



Applus 

Together
beyond
standards

ENERGY & INDUSTRY

Railways

2023



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1. Construction services

Areas of activity



railways



airports



water



roads



building



renewables



ports



industrial



waste management

Services

**Feasibility Studies,
Preliminary Design, Detailed
Design and Design Review
As built projects
Road Safety Audits
Topographical Services
Geotechnical Engineering**



**QA/QC
HSE
On site Inspection
Topographical Survey
Instrumentation and Monitoring
Testing of Materials
Contract management
Technical Office Service
Expertise Advisory**

**Road survey
Technical consultancy
Asset management systems
Structural Integrity Asset**

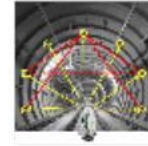


2. Railways knowledge

knowledge areas



Inspection & supervision
for construction. QA/QC



Ground and structural
monitoring



Geotechnical engineering



Laboratory testing



Pre construction Survey



O&M Inspection



Bridges Instrumentation
and Monitoring

Inspection and supervision for construction

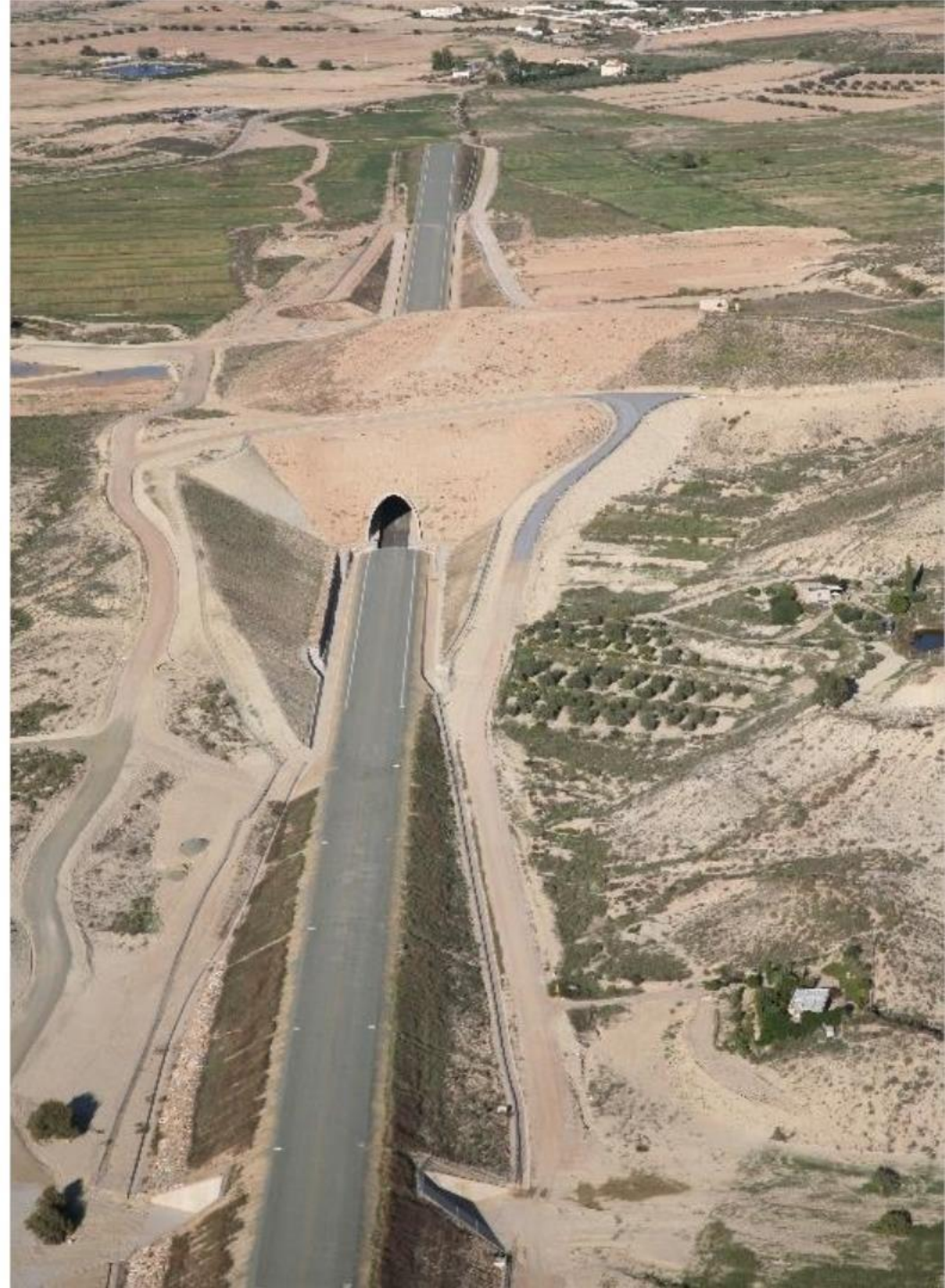
Applus has many experiences in railways, not only in conventional railway but also in High Speed Railway. We have been involved in the development of the HSR network of Spain, providing services in all the corridors.

We deal with complex projects, most of them with long tunnels in complex geological conditions and major structures with different typologies.

We provide services for: Design Review, QA/QC, Quantity Surveying, Schedule Monitoring, Budgetary Control, Contract Management and Expropriations

Our portfolio includes complete service: Platform, Track, Power Systems and Safety and Communication Facilities.

Applus has developed its own software for Inspection (SICE) and QA (ImApp)



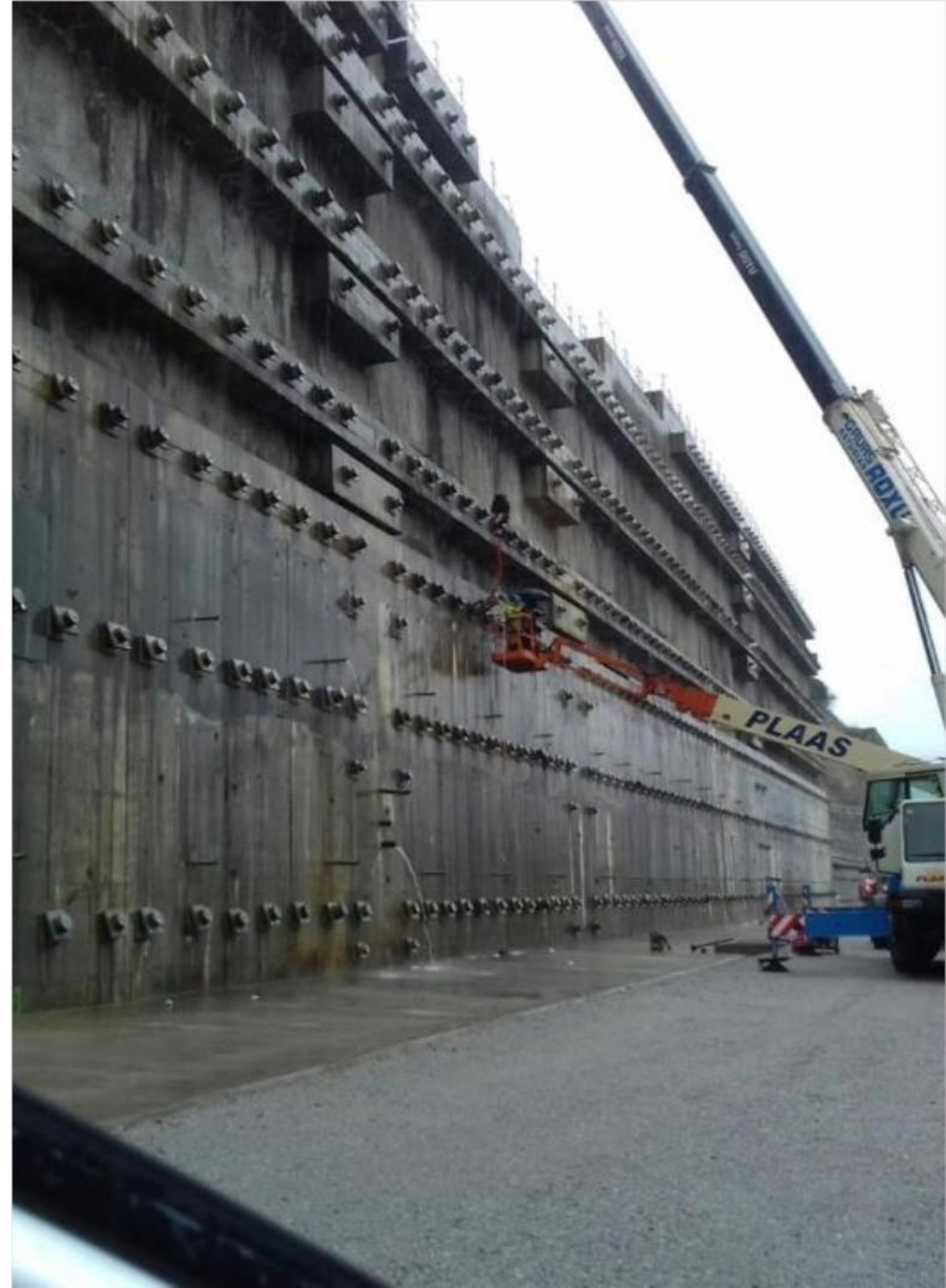
Geotechnical Engineering

At Applus we have a Specific Area of Geotechnical Engineering made up of a multidisciplinary team of Engineers and Geologists with extensive experience.

Our knowledge acquired over decades, together with our own geotechnical equipment and laboratories, allows us to offer our clients comprehensive solutions to the most complex problems.

We have the latest technology in drilling machinery as well as equipment for geophysical works.

We are involved in some of the most relevant works, such as the "Maintenance, geological-geotechnical knowledge expansion, monitoring, safety evaluation and improvement of screen 1 and Slide 2 of the León - Asturias High Speed Line, Pajares Bypass. Section: Sotiello – Campomanes"



Geotechnical, Structural Monitoring & Risk management



Applus continually explores the practical application of advanced technologies to provide innovative, cost-effective and appropriate solutions, and has delivered numerous metro projects all over the world.

We have relevant experiences in Geotechnical, Instrumentation and Monitoring and Risk Management.

Among our experiences we have to highlight the works of Instrumentation and Monitoring of several metro projects as the Line 9 in Barcelona Metro, Riyadh or Lima Metro Projects (ongoing), as well as many other works developed in other kinds of linear infrastructures HSR and Roads.

Applus has developed its own software for Instrumentation and Monitoring (SIGTUN).

Instrumentation and Monitoring of North and Central Launching Shafts , Package 3 (Line 5), Riyadh Metro.
KSA



Bridges Instrumentation & Monitoring

At Applus, in collaboration with Calens, we are experts in structures intelligent monitoring using our own technology based on Optic Fiber.

Our multidisciplinary team, involves experts in different knowledge areas of Civil Engineering, Telecommunications and Structural Engineering.

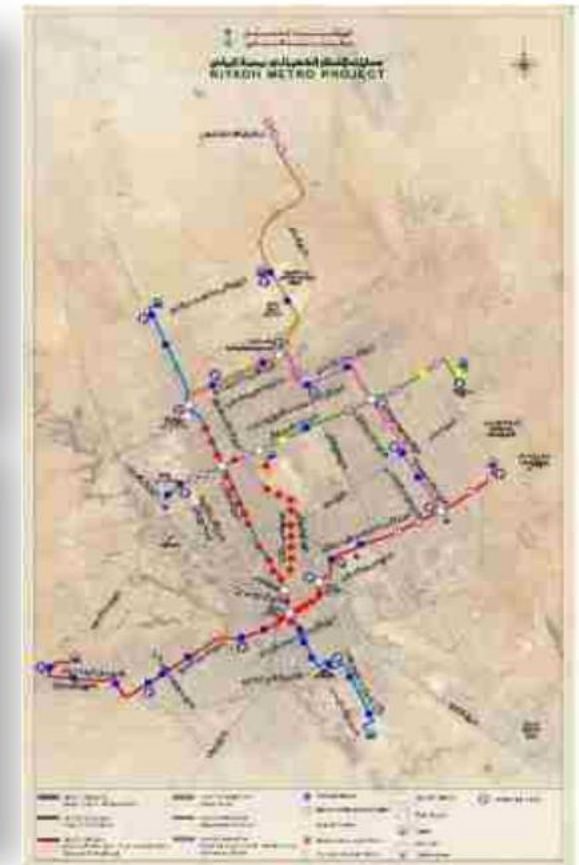
Our team is a world reference in Monitoring and structures testing with many published works and patents Applus+ ha desarrollado su propio software para Instrumentación y Monitorización (SIGTUN).



Pre & Post Construction Dilapidation Survey

Applus has accomplished important goals providing dilapidation services. We have been involved in major projects worldwide like Barcelona Metro in Spain, Doha Metro or Riyadh Metro Project. In this one we have done the dilapidation survey for all the lines accomplished the inspection of more than 1,000 buildings within a 4 months period.

Our team of high skilled engineers combined with our leading technology (SICE) has allowed us to obtain best performance in this kind of projects.



Laboratory Testing

Applus + NORCONTROL performs material tests and operational tests both in laboratories and on site, to satisfy the needs of developers, builders, Public institutions, engineering or architecture companies which need to verify a proper execution of the works regarding the quality of the materials used and its correct placing and operational performance.

Quality control must be considered from the start of the construction process to identify and control the materials and the most critical units.

We have been involved in the development of the HSR in Spain providing services for all the new corridors.

Nowadays we have several laboratories in the Northwest HSR line of Spain.





3. Main railway
references

Main references

DETAILED DESIGN: RAILWAY ACCESS TO THE OUTER HARBOUR OF A CORUÑA IN PUNTA LANGOSTEIRA



Client: Port Authority of A Coruña (Spain)

"MADRID-BARCELONA-FRENCH BORDER" HIGH-SPEED RAILWAY LINE. "LA SAGRERA-NUDO DE LA TRINIDAD".



Client: ADIF (Spain)

HIGH SPEED RAILWAY "MADRID-GALICIA". STRETCH: "PORTOCAMBA – CERDEDELO"



Client: ADIF (Spain)

HIGH SPEED RAILWAY "MADRID-ZARAGOZA-BARCELONA-FRENCH BORDER. STRETCH: LLEIDA-BARCELONA"



Client: GIF (Spain)

CONVENTIONAL RAILWAY. LINE C-4: STRETCH MONTCADA -TARRASA. RENEWAL OF ELECTRICAL INFRASTRUCTURE



Client: DGF (Spain)

HIGH SPEED RAILWAY "MADRID-EXTREMADURA", STRETCH: "TALAYUELA - ARROYO DE SANTA MARÍA"



Client: ADIF (Spain)

Main references

HIGH SPEED RAILWAY "MADRID-ZARAGOZA -BARCELONA-FRENCH BORDER"



Client: GIF (Spain)

CONVENTIONAL RAILWAY. LINE "MEIRAMA - SOGAMA CERCEDA"



Client: Unión Fenosa Generación

GEOTHECNICAL WORKS AND STRUCTURES. HIGH SPEED RAILWAY. LINE: "MADRID – ZARAGOZA"



Client: GIF (Spain)

PLATFORM IN THE NEW RAILWAY ACCESS OF LEVANTE SECTION: "LA ENCINA-ALICANTE".



Client: ADIF (Spain)

HIGH SPEED ATLANTIC CORRIDOR. SAFETY PLATFORM. STRECH: ORDES-QUEIXAS



Client: DGF (Spain)

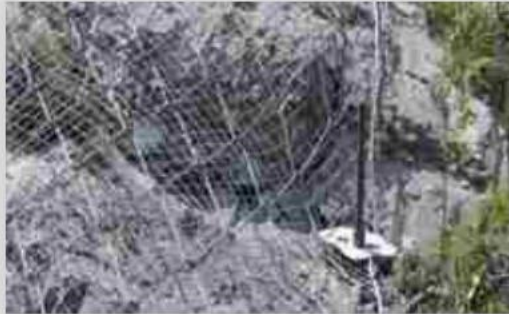
HIGH SPEED ATLANTIC CORRIDOR. SAFETY INSTALLATIONS. STRECH: ORDES-QUEIXAS



Client: GIF (Spain)

Main references

CONDITIONING SLOPES, JET-GROUTING TREATMENT AND ENVIRONMENTAL ACTIONS WITHIN "MADRID-ZARAGOZA-BARCELONA-FRENCH BORDER" HIGH-SPEED RAILWAY



Client: ADIF (Spain)

MEDITERRANEAN HIGH-SPEED CORRIDOR. PLATFORM. "SECTION: VERA-LOS GALLARDOS. ALMERÍA"



Client: ADIF (Spain)

SUPERVISION SERVICES FOR THE O&M OF THE HIGH SPEED RAILWAY "MADRID-LEVANTE MADRID –CASTILLA LA MANCHA"



Client: ADIF (Spain)

ERTMS LEVEL 2 IN THE STRETCH UTRERA – JEREZ DE LA FRONTERA AND GSM-R IN THE STRETCH "SEVILLA – CADIZ"



Client: ADIF (Spain)

NEW RAIL ACCESS NORTH-NORTHWEST STRETCH: "SOTO DEL REAL – SEGOVIA". PLATFORM AND RAIL. PACKAGE 5.



Client: ADIF (Spain)

HIGH SPEED RAILWAY. ATLANTIC CORRIDOR: PORTELA-PORTAS. PLATFORM AND TRACK.



Client: DGF (Spain)

Main references

LINE "ZARAGOZA-HUESCA-CANFRANC"
STRETCH: "ZARAGOZA (MIRAFLORES)-
ZUERA". PLATFORM AND TRACK, ZARAGOZA.



Client: ADIF (Spain)

ELECTRICAL SUBSTATIONS AND
AUTOTRANSFORMERS CENTERS
ASSOCIATES, AUTOMATION AND AIRLINE
CONTACT AND OTHER SYSTEMS FOR HIGH
SPEED LINE CORDOBA – MÁLAGA.



Client: ADIF (Spain)

OVERHEAD CONTACT LINE AND POINT
HEATING SYSTEMS AND OTHER FACILITIES
OF NEW RAIL ACCESS TO THE NORTH AND
NORTHWEST OF SPAIN



Client: ADIF (Spain)

WORKS IN A NEW RAILWAY STATION IN
ALBAIDA. LINE NXÁTIVA - ALCOI
(VALENCIA)



Client: Generalitat Valenciana (Spain)

CONSTRUCTION PROJECT OF URBAN
INTEGRATION IN THE STRECHT ALICANTE-DENIA
OF FGV IN BENIDORM (ALICANTE)



Client: G.T.P. (Spain)

LIGHT RAIL INSTALLATIONS T-1: PINAR DE
CHAMARTÍN-SANCHINARRO-TABLES.



Client: ADIF (Spain)



4. Main metro references

Instrumentation and Monitoring

GEOTECHNICAL INSTRUMENTATION AND MONITORING FOR METRO BROADWAY. VANCOUVER (CANADÁ)



GEOTECHNICAL INSTRUMENTATION AND MONITORING FOR METRO PORTO. YELLOW LINE (PORTUGAL)



4C2 STATION AND 4.1. CUT AND COVER TUNNEL



NORTH LAUNCHING SHAFT 5C2 STATION AND CENTRAL SHAFT. LOT 3 (LINE 5), RIYADH METRO PROJECT



INSTRUMENTATION AND MONITORING OF NORTH LAUNCHING SHAFT 5C2 STATION AND CENTRAL SHAFT. LOT 3 (LINE 5), RIYADH METRO PROJECT



LINE 2 METRO LIMA 8 STATIONS, 9 EMERGENCY SHAFTS AND 7,5 KM OF TUNNEL



Main References

PRE-POST CONSTRUCTION INSPECTION
DOHA METRO PROJECT



PRE AND POST CONSTRUCTION BUILDING
DILAPIDATION SURVEY. RIYADH METRO
PROJECT



DILAPIDATION SURVEY RIYADH METRO
LINE 3- KSA. RIYADH METRO PROJECT



PRE & POST-CONSTRUCTION SURVEY
METRO RIYADH LINES 4,5&6. RIYADH
METRO PROJECT

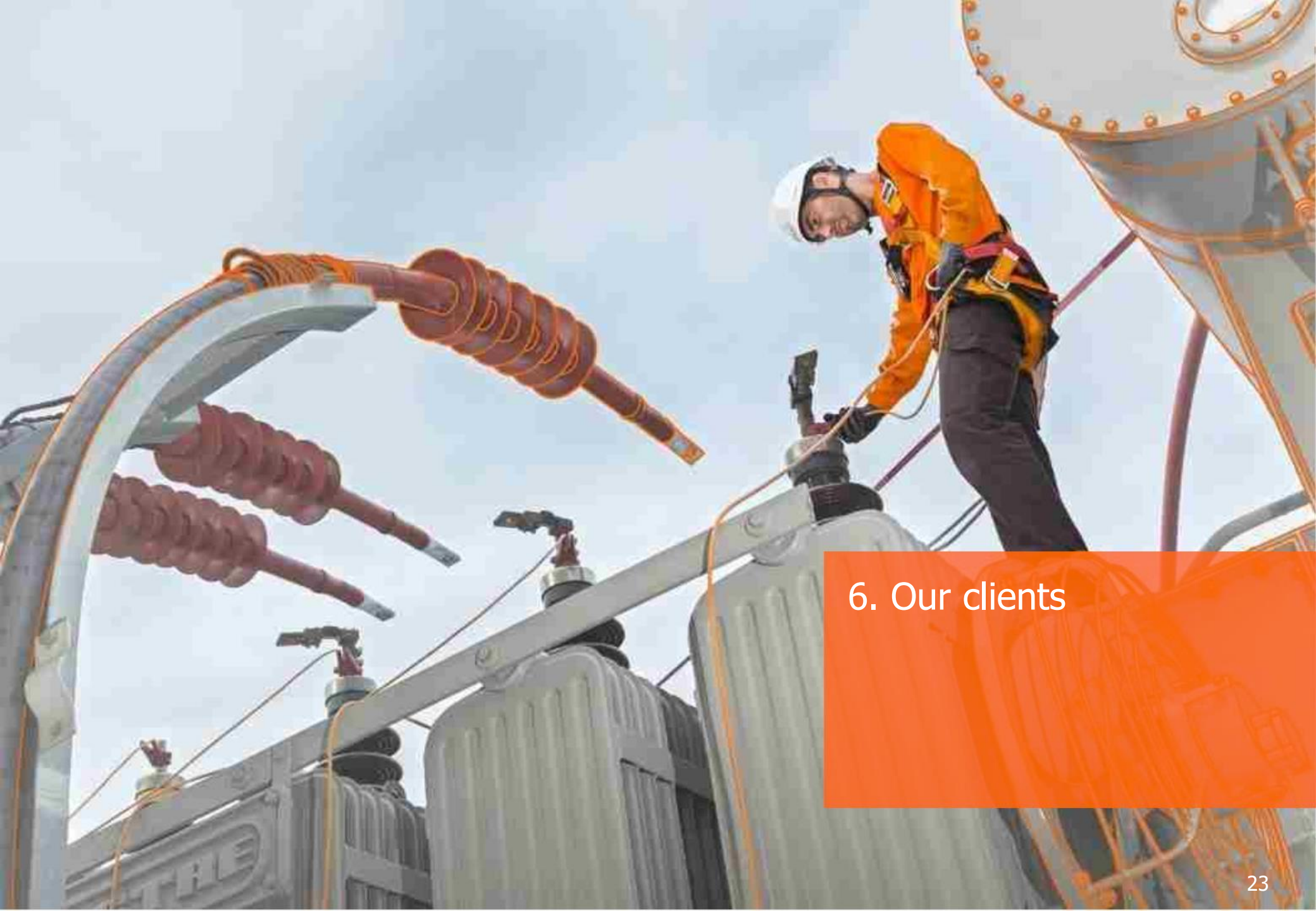


PRE CONSTRUCTION SURVEY OF AL TIJARA
BRIDGE. RIYADH METRO PROJECT



LINE 9 BARCELONA METRO PROJECT
(SPAIN)





6. Our clients

for whom

«working alongside our customers»

We have more than 30 years of extensive experience, providing services to both public and private organizations, which enables us to adopt quick and flexible solutions for different markets and sectors both national and international



Main customers ranking

Applus⁺

Together
beyond
standards