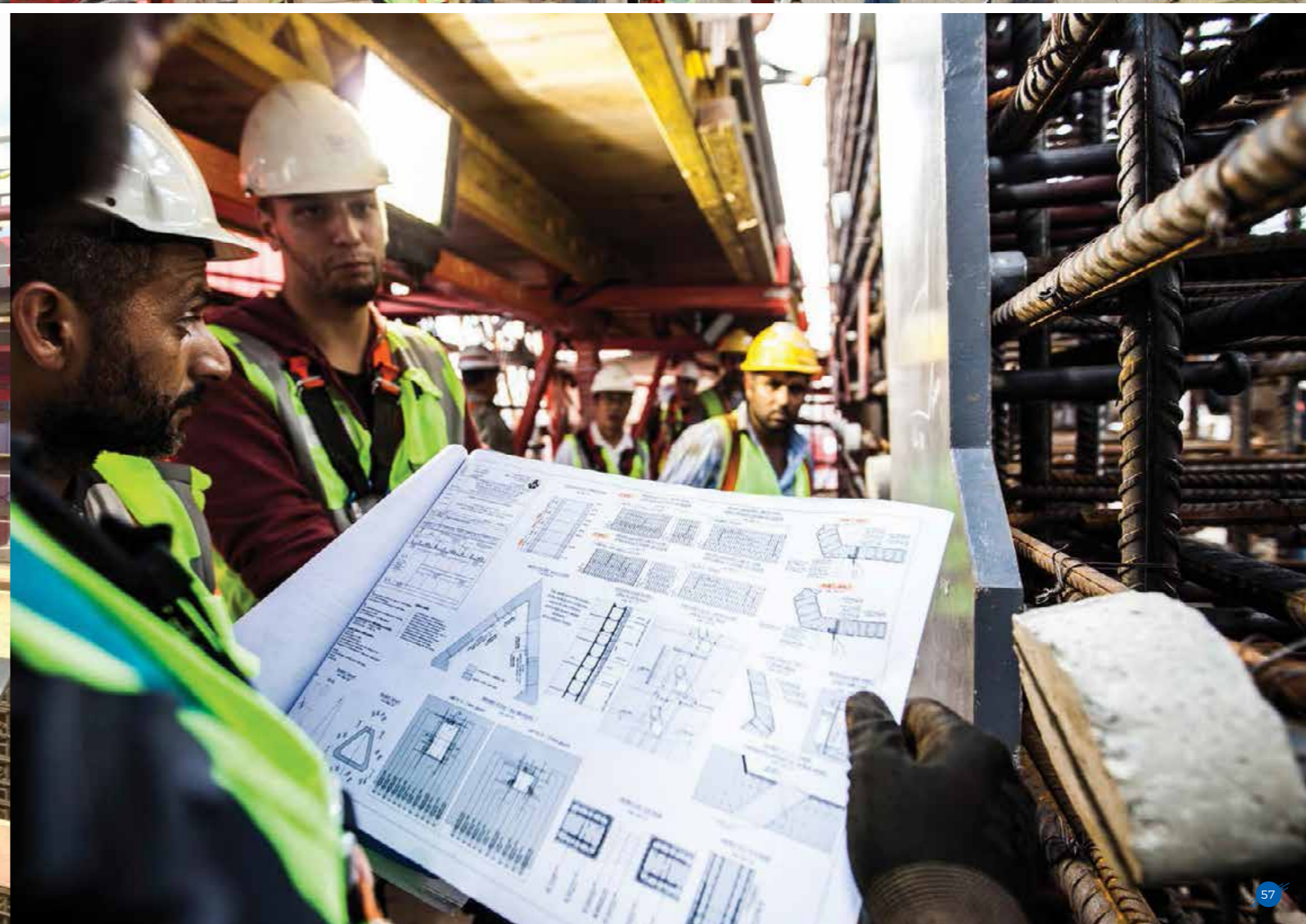


We are connecting lives thanks to World's Tallest Suspension Bridge...

Yavuz Sultan Selim Bridge

Reinforced Concrete, Steel
Fabrication and Steel
Assembly Works







European Sidewalk Construction

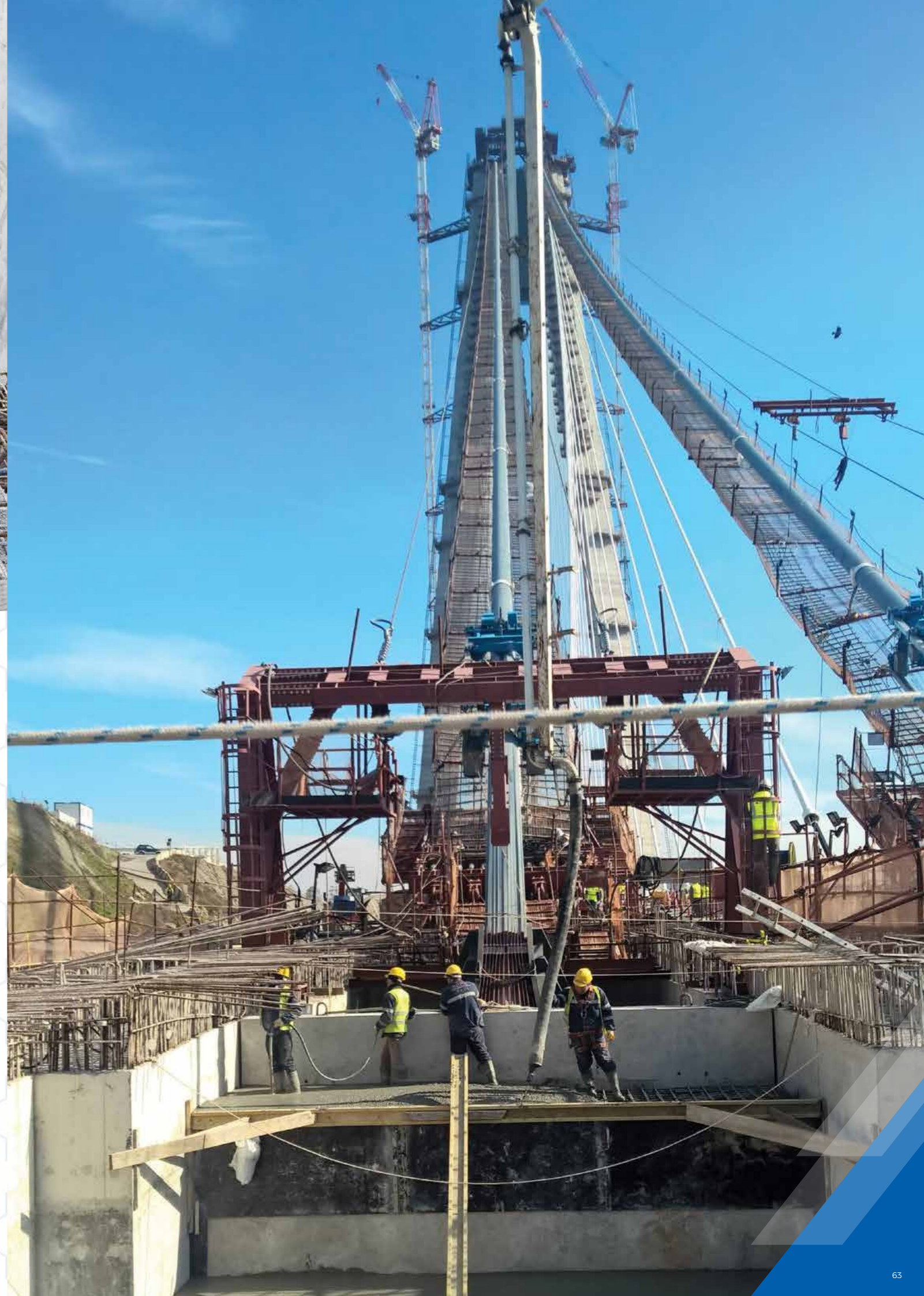
Construction of sidewalks used by operation and maintenance teams who support the daily work flow and security on the bridge has been performed by Yüce Yapı.

In the initial stage of the two-stage construction project, heavy duty scaffolding was used for heights that allowed scaffolding in the reinforced concrete structure of the sidewalk. Meanwhile, Counter Weight Form Traveler system was utilized for heights not suitable for scaffolding.

Besides the use of 366 tons rebar for construction of European Sidewalk, 7880 m² formwork assembly and 1800 m³ concrete casting were performed. In total, 6 Counter-Weight Form Travelers were used at different points of this project.





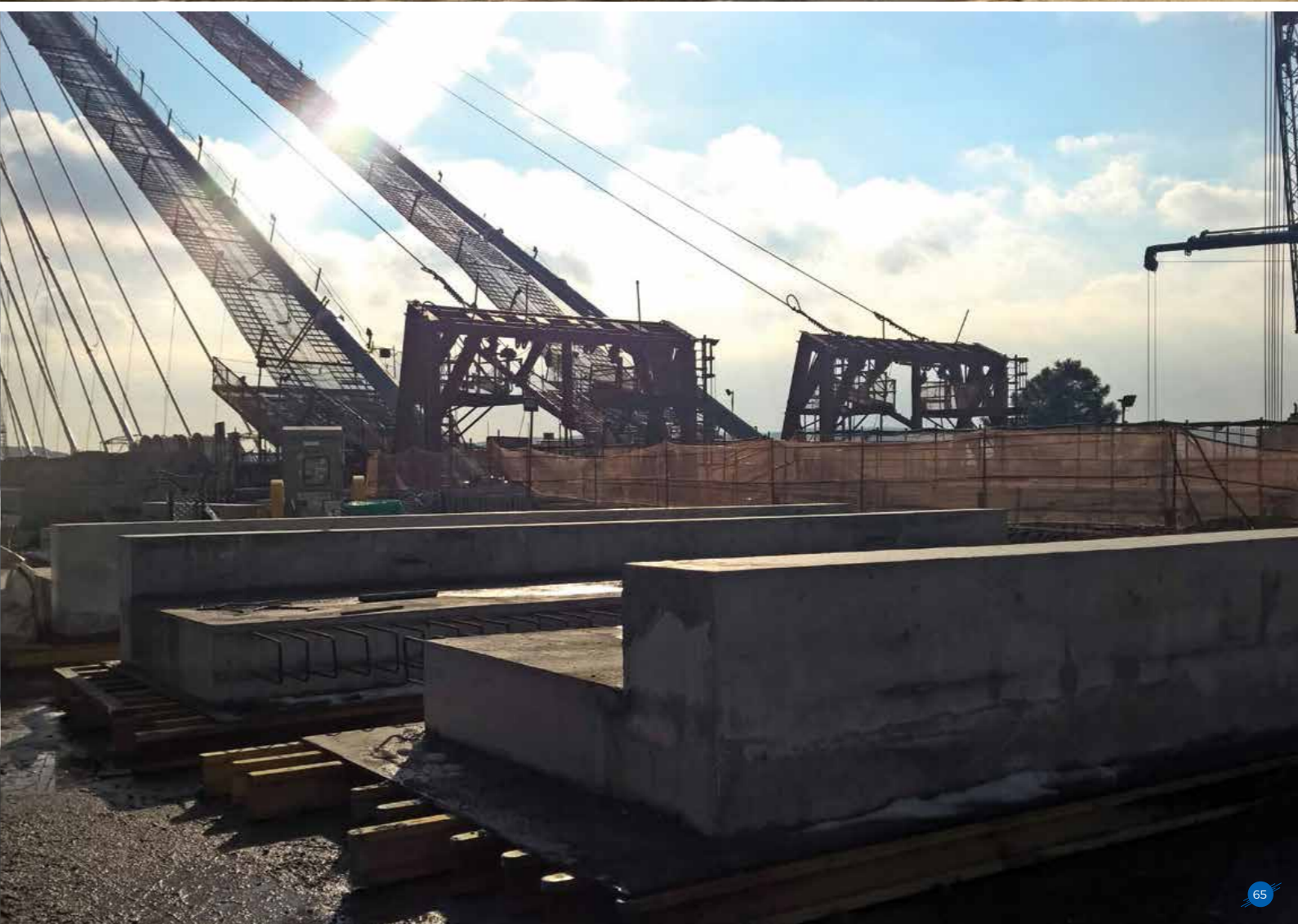
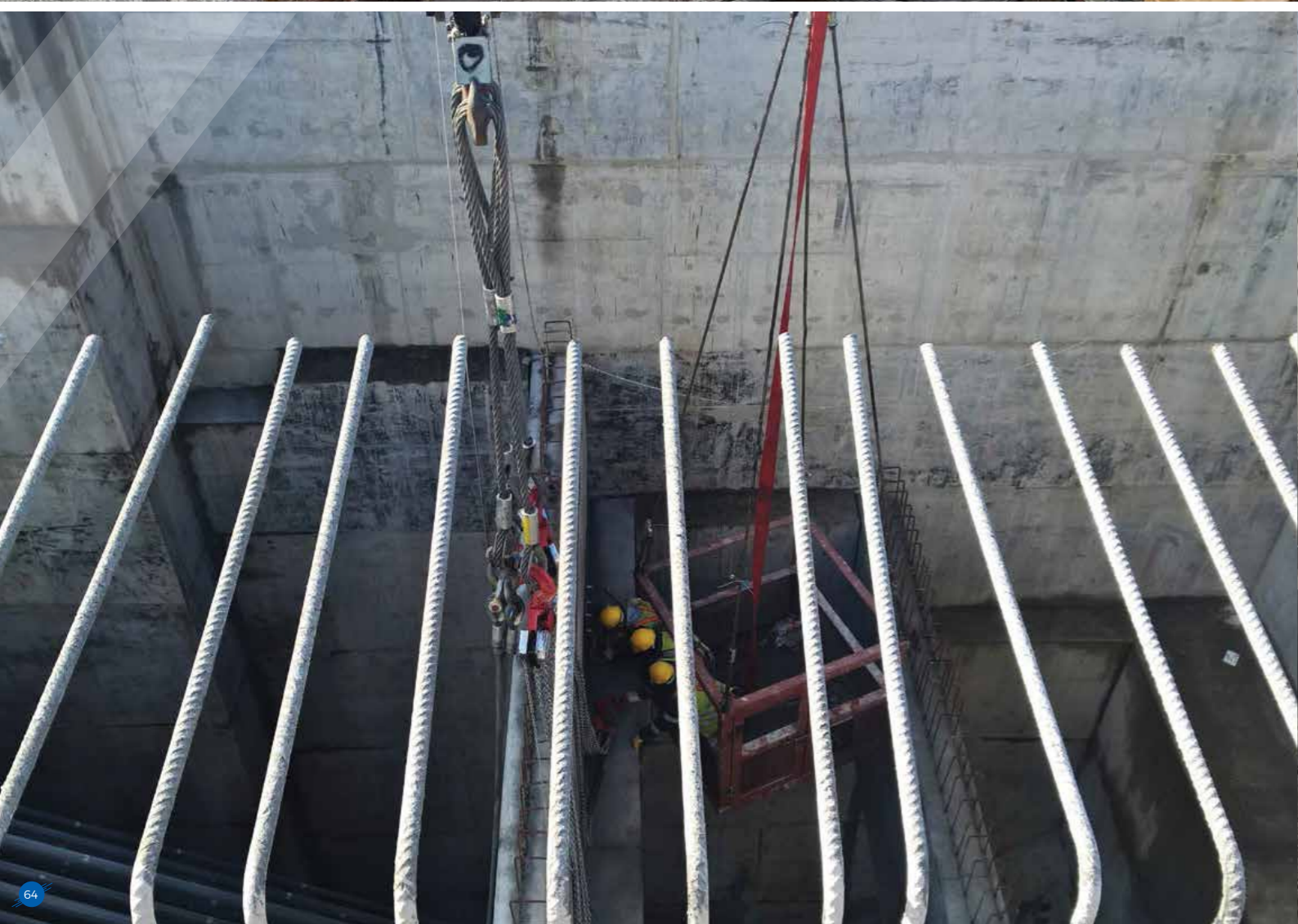
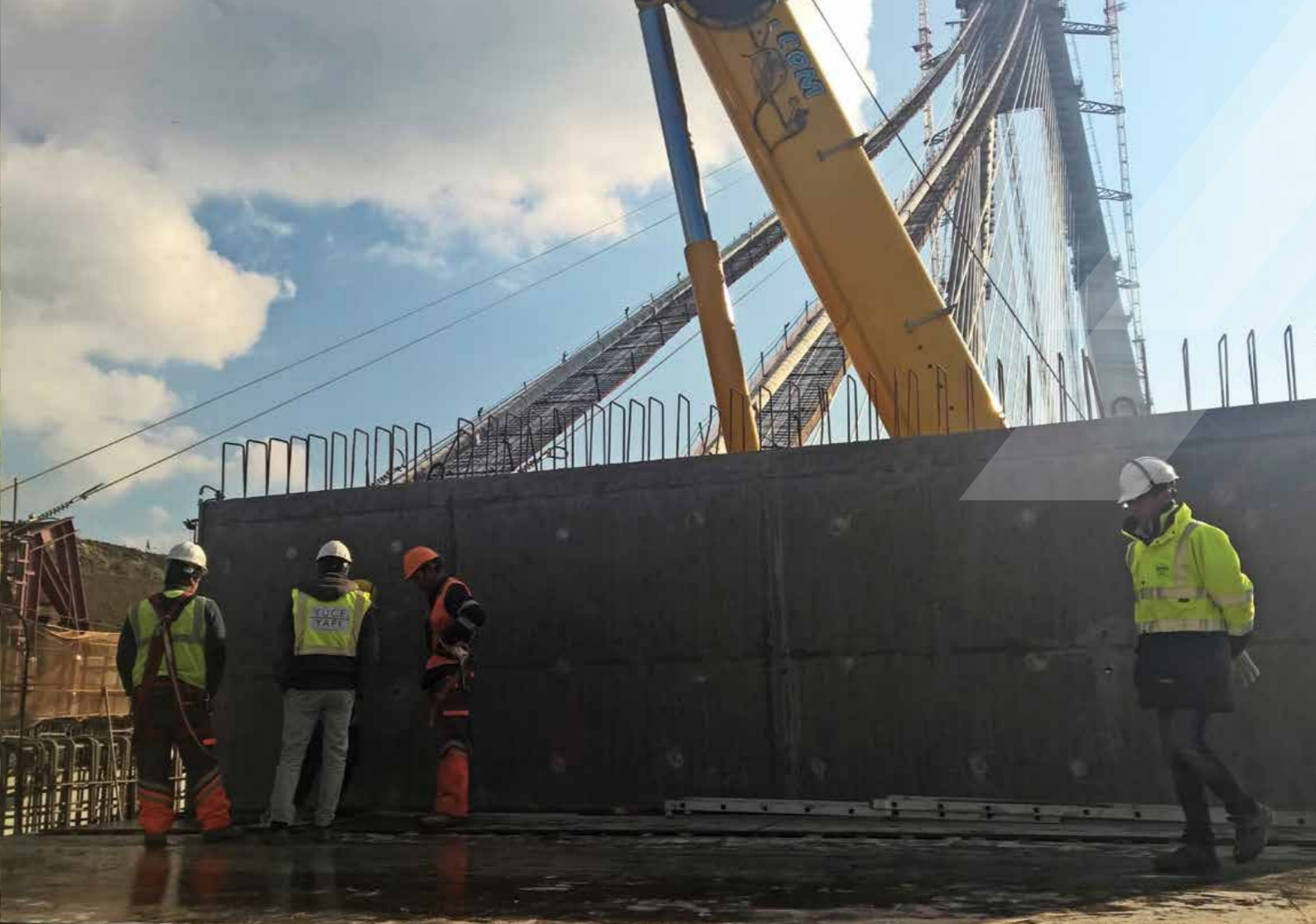


European Anchor Block Covering. Precast Beam Fabrication and Installation

We have performed manufacture and on-site assembly of precast beams necessary for closing the top of the main cable chamber.

Yüce Yapı has closed the top of the European Anchor Block main cable chamber with precast beams weighing almost 30 tons. For precast beams which were manufactured at the site, 311 m³ concrete casting, 79 tons rebar installation and 942 m² formwork assembly were completed. After the erection of beams, upper deck and concrete filling works were completed.







European Anchor Block Transition Slab Construction

Within the scope of Anchor Block Transition Slab construction which provides transition from highway to the bridge connection viaduct, Yüce Yapı manufactured 487 m² of formwork assembly, 135 tons of rebar installation, and 1521 m³ of concrete casting.

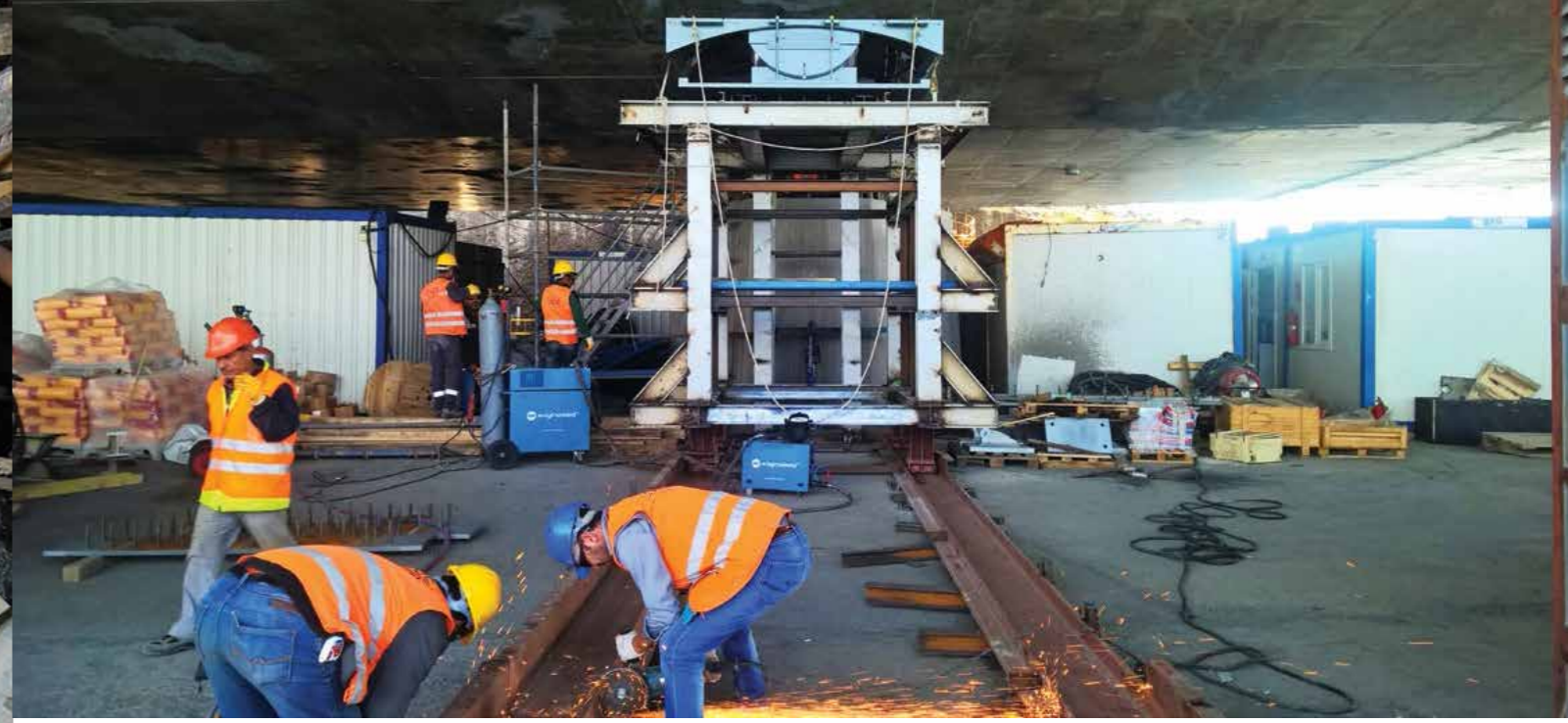




Substation Building Retaining Wall Construction

Retaining walls were constructed in order to protect the grounding and foundation of the substation building located on a hill on the European Side.





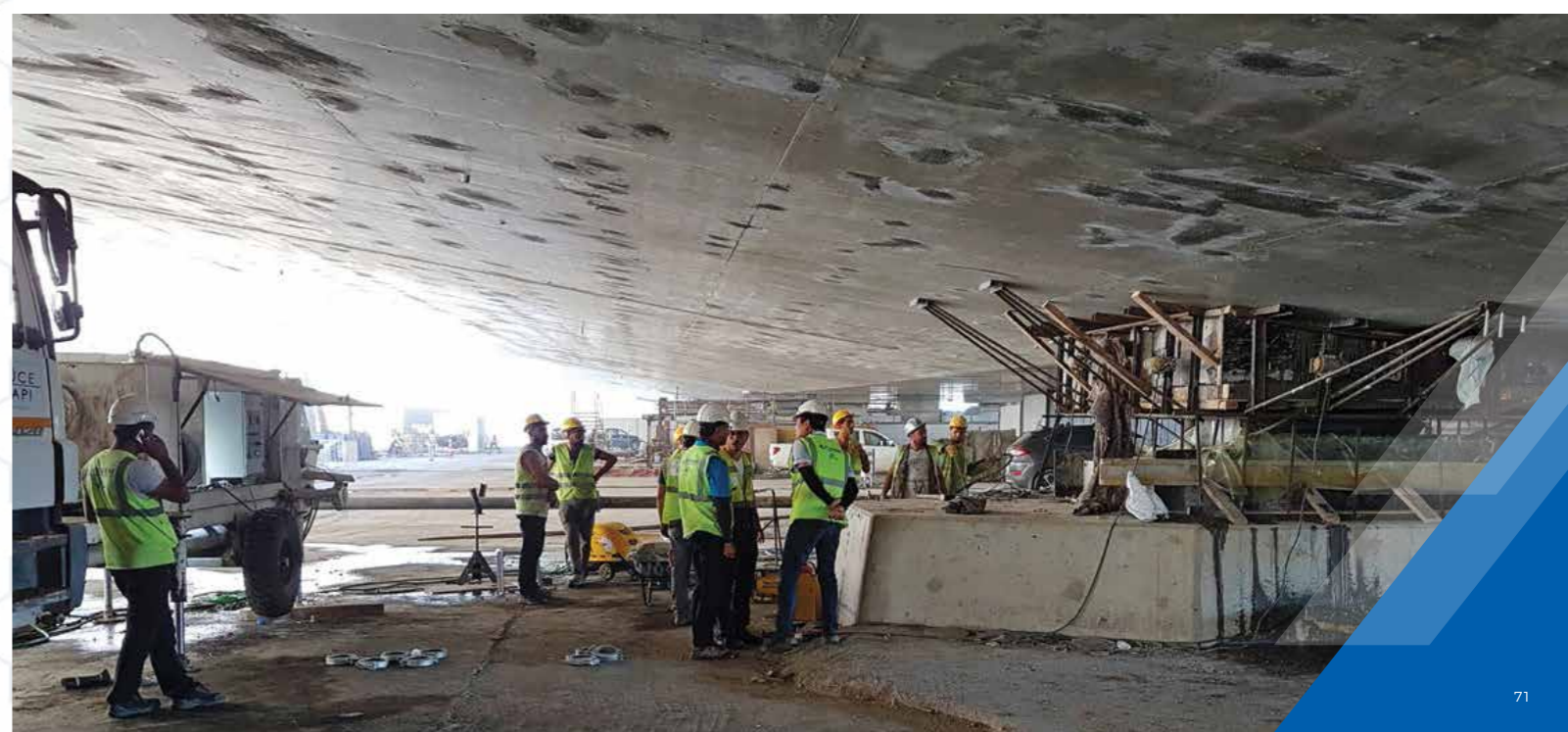
Pendulum Bearing Installation & Presetting

Despite the presence of serious technical difficulties and unbearable risks brought on by the restricted work area under the completely constructed Side Span, Yüce Yapı succeeded in completing one of the world's hardest bearing installations.

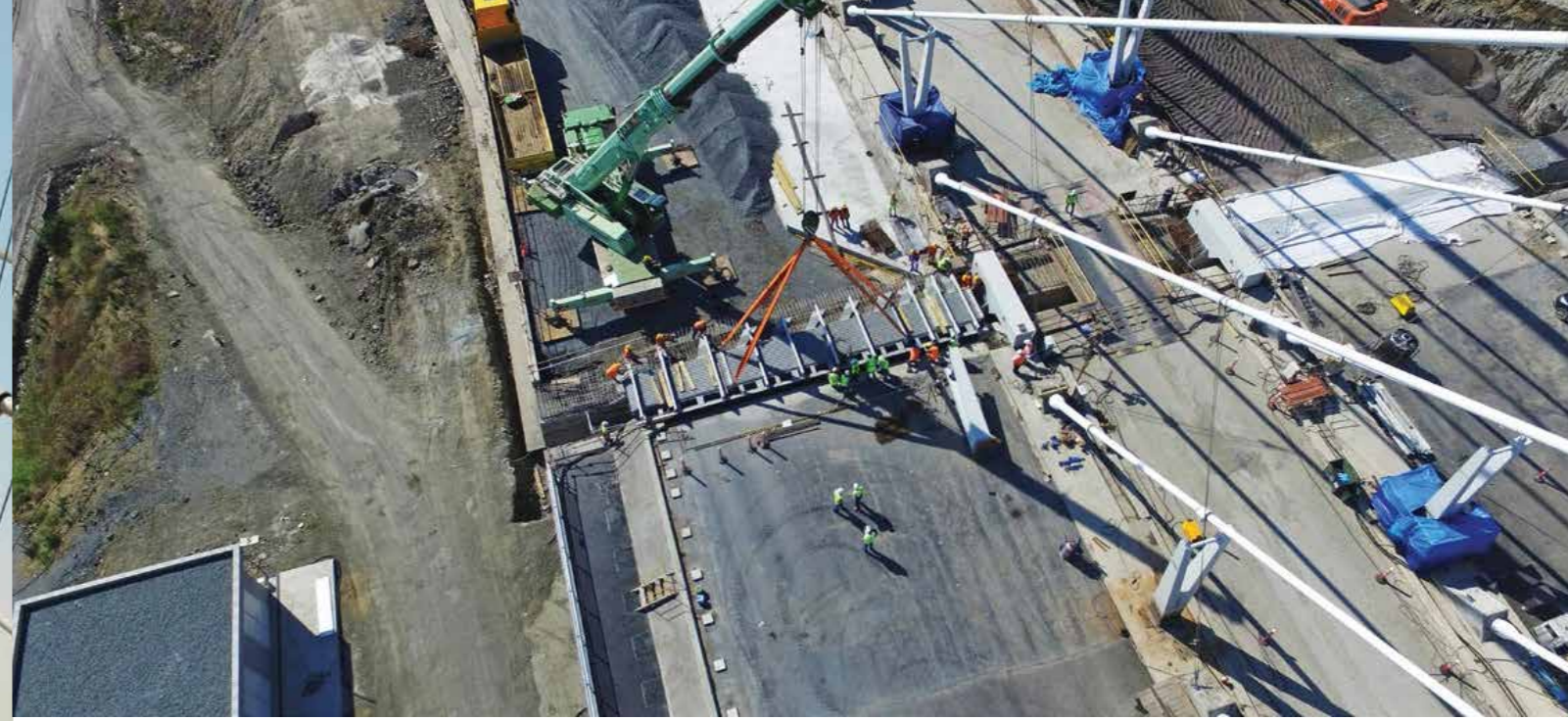
As Yüce Yapı, we accomplished the installation and pre-settings of 12 pieces of Pendulum Bearings (4 pieces of 14350 kg, 4 pieces of 8640 kg, and 4 pieces of 7400 kg) under the side-span. The manufacture of these bearings, specially designed by MACEBA, temporarily utilized elastomeric bearings in the beginning due to the time constraint of the project. permanent bearings were mounted in their place by Yüce Yapı only after completion of the side-span superstructure works. Therefore, this is also considered as a bearing replacement project.

Since there was no way to use a crane for these permanent bearings, they were brought to the mounting area under Side Span by the help of the steel rail and moving platform; then later slid into a very narrow assembly area via Moving Wagon. Afterwards, the entire installation

process, including upper and lower pedestal reinforcements, concrete casting by reverse suspended formwork, non-shrink grouting and epoxy injection, were carried out by Yüce Yapı.







Swivel Joist Expansion Joint Installation

One of the world's largest expansion joint assemblies for the world's largest suspension bridge deck has been realized by Yüce Yapı.

Expansion joints manufactured by Maurer Söhne with a total length of 59 meters (Roadway: 17.465 meters X 4 pieces; Railway: 9.80 meters x 2 parts; Sidewalk: 4.08 meters x 4 Pieces; Technical Zone: 2.50 meters x 4 pieces) and an elongation capacity of 1640mm were installed by Yüce Yapı.

Given the summer season, deck elongation throughout the day was very rapid and extreme due to the high temperature difference between day and night during the installation period. Because expansion joints had been preset at 20°C, any adjustments were a race against time; thus, the fixing operation was started just before sunrise when the shortening was highest, and completed within the day by very coordinated, planned and rapid work. After the fixing operation, concreting and assembly were completed. Additionally, welded connections of the multi-part expansion joint were made by Yüce Yapı.







Steel Drainage Pipe System Installation

Yüce Yapı has completed the manufacturing and assembly of steel drainage system consisting of 112 pieces for the full-length of the deck which is 2008 meters and comprised of 1408m Main Span and 600m Side Span, in order to prevent accumulation of rainwater on the bridge. This project was carried out from beginning to end by Yüce Yapı including workshop manufactures, on-site assembly, Steel deck and its welded connections.





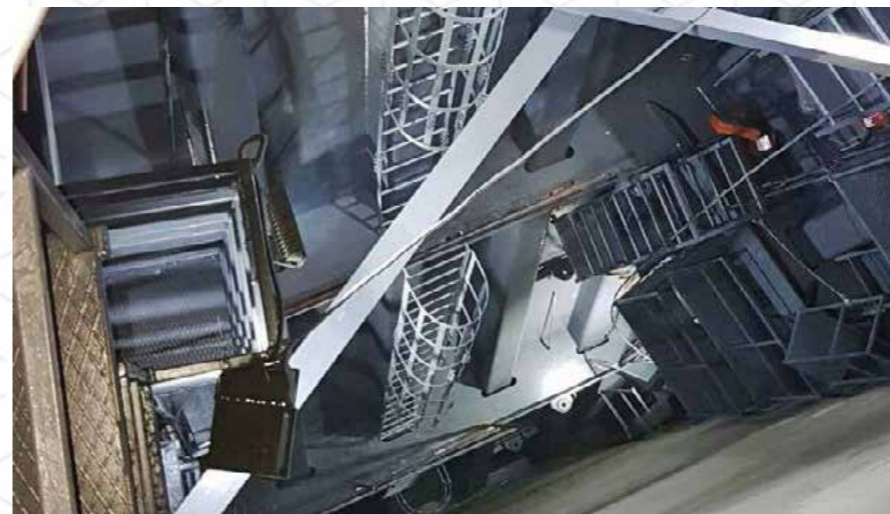
Top Tower Beam (TTB) Platform Manufacturing

Yüce Yapı manufactured the platforms to create a work area and provide a transition between North and South Pylons at levels of +299 and +269 of European and Asian towers, respectively.



The manufacture and assembly of stairs enabling access to the inside of TTB (Tower Top Beam) Lower Panel of European and Asian towers of the Bridge were performed by Yüce Yapı. Since access to this zone was achieved through just one manhole and a narrow Tower Elevator, these stairs were designed and manufactured as multi-element small modules, and were carried to their place manually for assembly and welding.

TTB Ladder Manufacturing & Installation

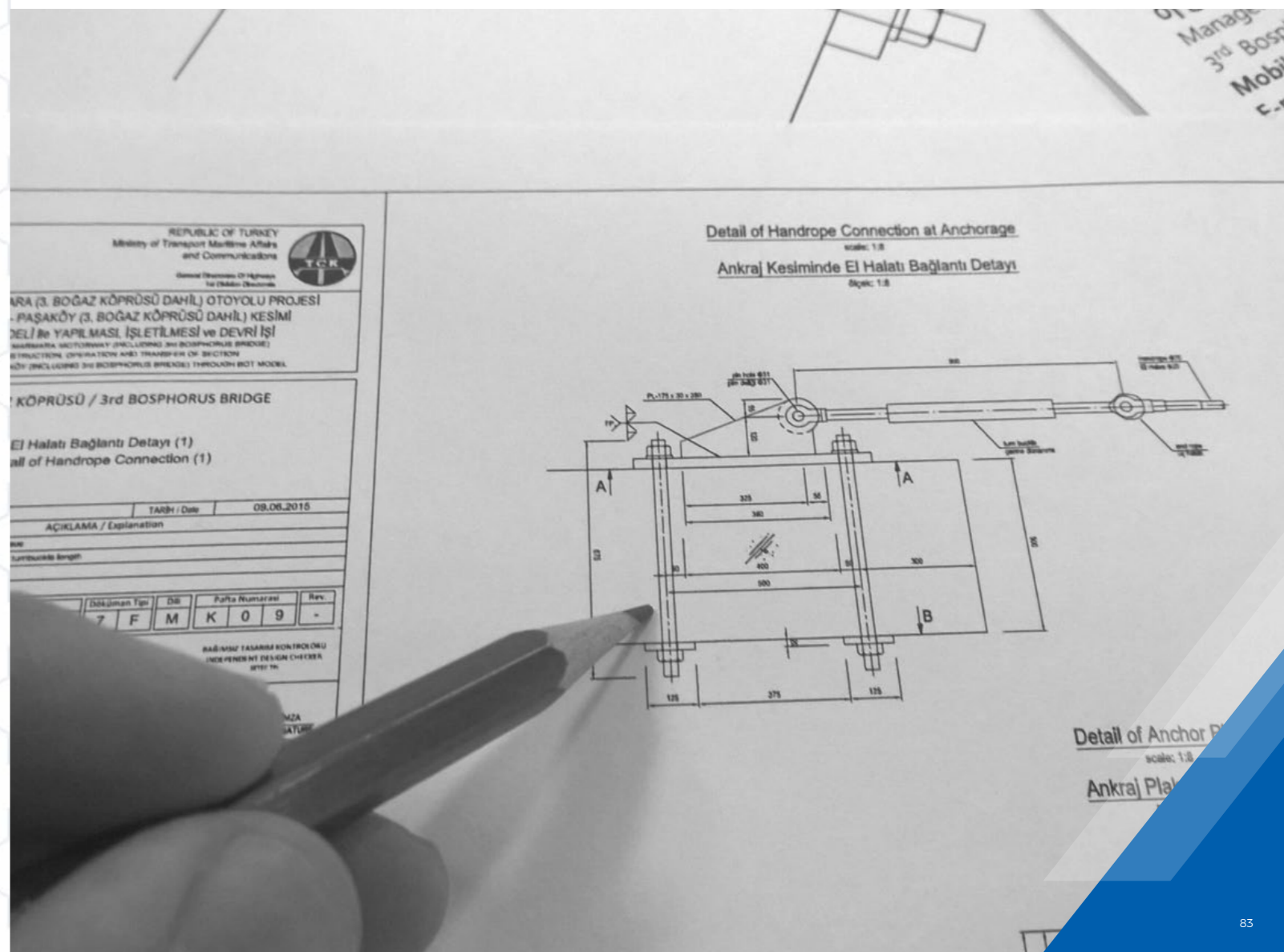




Hand Rope Post Manufacturing

For all maintenance works required for sustainability of Yavuz Sultan Selim Bridge, it is necessary to walk safely on the Main Cable.

Steel structures necessary for assembly of Hand Ropes on the Main Cable have been manufactured by Yüce Yapı.





Steel Doors of Pylon and Side Span Manufacturing & Installation

Manufacturing and installation of all gates on the bridge structures (Main Tower, Side Span, Anchor Block and etc.) have been made by Yüce Yapı. A 60-doors set with 40% reproofing was completed.

Other Bridge Facilities Manufacturing & Installation

Various steel structures such as Manhole covers, Aviation Supports, Navigation Supports, skirt plates, Pier4 Working Platforms, and Lifting frame were manufactured by Yüce Yapı.



Installation of European Side Span formwork panels as well as manufacturing of upper deck formwork and sca olding at Segment 1 were conducted by Yüce Yapı.

European SideSpan Formwork Assembly

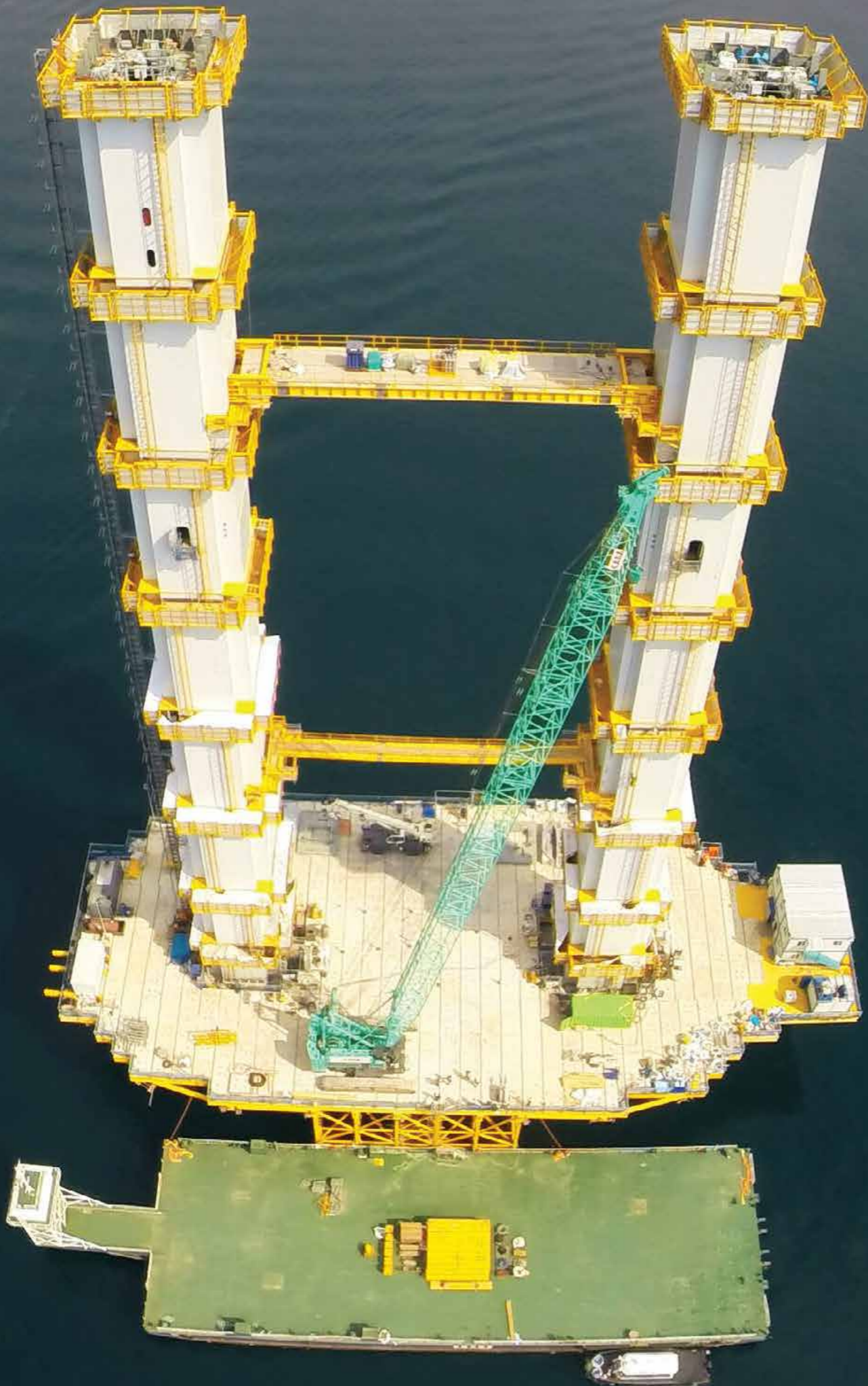


Osmangazi Bridge

Reinforced Concrete and Steel Fabrication Works (IHI Infrastructure Systems Co. Ltd.)



- Reinforced Concrete Slab Fabrication for Main Tower Working Platforms.
- Pit Slab & Fence and Pulley Beams Fabrication for Tower Lifts.



Osmangazi Bridge

Reinforced Concrete and Steel Fabrication Works



Reinforced Concrete Slab Fabrication for Main Tower Working Platforms

For Osmangazi Bridge, precast slabs of working platform critical for heavy vertical loading and assembly precision on caisson foundation have been fabricated by Yüce Yapı. The project covering 440 tons of rebar installation, 7120 m² of formwork assembly and 1470 m³ of concrete casting were completed before the deadline.

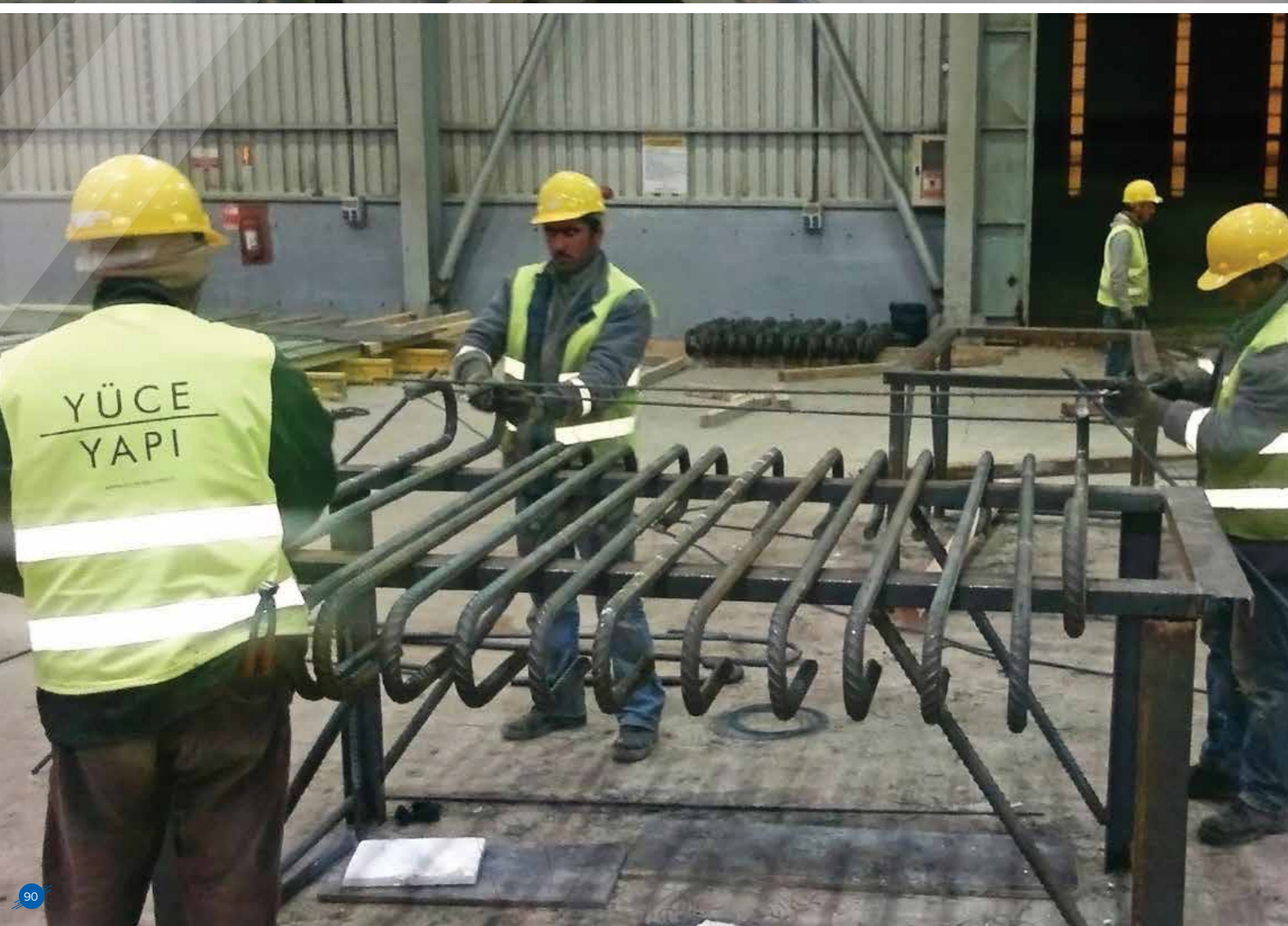


For Osmangazi Bridge- the world's fourth longest bridge, precast slab fabrication has been conducted by Yüce Yapı.



Thanks to advanced engineering solutions, we produce high quality, fast and reliable projects.







Pit Slab & Fence and Pulley Beams Fabrication for Tower Lifts

Fabrication of fences for tower diaphragms where elevators stop inside the Main Tower were carried out by Yüce Yapı. Fence components within 3D Bridge tower model given for each tower diaphragm have been separately modelled by Yüce Yapı by eliminating the risk of any overlap. This design phase was repeated for each tower diaphragm; any overlapping likely to occur between the fence and various materials such as cable, ventilation equipment, and elevator supports were eliminated during the modelling phase. After the said design period, fabrication was conducted.



Also Yüce Yapı participated in the fabrication of Osmangazi Bridge steel structures.

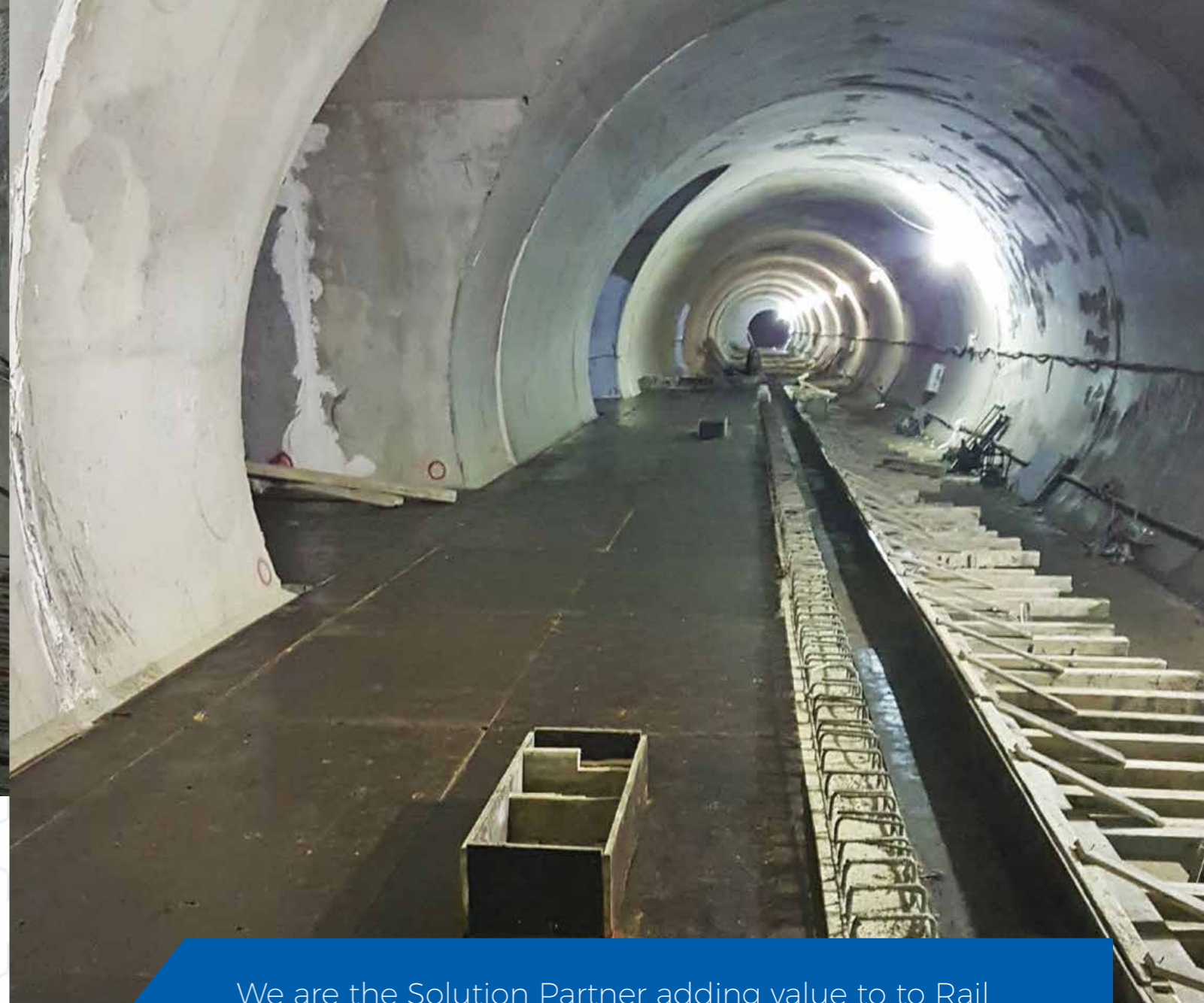
Üsküdar Ümraniye Çekmeköy Metro Line

Reinforced Concrete Works

(Doğuş İnşaat A.Ş.)

- › Çakmak Station Passenger Platform Construction
- › Çakmak Station Rail Foundation Works
- › Yamanevler Station Reinforced Concrete Platform Construction
- › Yamanevler Station Walkway & Rail Foundation Works





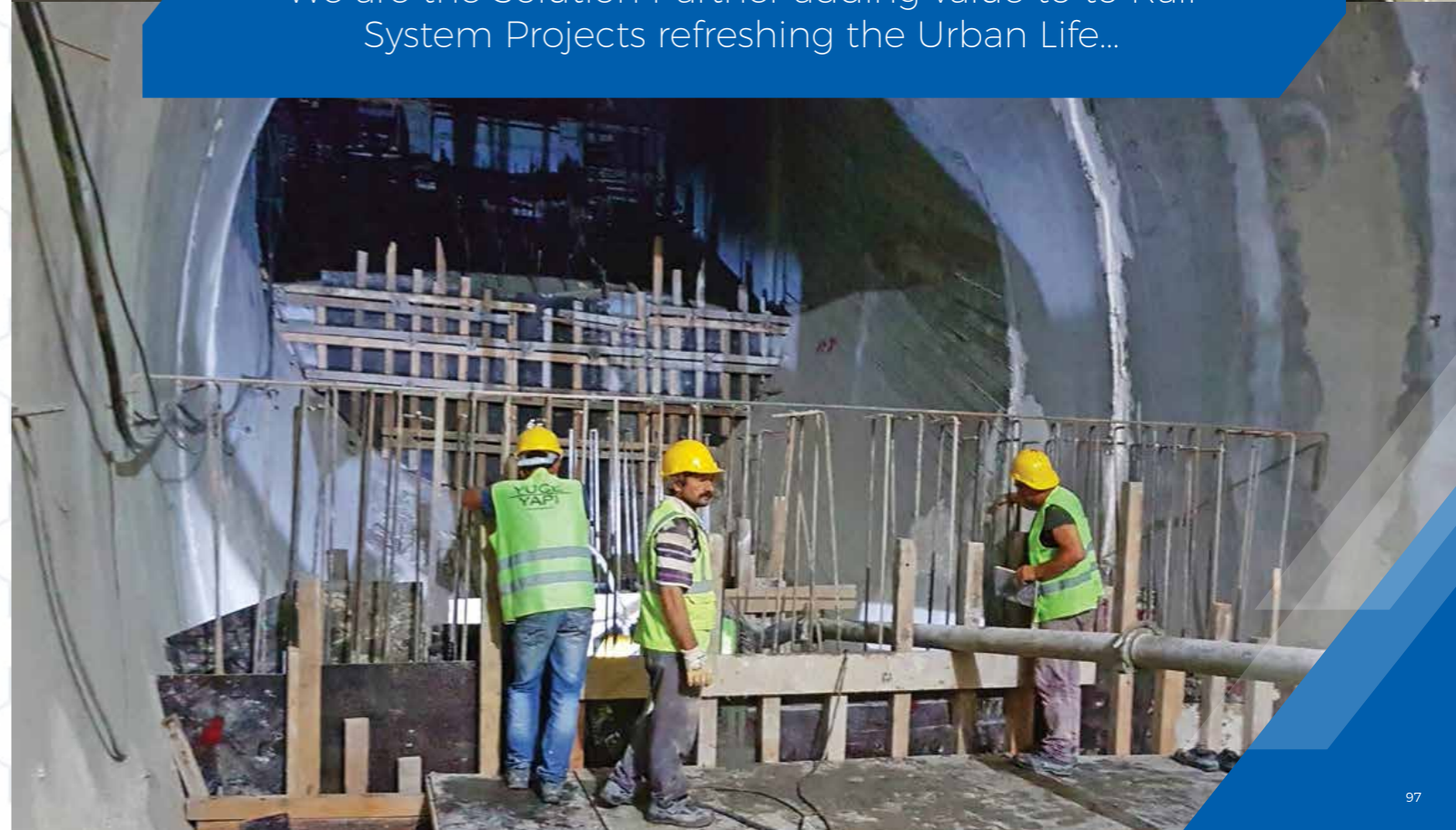
Çakmak Station Passenger Platform Construction

Included in the Üsküdar-Ümraniye Çekmeköy line- a new and signi cant leg of the expanding network of İstanbul Metro, is the construction of Çakmak Station, of which the reinforced concrete passenger platform has been undertaken by Yüce Yapı.

Within the scope of the Üsküdar-Ümraniye-Çekmeköy Subway project, reinforced concrete works of Çakmak Station passenger platform were completed by Yüce Yapı. For this work, 81 tons rebar installation, 3280 m² formwork assembly, 1528 m³ concrete casting was accomplished.



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Çakmak Station Rail Foundation Works

Reinforced Concrete works beneath rails along the passenger platform and turnout zones of Çakmak Station were completed. Within the scope of these works, concrete structures beneath rails required 30 tons of rebar installation and 485 m³ of concrete casting.





Yamanevler Station Reinforced Concrete Passenger Platform Construction

Within the scope of concrete works of Yamanevler Station passenger platform, 91.25 tons of rebar installation, 838 m³ of concrete casting and 4743m² of formwork assembly were accomplished in total by Yüce Yapı.





Yamanevler Station Walkway & Rail Foundation Works

Between Yamanevler- Çarşı Stations, tunnel walkways and concrete structures beneath the rails were all constructed by Yüce Yapı. With a total length of 2001 meter walkway, manufacture of 1094 m concrete structures beneath rails and 3940 chemical anchors ($\phi 14$ mm), this project was performed by Yüce Yapı. Within this scope, 2688 m³ concrete casting and 104 tons rebar installation were completed.

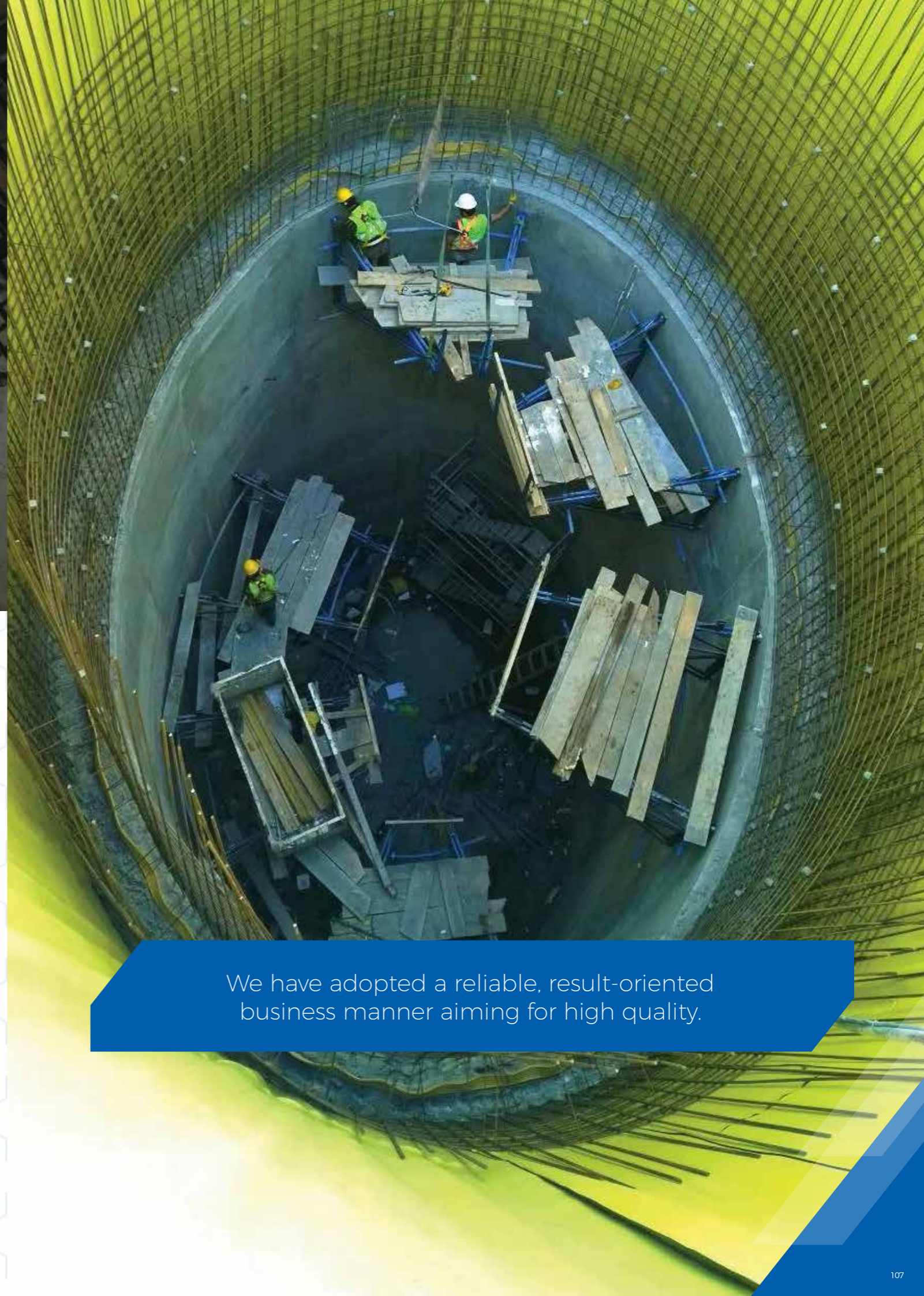


Levent Hisarüstü Metro Line

Reinforced Concrete Works (Alarko-Makyol J.V.)

- Escape Shaft shaft Concrete Lining and Inner Structure Works
- Escape Tunnel and Escape Shaft Access Tunnels Invert and Arch Lining Works.
- Ventilation shaft Concrete Lining and Inner Structure Works





Escape Shaft, Escape Tunnel, Ventilation Shaft & Ventilation Tunnel Concrete Lining and Inner Structure Works

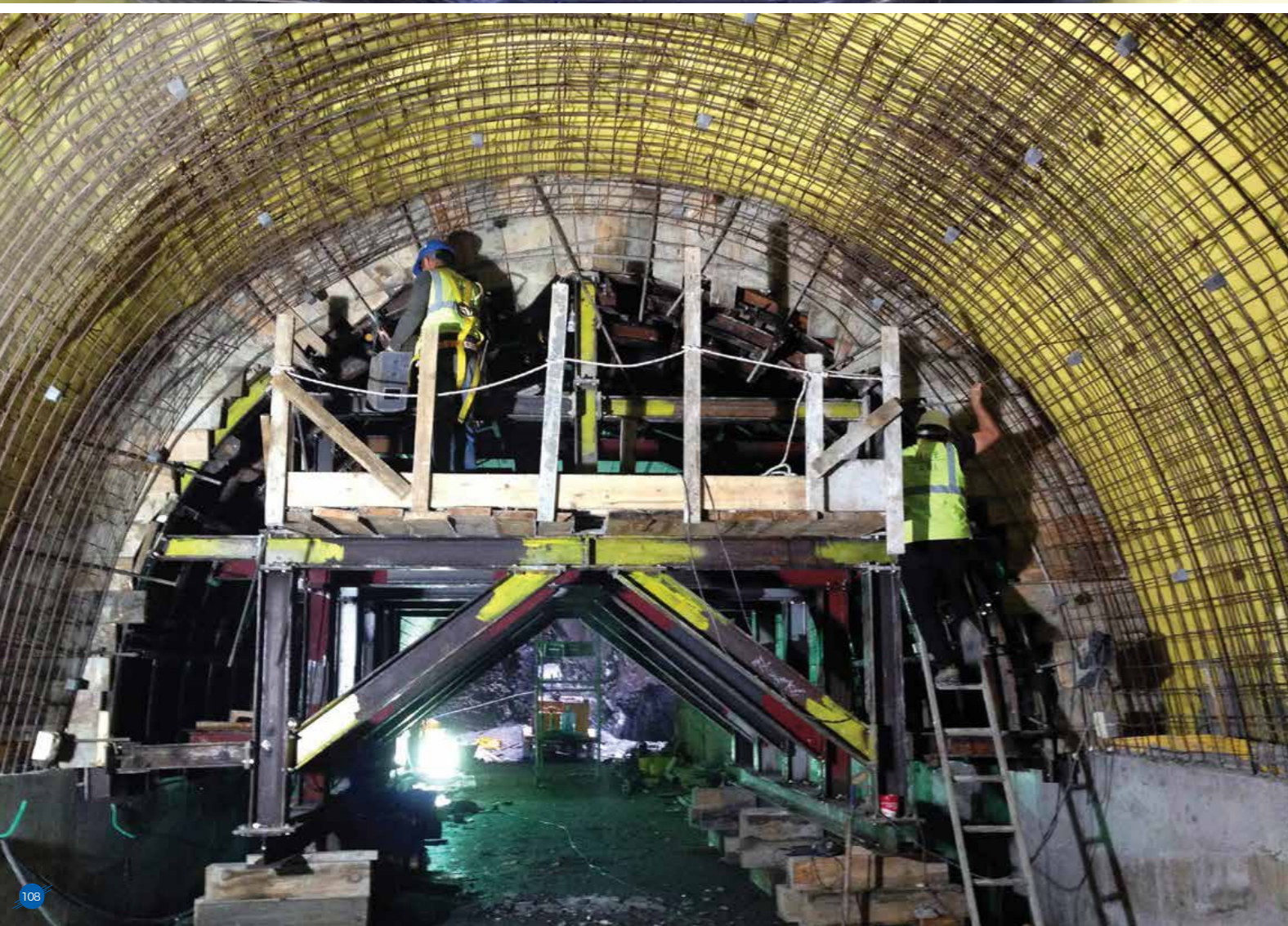
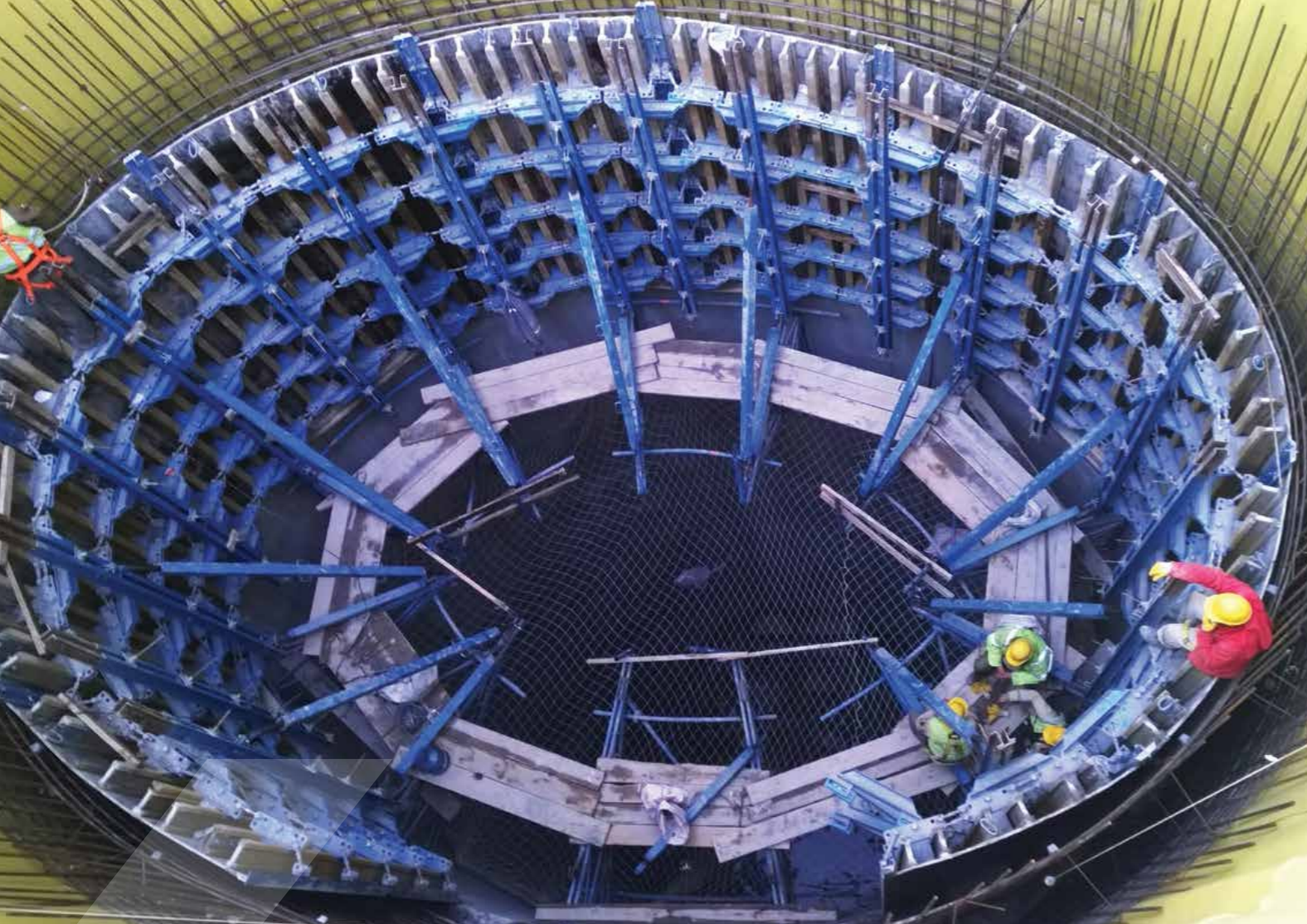
Yüce Yapı produced concrete lining of the Escape shaft in 27 m height, Escape tunnel in 54 m length, Ventilation shaft in 35 m height and Ventilation tunnel in 69 m length.

Within the scope of this project, 230 ton of rebar installation, 3050 m² of elliptic climbing formwork assembly, 2770 m² of steel tunnel formwork assembly and 3650 m³ of concrete casting, in addition to 1357m² wooden formwork assembly and 3635 chemical anchoring was accomplished; also concrete inner structures of the escape and ventilation shafts were fabricated.

For the Levent - Hisarüstü subway line- one of the most significant rail system projects of İstanbul, the concrete lining of ventilation shaft and tunnel as well as the escape shaft and tunnel were produced by Yüce Yapı.



We have adopted a reliable, result-oriented business manner aiming for high quality.



Marmaray

Reinforced Concrete Works

(Taisei Corporation)

- › Temporary Concrete Lining at North & South PF, PFV-S and PFV-L Tunnels
- › Arch Concrete Lining of East PFV-L & PFE at South and North Tunnels.
- › Concrete Lining Works of Escape Shaft, Escape Tunnel, Cross Passage & Inner Structure of Escape Shaft at Sirkeci Station
- › Construction of East and West Ventilation Shaft Transformer Building
- › Construction of West & East Ventilation Slab
- › Construction of Infrastructure for West and East Ventilation Shaft & Sarayburnu storage site. Construction of Compacted Back II, RC Ramps and Stairs at West and East Ventilation Shaft.
- › Construction of Floodgate at North and South Tunnel at Sirkeci
- › Construction of TBM Entrance Endwalls at North and South Tunnels at Sirkeci.
- › Construction of PFV/PFE Endwalls at North and South Tunnels at Sirkeci.
- › Invert Concrete Lining of East PF and PFV Tunnels at Sirkeci.
- › Demolishing of Diaphragm Wall at North Entrance in Sirkeci Station for TBM6, Reaction Wall Construction for TBM6, Concrete Casting for Invert of TBM6, Capping of TBM6 at the North Entrance Shaft.





We broke new grounds for 10 years as the solution partner of Taisei Corporation in the projects that add value to community life.

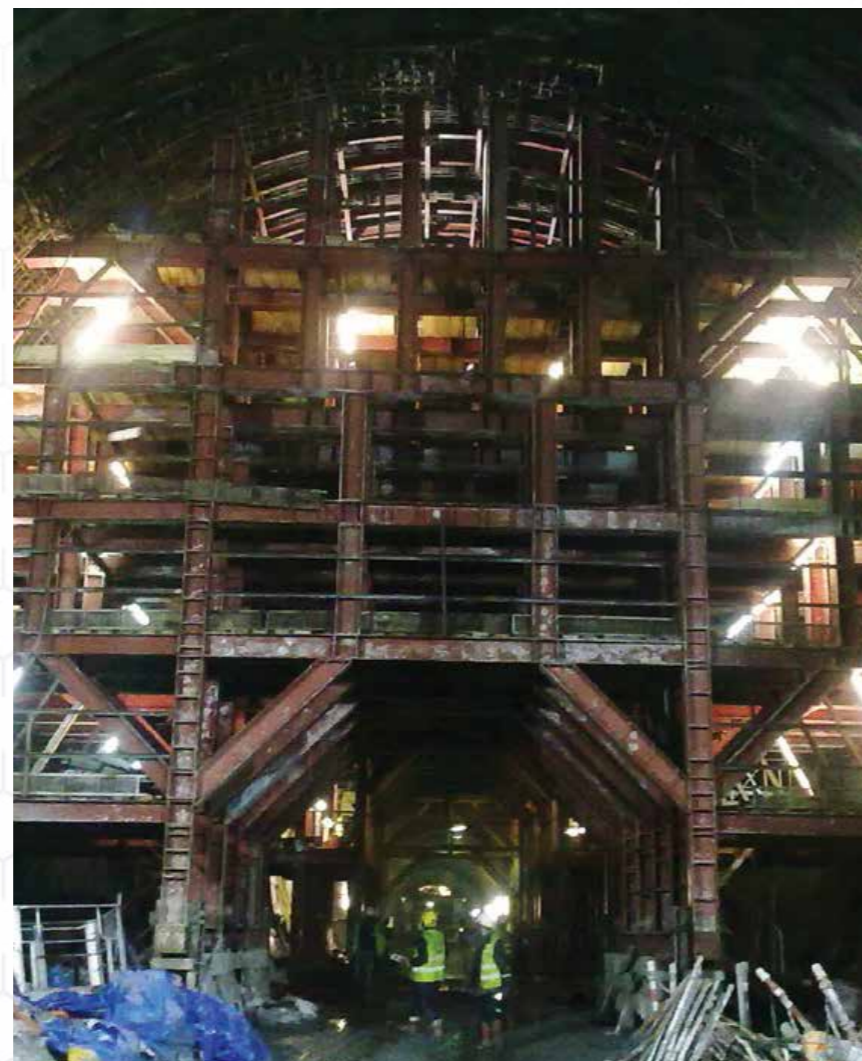


Temporary Concrete Lining at North & South PF, PFV-S and PFV-L Tunnels

The largest arch lining within the scope of Marmaray Project has been applied

With an inner diameter of 14.73 m circular arch lining, the largest tunnel concrete lining of Marmaray Project was produced by Yüce Yapı.

Tunnel Length: 28.1 m
 Casted Concrete: 1015 m³
 Rebar Assembly: 114.5 tons
 Steel Tunnel Formwork: 1223.5 m²

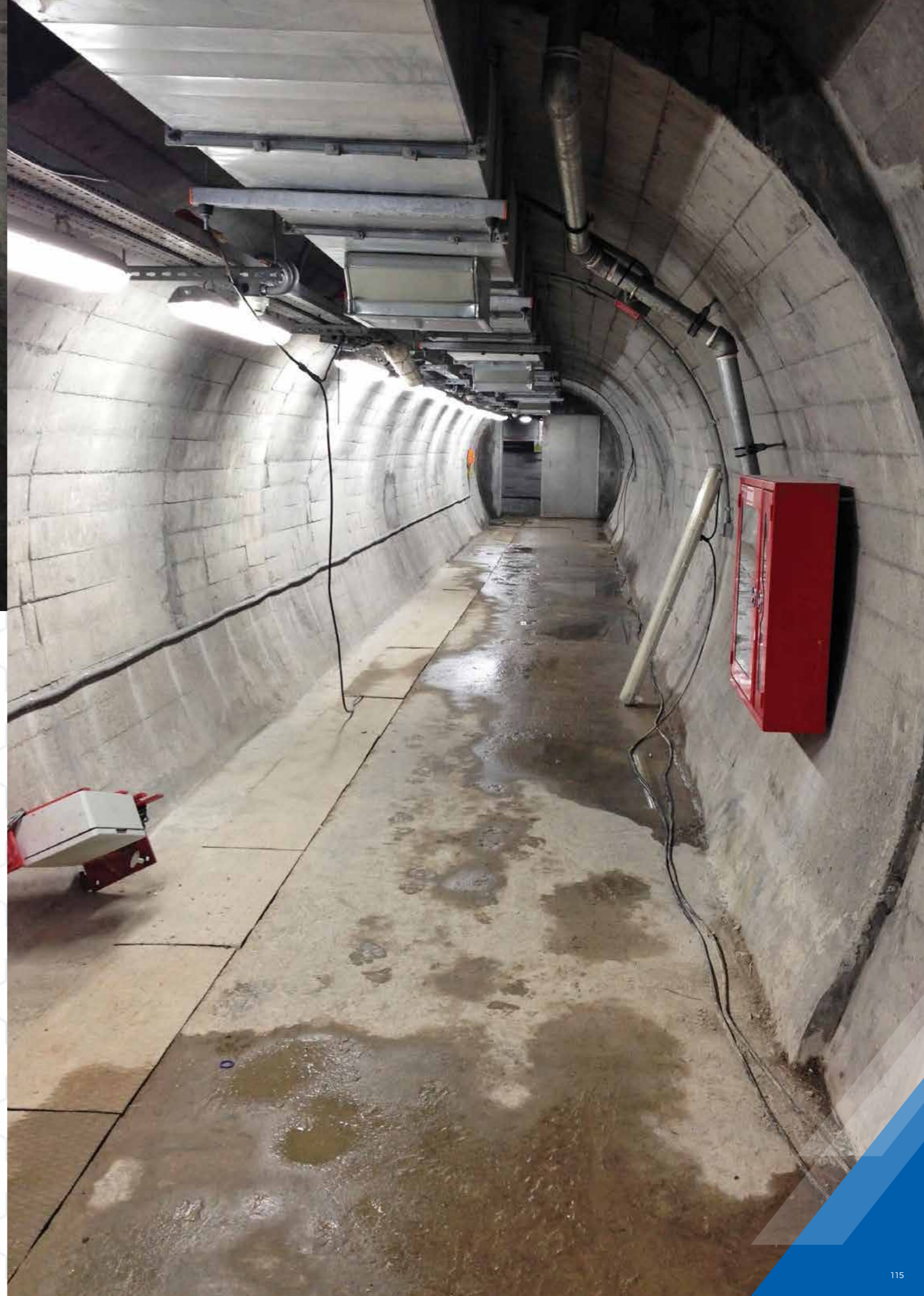


Arch linings of East Shaft at Sirkeci Passenger Platform Tunnels were produced by Yüce Yapı.

Tunnel length:
 42m Concrete: 1645 m³
 Rebar Assembly: 279 Tons
 Wooden Butt Joint Formwork Fabrication: 410 m²

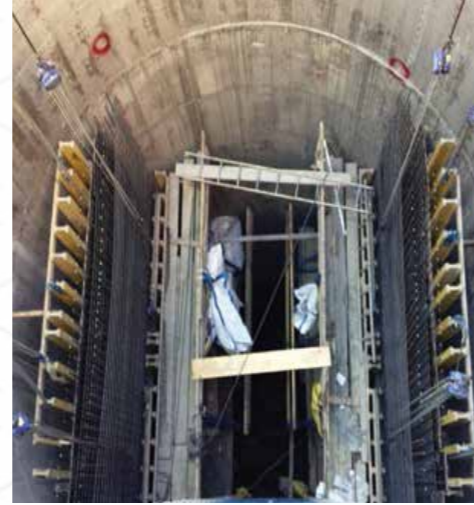
Arch Concrete Lining of East PFV-L & PFE at South and North Tunnels.





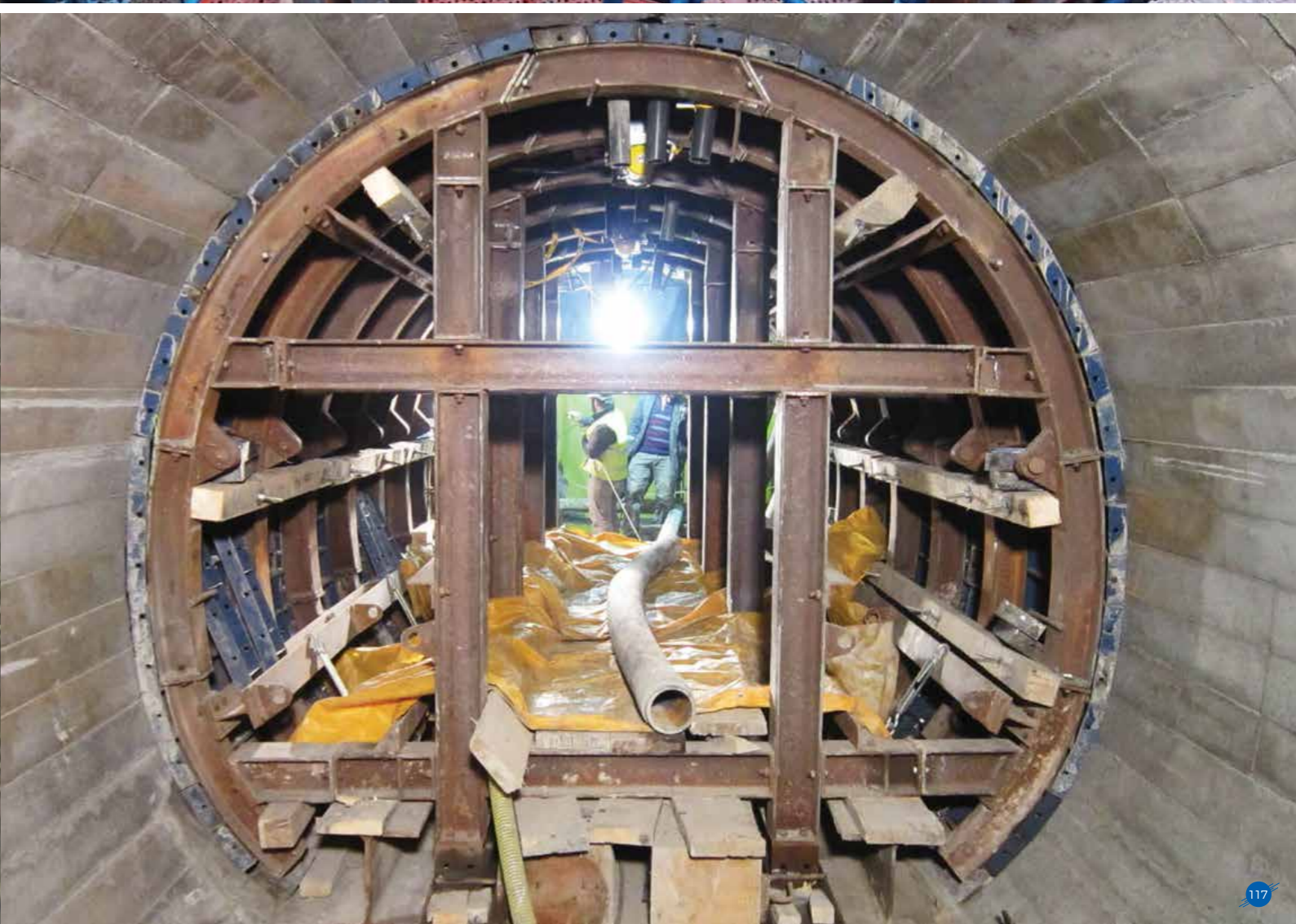
Concrete Lining Works of Escape Shaft, Escape Tunnel, Cross Passage & Inner Structure of Escape Shaft at Sirkeci Station

Rebar: 252 tons
 Steel climbing formwork for shaft lining: 942 m²
 Tunnel Formwork: 20 climbing sequences (length of each set: 4.5 m- Tunnel diameter: 7.2m.)
 Concrete: 2865 m³
INNER STRUCTURE:
 Wall:
 Climbing formwork: 920.6 m²
 Concrete: 184.1 m³
 Rebar: 20.26 tons
 Formwork: 214.1 m²
 Concrete: 39 m³
 Rebar: 4.59 tons



Concrete linings and inner structures of Escape Shafts and tunnels at Sirkeci Station were completed by Yüce Yapı.







Construction of East and West Ventilation Shaft Transformer Building

Within this scope, 56.06 tons of rebar, 1731 m² of formwork and 544 m³ of concrete fabrication were carried out, and Yüce Yapı also completed all isolation, back filling and finishing works of the project.

East and West Ventilation Shaft Transformer Buildings were constructed by Yüce Yapı.





Construction of West & East Ventilation Slab

West Ventilation Slab was constructed by Yüce Yapı. The scaffolding built for construction of these slabs were a cantilevered scaffold to enable vehicle transition required for continuation of tunnel works. Within this scope, 23.22 tons of rebar, 600.7 m² of formwork and 259.16 m³ of concrete fabrication were accomplished.





Construction of Infrastructure for West and East Ventilation Shaft & Sarayburnu storage site. Construction of Compacted Back II, RC Ramps and Stairs at West and East Ventilation Shaft.



Yüce Yapı accomplished the construction of Sirkeci East and West Ventilation Shafts infrastructures, rainwater channels, the wastewater and clean water line as well as the integration of them to the main line, and additionally the reorganization and landscape works of Sarayburnu storage site, all during the period of handing it over to the employer.



Construction of Flood-gate at North and South Tunnel at Sirkeci

Concrete works related to floodgates located at Sirkeci Station were performed by Yüce Yapı.





Construction of TBM Entrance Endwalls at North and South Tunnels at Sirkeci.

Construction of PFV/ PFE Endwalls at North and South Tunnels at Sirkeci.



Invert Concrete Lining of East PF and PFV Tunnels at Sirkeci.

Having one of the largest invert cross-sections within the scope of Marmaray Project, PF and PFV Tunnel Invert concrete works under the East shaft were completed by Yüce Yapı.





Demolishing of Diaphragm Wall at North Entrance in Sirkeci Station for TBM6, Reaction Wall Construction for TBM6, Concrete Casting for Invert of TBM6, Capping of TBM6 at the North Entrance Shaft.

Preparatory works for Sirkeci Station North Pedestrian Tunnel TBM entrance were performed by Yüce Yapı. To this end, the diaphragm wall was cut according to the cross-section of TBM by using a core, demolished by an excavator, and finally a reaction wall was constructed for controlled entrance of TBM. Additionally, after completion of TBM excavation, tunnel invert and tunnel end wall were built.





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REFERENCES



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Merkez Mahallesi Nurhan Sokak No:2 Genan İş Merkezi Kat:2 Büro No:21
34406 Kağıthane / İstanbul - Türkiye
T: +(90) 212 514 39 39 E:info@yuceyapi.com.tr
www.yuceyapi.com.tr