广州地铁
Guangzhou Metro

Guangzhou Metro Official
WeChat Account

Guangzhou Metro
Official App

WWW.GZMTR.COM

GUANGZHOU METRO

企业概况 OVERVIEW

广州地铁集团有限公司成立于1992年，是广州市政府全资大型国有企业。成立34年来，总资产超过1072亿美元，员工超3.4万人，运营的大湾区多制式轨道交通线网里程1370.9公里(地铁779.9公里、城际铁路564.7公里、有轨电车26.3公里)。广州地铁始终以“提速广州、主导湾区、引领行业”为使命，充分发挥广州作为省会城市、大湾区核心引擎城市的辐射带动作用，业务实现从轨道交通前期规划设计，到工程投资建设与咨询，到运营维保全过程综合解决方案，全力推动“轨道上的大湾区”建设，努力构建结构合理、换乘高效、共建共享的世界级轨道交通。

Established in 1992, Guangzhou Metro Group is a large state-owned enterprise wholly owned by the Guangzhou Municipal Government.The company has grown significantly over its 34-year history, with total assets exceeding $107.2 billion and a workforce over 34,000 employees. The Group currently operates an extensive integrated rail transit network of 1370.9 km within the Guangdong–Hong Kong–Macao Greater Bay Area (GBA), including 779.9 km of metro, 564.7 km intercity railways and 26.3 km of tram. Guided by its mission of “Accelerating Guangzhou, Leading the Greater Bay Area, and Shaping the Industry”, Guangzhou Metro fully leverages the city’s role as the provincial capital and a core hub of the Greater Bay Area. Its business spans the entire rail transit lifecycle, from early-stage planning and design, to investment, construction, consulting, operation, and maintenance, offering comprehensive integrated solutions. The company is committed to advancing the development of a “Greater Bay Area on Rails”, striving to build a world-class rail transit system characterized by rational structure, efficient transfers, and shared development.



发展里程碑 Development History

2026.1
线网安全运营突破10000天
Network sate operation reached 10,000 days

2024.12
运营线网里程突破1000公里
Total operational network mileage exceeded 1,000 kilometers

2020.10
承接城际铁路运营
Took on intercity railway operation

2015.6
改制成立广州地铁集团
Reorganized and established as Guangzhou Metro Group

1997.6
一号线首通段投入运营
The initial stage of Guangzhou Metro Line 1 has been put into operation.

1992.12
广州市地下铁道总公司成立
Established as Guangzhou Mass Transit Railway Corporation

科技创新成果
TECHNOLOGICAL INNOVATIONS

936 授权专利 patents granted

- **200** 发明专利 invention patents
- **726** 实用新型专利 utility model patents
- **10** 外观设计专利 design patents

获得的荣誉 Awards and Honors

- **广州地铁二号线荣获国家科技进步二等奖**
  Received the Second Prize of the National Science and Tech-nology Progress Award (Guangzhou Metro Line 2)



- **2024年初，获中共中央、国务院组织的首届“国家卓越工程师团队”奖。**
  Awarded the first batch of “National Outstanding Engineer Team” by the Central Committee of the Communist Party of China and the State Council



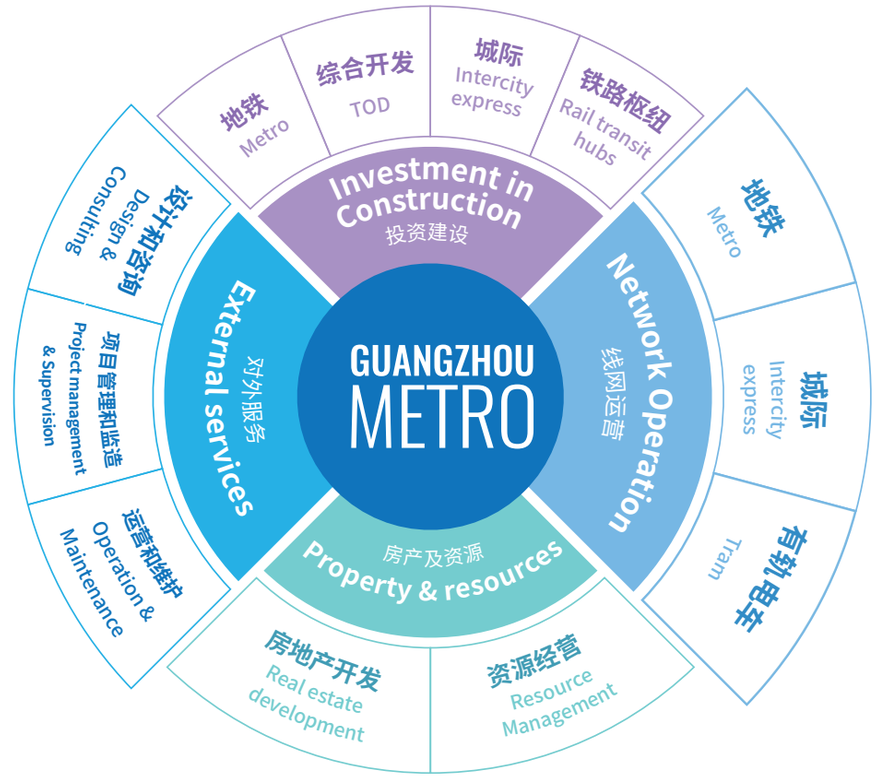
- **广州地铁先后荣获过国家省市科技奖励累计343项。其中国家级奖项4项，省部级奖项72项，国际级学会/协会奖项5项，国家级学会/协会奖项120项，省级学会/协会奖项142项。**
  A total of 343 science and technology awards at national, provincial and municipal levels, including 4 national-level awards, 72 provincial and ministerial-level awards, 5 interna-tional-level societies/associations awards，120 national-association and national-society awards, 142 provincial-level awards.

业务领域 BUSINESS SCOPE

四大业务板块
Four Business Segments

广州地铁集团主要业务可分为四大板块：投资建设、线网运营、房产及资源和对外服务。

GMG focuses its core business on four key sectors: Investment & Construction, Operation, Property & Resources Development, Services for Other Clients.



01 投资建设 INVESTMENT IN CONSTRUCTION

投资建设板块 Completed Investment

累计完成1400亿美元项目建设总投资
Accumulated investment reached **$140** billion

地铁 Metro
城际 Intercity express
枢纽 Rail transit hubs
综合开发 TOD

已完成建设线路 Previous Projects

累计建成28条多制式轨道交通线路
28 lines of pan-rail transit

28 lines

19 地铁19条 Metro lines
6 城际6条 Intercity lines
3 有轨3条 Tram lines

正在建设项目 On-going Projects

14 lines **335.5** km

正在建设14条335.5公里轨道交通线路
14 pan-rail transit lines(**335.5km**)

地铁8条100.8 km
8 metro lines(100.8 km)
城际5条219.1 km
5 intercity lines (219.1 km)
高铁1条15.6 km
1 high-speed railway line (15.6 km)

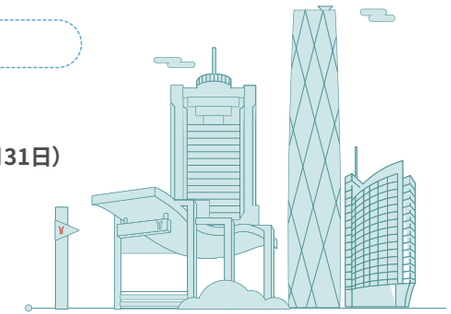
02 线网运营 NETWORK OPERATION

运营指标 Key Facts



3.4 billion
2025年总客运量：34亿人次
Total ridership in 2025: 3.4 billion

14.093 million
历史最高日客运量1409.3万人次（2025年12月31日）
Highest daily ridership:
14.093 million (New Year's Eve 2025)



NO.1
安全指标连续多年全球排名第一
First in global safety performance for many consecutive years

75%
占广州全市公共交通出行总量75%
Share of public transport in Guangzhou: 75%



4 lines
中国客流强度前十的地铁线路中有4条由广州地铁运营（1、2、3、8号线）
Operating four of top ten busiest metro lines in China

03 房产及资源板块 PROPERTY & RESOURCES MANAGEMENT

广州地铁在TOD开发中始终保持领先地位，创造了一个又一个优质TOD生活样本。

GMG constantly keeps the lead in TOD development and has crafted a sample of high-quality life.

房地产开发 Property Development

5.47 million
土地整理项目面积约547万平方米
5.47 million m^2 of land consolidation projects

10.17 million
开发项目建筑总面积1017万平方米
10.17 million m^2 total GFA of development projects

资源经营 Resources Management

1.46 million
可经营物业资源约146万平方米
1.46 million m^2 of property management resources

140 thousand
经营广告媒体超14万块
140 thousand advertising boards

04 对外服务 EXTERNAL SERVICES



规划设计与咨询 Planning, Design and Consultancy

项目管理与系统集成 Program Management And System Integration

运营与维护 Operation and Maintenance(O&M)

规划设计与咨询
PLANNING DESIGN AND CONSULTANCY

1.1 项目前期规划研究
Pre-project Planning & Research

1.1.1 线网及线路规划
Rail Network & Route Planning



马来西亚森林城市大运量公交系统研究

马来西亚森林城市位于新马特区，占地20平方公里，规划容纳数十万人。本项目在既定用地规划（约7800万㎡）和三期发展框架下，对大运量公交系统开展制式比选（无轨/有轨）、经济与运维成本比较、线站位优化、车辆段及分期实施研究，内容包括线站位分析、初/近/远期客流估算、系统运能评估及成本测算，最终形成最优骨干交通方案。

High-Capacity Transit System Planning Study for Forest City, Malaysia

Forest City, Malaysia, is located in the Iskandar Special Economic Zone, covering approximately 20 km² and planned to accommodate several hundred thousand residents. Based on the approved land use plan (approximately 78 million m² GFA) and a three-phase development strategy, this study evaluated alternative high-capacity transit modes, including rubber-tyred and rail-based systems, through comprehensive comparisons of lifecycle costs, operational performance, alignment optimisation, depot planning and phased implementation strategies. The study covered corridor alignment optimisation, station location planning, short-, medium- and long-term ridership forecasting, system capacity assessment and lifecycle cost analysis, ultimately recommending the optimum backbone transit solution for the development.

1.1.2 预可行性研究
Pre-Feasibility Study (PFS)

刚果金沙萨城市铁路更新项目一期工程（中央站~机场站）前期研究项目

金沙萨城市铁路一期工程（中央站~机场站）全长约25km，设6站1段，为全长270km城市铁路更新项目的先行段。项目将既有窄轨改造为双线标准轨，新购8列内燃动车组（最高时速100km/h），预留电气化条件，同步建设3座市政桥梁。预可研阶段重点包括：技术标准比选与确定、关键方案稳定、投资估算编制及更新版技术建议书编制。前期工作中，协助甲方开展业主技术交流与谈判，为项目正式启动提供全过程支持。

Pre-Feasibility Study for Phase I of the Kinshasa Urban Railway Renewal Project (Central Station–Airport Station), Democratic Republic of the Congo

Phase I of the Kinshasa Urban Railway Renewal Project extends approximately 25 km with six stations and one depot, serving as the first implementation phase of the planned 270 km urban railway network. The project upgrades the existing narrow-gauge railway to a double-track standard-gauge railway, procures eight diesel multiple units (DMUs) with a maximum operating speed of 100 km/h, reserves provisions for future electrification, and includes the construction of three municipal bridges. During the PFS stage, Guangzhou Metro undertook technical standard evaluation, optimisation of key engineering solutions, preparation of preliminary capital cost estimates, and development of the updated Project Technical Proposal. The team also provided technical support for client communications and negotiations with relevant stakeholders, facilitating project approval and subsequent implementation.



1.1.3 可行性研究
Feasibility Study (FS)



胡志明市城市轨道交通2号线二期可行性研究咨询项目

该项目是连接滨城中央商务区（CBD）与守添新城的重要轨道交通走廊，也是支撑守添国际金融中心建设的重要基础设施项目。广州地铁牵头联合体开展项目可行性研究工作，重点围绕跨河通道方案、线路及车站布局、换乘体系衔接、客流需求预测、TOD开发潜力、运营组织模式及投融资方案等内容开展系统研究。项目充分考虑守添新城开发时序、中心城区交通需求及轨道网络协同发展要求，综合评估项目建设的技术可行性、经济合理性及社会效益，为项目立项审批、投资决策及后续建设推进提供技术依据。

Feasibility Study for Ho Chi Minh City Urban Rail Transit Line 2 Phase II, Vietnam

As the lead member of the consortium, Guangzhou Metro carried out the Feasibility Study for Ho Chi Minh City Metro Line 2 Phase II, a strategic rail corridor connecting the Ben Thanh CBD with the Thu Thiem New Urban Area and supporting the development of the Thu Thiem International Financial Centre. The study covered cross-river crossing options, alignment and station planning, interchange integration, ridership forecasting, TOD development potential, operational strategy and investment and financing options. Comprehensive technical, economic and social assessments were undertaken to support project approval, investment decision-making and subsequent project implementation.



胡志明市城市轨道交通4号线（同盛-协福）可行性研究咨询项目

在胡志明市轨道交通4号线可行性研究项目中，广州地铁全面负责全线（全长约45公里，纵贯南北核心区，串联多个行政中心及航空枢纽）的技术统筹工作。研究重点聚焦于线站位方案的多维度比选与稳定、客流需求预测、系统制式论证、投资估算及经济评价、重大风险识别等内容，并充分借鉴2号线一期工程成熟经验，高效推进基础技术工作。同时，向业主方系统推介广州地铁在规划、技术、运营维护及资源整合方面的先进实践，为项目立项决策及后续实施奠定了坚实的技术依据与合作基础。

Feasibility Study for Ho Chi Minh City Urban Rail Transit Line 4, Vietnam

Guangzhou Metro was responsible for overall technical coordination of the approximately 43 km metro corridor connecting major administrative centres and aviation hubs across Ho Chi Minh City. The study focused on alignment and station option optimisation, ridership forecasting, system technology assessment, capital cost estimation, economic evaluation and major risk assessment. Drawing on the successful experience of Metro Line 2, Guangzhou Metro also introduced best practices in planning, engineering, operations and asset management, providing a robust technical foundation for project approval and subsequent implementation.

1.1.4 段场综合规划
Depot Comprehensive Planning

开展TOD项目的开发前期策划、总平面布局、方案设计、竖向设计、交通组织、一体化预留工程、管线综合方案设计；协调红线内外衔接，落实市政配套条件；编制场地详细规划图纸及说明，支持土地出让或建设条件确认。

Provide integrated planning services for TOD developments, including pre-development planning, master planning, conceptual design, grading design, traffic circulation planning, integrated reserved works planning and utility coordination. Coordinate interfaces within and beyond the site boundary to secure supporting municipal infrastructure. Prepare detailed site planning drawings and technical reports to support land disposal, development approval and planning consent.



广州白云(棠溪)站综合交通枢纽一体化综合体项目

白云（棠溪）站综合交通枢纽是亚洲最大的TOD大型综合交通枢纽之一，总投资约440亿元，占地面积65.69公顷，站场规模11台24线，承担“高铁进城”功能，接入京广高铁、广深城际等多条线路，枢纽同步引入地铁八号线、十二号线、芳白城际及佛山六号线等多条城市轨道交通线路。项目首次在铁路站房上方大规模开发物业，实现“站城融合”。广州地铁负责枢纽的规划方案、可研、初设、施工图到施工配合，以及上盖物业开发的全阶段工作，并协同国铁工程实现了同步规划、同步设计、同步报批、同步建设，是国内首个实现路地协同、枢纽与基础设施、上盖物业开发一体化建设的大型综合交通枢纽。

Integrated Planning and Design for Guangzhou Baiyun (Tangxi) Integrated Transport Hub

Guangzhou Baiyun (Tangxi) Integrated Transport Hub is one of Asia's largest TOD developments, with a total investment of approximately RMB 44 billion and a site area of 65.69 hectares. The hub comprises 11 platforms and 24 railway tracks, integrating the Beijing–Guangzhou High-Speed Railway, Guangzhou–Shenzhen Intercity Railway and multiple urban rail transit lines. As China's first large-scale station-city integrated development constructed above an operational railway station, the project pioneered the "Station-City Integration" concept. Guangzhou Metro provided full lifecycle consultancy and design services, covering planning, feasibility study, Basic Design, Detailed Engineering Design and construction support, while coordinating closely with China State Railway to achieve integrated planning, design, approval and construction.

1.1.5 商业规划
Commercial Planning

开展轨道交通广告媒体、商业空间等商业资源前期策划工作；统筹广告与商业点位，开展经营价值评估、点位排布规划、配套工程预埋预留；制定广告及商业资源的设计、建设规范，协助点位布置图纸、技术需求的审核确认。

Undertake preliminary planning for rail transit commercial assets, including advertising media and commercial spaces.Conduct commercial value assessments and optimize the placement and layout of advertising and commercial spaces, including provisions for embedded and reserved works. Establish design and construction standards for advertising and commercial assets, and assist in the review and validation of layout drawings and technical requirements.

PRE-PROJECT
PLANNING & RESEARCH

1.2全阶段工程设计
1.2 Overall Engineering Design

1.2.1 概念设计
Conceptual Design



阿联酋阿布扎比智轨技术服务项目

阿布扎比智轨项目含两期：一期为亚斯岛展示环线（约15km），二期为扎伊德港至机场骨干线（约41km）。广州地铁负责一期概念设计、二期前期研究，包括技术标准比选（当地标准与中国标准）、主要技术方案稳定（可研深度）、投资估算编制及技术建议书编制，并在勘察设计启动前协助甲方开展业主技术交流与谈判，提供全过程技术支持。

Concept Design and Technical Advisory Services for the Abu Dhabi Smart Rail Project, UAE

The Abu Dhabi Smart Rail Project comprises two phases: Phase I includes the approximately 15 km Yas Island Demonstration Line, while Phase II consists of the approximately 41 km strategic corridor connecting Zayed Port and Abu Dhabi International Airport. Guangzhou Metro delivered the Concept Design for Phase I and preliminary studies for Phase II, including technical standards assessment (local and Chinese standards), optimisation of key engineering solutions to Feasibility Study level, preliminary capital cost estimation and preparation of the Project Technical Proposal. The team also provided technical advisory services during client engagement and stakeholder negotiations prior to commencement of the detailed design stage, supporting informed decision-making throughout the project development process.

1.2.2 初步设计/前端设计
Preliminary Design/Front End Engineering Design (FEED)



胡志明市地铁6号线可行性研究及前端工程设计咨询项目

胡志明市6号线一期全长约22.9公里，连接新山一国际机场与富友片区，是贯穿城市西北—东南方向的重要轨道交通线路，并承担机场及沿线重点区域的客流联系功能。广州地铁牵头联合体承担项目可行性研究及FEED设计，通过对线路功能、建设条件、客流需求及工程方案进行系统分析，重点开展线路及站点方案优化、工程总体布置、系统制式研究、建设规模及投资估算，并统筹解决各专业之间的技术接口问题。同时结合沿线城市发展及TOD开发条件，对项目建设实施及综合效益进行研究，充分发挥广州地铁在轨道交通规划、设计、建设和运营领域的综合经验，为项目后续投资决策、招标采购及工程建设提供完整的技术基础。

Feasibility Study and FEED Design for Ho Chi Minh City Metro Line 6, Vietnam

Phase 1 of Ho Chi Minh City Metro Line 6, approximately 22.9 km long, connects Tan Son Nhat International Airport with the Phu Huu area, forming a key northwest–southeast transit corridor serving the airport and major development areas along the route. A Guangzhou Metro-led consortium undertakes the feasibility study and FEED design, covering route and station optimization, overall system configuration, technology selection, project scale, cost estimation, and multidisciplinary interface coordination. The study also considers project implementation and overall benefits in relation to urban development and TOD potential. Drawing on Guangzhou Metro's integrated expertise in rail transit planning, design, construction, and operations, the work provides a comprehensive technical basis for subsequent investment decisions, procurement, and project implementation.

1.2.2 初步设计/前端设计 Preliminary Design/Front End Engineering Design (FEED)



越南胡志明市城市轨道交通2号线一期FEED设计项目

在胡志明市地铁2号线一期项目中，广州地铁设计院作为设计总体牵头单位，核心工作围绕前端工程设计（FEED）展开：引入GOA4无人驾驶、智慧运维、移动支付等全球最新技术，完成了FEED阶段设计并形成最终批复稿。在此基础上，同步推进可研修编（优化方案并获批复）、14个专题报告（涵盖车辆段、换乘车站、AFC、供电系统、TOD等），以及施工招标文件编制（结合国际路演与全球询价）。同时，构建了以欧洲标准（EN）为核心、越南标准（TCVN）为基础、中国标准（GB）为补充的600余项全过程技术标准体系，新增引入SCADA、PSD、FAS、消防、自动扶梯等5项中国标准，并完成中、欧、日、越四大标准对比及中国与欧美标准对标专项研究，为项目及越南未来轨道交通标准化建设提供技术支撑。

FEED for Ho Chi Minh City Metro Line 2 Phase I, Vietnam

As the lead design consultant, Guangzhou Metro delivered the Front-End Engineering Design (FEED) for Ho Chi Minh City Metro Line 2 Phase I, introducing advanced technologies including GoA4 unattended train operation (UTO), intelligent asset management and mobile payment systems. In parallel with FEED, the team updated the Feasibility Study, prepared 14 multidisciplinary technical studies covering depots, interchange stations, AFC, traction power supply and TOD, and developed tender documentation through international market engagement and global supplier consultation. A comprehensive technical standards framework comprising more than 600 standards was established, integrating EN, TCVN and GB standards, together with comparative studies of European, Chinese, Japanese and Vietnamese standards to support both project delivery and Vietnam's future metro standardisation programme.



胡志明市城市轨道交通2号线二期FEED设计咨询项目

广州地铁牵头联合体开展项目FEED设计工作。设计重点围绕跨越西贡河关键工程、滨城及守添核心区地下车站布局、与既有及规划轨道线路换乘衔接、系统能力匹配及运营需求展开，统筹研究线路、结构、轨道、供电、通信、信号及车辆基地等专业总体技术方案，协调各系统接口关系并确定关键技术参数。项目充分结合高密度城市中心区建设条件及未来客流增长需求，形成兼顾建设可实施性与运营效率的总体技术方案，为项目后续推进及建设实施奠定基础。

FEED Consultancy for Ho Chi Minh City Metro Line 2 Phase II, Vietnam

Guangzhou Metro led the FEED consultancy for Metro Line 2 Phase II, focusing on the Saigon River crossing, underground station planning within Ben Thanh and Thu Thiem, integration with existing and planned rail networks, system capacity planning and operational requirements. The multidisciplinary design covered alignment, civil works, track, traction power, communications, signalling and depot planning, while coordinating system interfaces and defining key technical parameters to achieve an optimal balance between constructability and operational efficiency.



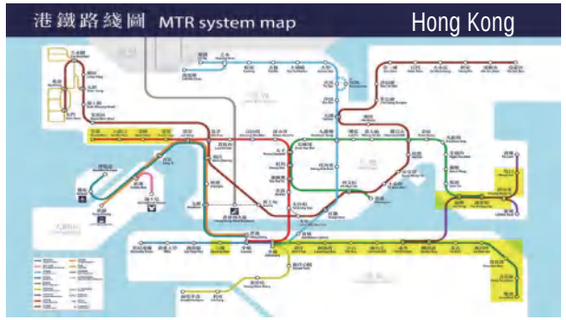
越南胡志明市城市轨道交通4号线FEED设计项目

胡志明市4号线全长约45公里，纵贯南北核心区，连接多个行政中心及航空枢纽。广州地铁牵头联合体开展基础设计工作以线站位稳定为前提，重点完成线路、车站、结构、机电、车辆段等专业深化设计及接口协调，编制总体技术规格书。项目充分借鉴2号线一期工程经验，统筹推进设计标准统一，并向业主推介广州地铁在规划、技术、运维及资源整合方面的成熟经验，为后续招标与施工图设计奠定基础。

FEED for Ho Chi Minh City Metro Line 4, Vietnam

Guangzhou Metro led the Basic Design for the approximately 45 km Metro Line 4 corridor, undertaking multidisciplinary engineering design covering alignment, stations, structures, MEP systems and depot facilities. The project also included interface management, preparation of the Employer's Technical Specifications and standardisation of engineering criteria. Drawing upon the successful delivery of Metro Line 2, Guangzhou Metro introduced proven expertise in planning, engineering, operations and asset management, providing a strong technical foundation for tendering and Detailed Engineering Design (DED).

1.2.3 施工图设计/详细工程设计
Construction Drawing Design/Detailed Engineering Design (DED)



港铁荃湾线、港岛线、将军澳线供电系统更新工程

本项目工作内容主要包括荃湾线（部分）、港岛线（部分）和将军澳线（含机场线低压），共计三条地铁线的部分车站及附属建筑中高低压供电系统更新改造的设计、供货、安装、测试、维护等工作。本次改造将会对既有高压及低压供配电系统在原址上进行更新升级，预计工期为8年（2024年~2032年）。广州地铁承担低压配电系统更新的设计任务，设计内容包括现场勘察、改造步骤设计、临时柜及永久柜的一二次系统设计、平面图设计等工作。

Power Supply System Upgrade for MTR Tsuen Wan Line, Island Line and Tseung Kwan O Line, Hong Kong

Guangzhou Metro is responsible for the Detailed Engineering Design of the low-voltage power distribution system upgrade for selected stations and associated facilities on the Tsuen Wan Line, Island Line and Tseung Kwan O Line (including the Airport Express low-voltage system). The project covers site investigation, staging and construction sequencing, primary and secondary electrical design for temporary and permanent switchboards, cable routing, layout drawings and construction support. The eight-year programme (2024–2032) upgrades the existing electrical infrastructure while maintaining uninterrupted railway operations.



AIFA(国际机场)–Pachuca（54 km)帕丘卡车辆段设计

对于墨西哥帕丘卡车辆段项目，我院作为车辆厂的设计分包单位，核心工作包括施工图阶段车辆段工艺设计（工艺库房布置、工艺设备选型、工艺提资、运维报告编写、图纸审查），土建及机电专业图纸审查工作。该库房工艺设计引入均衡修、换检修等设计理念，在有限的库房空间下，实现了列车高级修的需要。图纸审查综合考虑欧标、美标及国内标准及经验，为业主提供多标准技术服务。同时，推广广州地铁在车辆段设计方面的技术及经验。确保方案经济、合理、符合地方及国际标准、保质保量并避免变更。

Pachuca Depot Detailed Engineering Design, AIFA–Pachuca Railway (54 km), Mexico

Guangzhou Metro acted as the depot design subcontractor, delivering Detailed Engineering Design for depot workshop systems, including maintenance workshop layout, maintenance equipment selection, engineering interface coordination, O&M documentation and multidisciplinary drawing reviews. The depot design introduced advanced maintenance concepts such as balanced maintenance and exchange maintenance, enabling major train overhauls within a compact depot footprint. The design was developed in compliance with European, American and local standards, providing the client with an optimised, buildable and internationally compliant engineering solution while demonstrating Guangzhou Metro's extensive expertise in depot planning and design.

1.3 工程设计咨询 Engineering Design Consultancy

1.3.1 规划咨询
Planning Consultancy



马来西亚砂拉越古晋城市运输系统运维规划咨询顾问

砂拉越州政府通过其全资子公司砂拉越经济发展公司（SEDC）及其全资子公司砂拉越地铁有限公司(SMSB及/或业主)，计划设计、建造并运营古晋城市交通系统（KUTS）项目。该项目旨在通过引入自主快速交通系统（ART），为大古晋地区提供绿色高效的公共交通服务，将古晋打造成充满活力且竞争力强的城市。ART将成为古晋市公共道路运输的骨干网络，并通过接驳巴士提供首末公里的无缝衔接服务。项目涉及自主快速交通(ART)和氢能接驳巴士，接驳巴士盖 ART 车站半径 3公里范围内的服务区域。本次服务目标为确保第一阶段项目在运营准备和运营维护方面安全且高效。本项目协助审查砂拉越地铁业主和承包商编制的与 O&M（运营维护）技术相关的规划性文件，并提供建议和推荐相关步骤和流程，以确保文件符合监管机构的要求，并确保 ART 和 H2Bus的运营筹备工作，特别是涉及潜在风险、安全和网络安全、效率、客户服务、可操作性和可维护性。同时，推广广州地铁在规划、技术、管理、运维方面的丰富经验。

Operations and Maintenance Planning Consultancy for the Kuching Urban Transportation System (KUTS), Sarawak, Malaysia

Commissioned by the Sarawak Government through Sarawak Metro Sdn Bhd (SMSB), Guangzhou Metro provided planning consultancy for the operational readiness and maintenance planning of the Kuching Urban Transportation System (KUTS), an Autonomous Rapid Transit (ART) network serving Greater Kuching. The project integrates ART with hydrogen-powered feeder buses to establish a seamless first- and last-mile public transport system. Guangzhou Metro reviewed operational planning documents prepared by the client and contractors, assessed regulatory compliance, and provided recommendations on operational readiness, maintenance planning, safety, cybersecurity, customer service, operability and maintainability. The consultancy also supported the development of O&M procedures and implementation strategies, drawing upon Guangzhou Metro's extensive experience in rail planning, engineering, operations and asset management.

1.3.2 土建设计咨询
Civil Construction Design Consultancy



港珠澳大桥主体工程设计及施工咨询项目

港珠澳大桥岛隧工程以世界首创的桥-岛-隧集群方案为特色，同时拥有世界最长的跨海大桥段和海底沉管隧道。广州地铁承担该项目全阶段的设计及施工咨询，代表业主审查各阶段方案，重点负责沉管预制厂、人工岛结构、地基处理及岛上建筑，并与国外公司联合开展沉管隧道咨询工作。针对海上建岛难题，广州地铁协助设计方锁定钢圆筒围护加砂石堆载预压方案，提出复合地基概念及PHC桩贯入度与标高双控指标，方案被采纳后有效节省了工期与造价。针对管节防水问题，参与提出半刚性管节方案，创新采用管节间预应力永久保留，通过预应力产生的摩擦力与剪力键共同参与抗剪的机制，该技术已成为沉管隧道领域的里程碑式突破。

Hong Kong–Zhuhai–Macao Bridge Main Works – Design and Construction Consultancy

Guangzhou Metro provided full-lifecycle design and construction consultancy for the Hong Kong–Zhuhai–Macao Bridge, representing the client in the technical review of major engineering solutions throughout the project. Services covered the immersed tube casting yard, artificial islands, ground improvement works and island structures, together with technical consultancy for the immersed tunnel. The team introduced innovative engineering solutions including steel cylinder cofferdams with surcharge preloading, composite foundation systems, dual-control criteria for PHC piles, and a permanent prestressed semi-rigid immersed tube joint system, significantly improving constructability, reducing programme duration and lowering construction costs.

1.3.2 土建设计咨询 Civil Construction Design Consultancy



塞尔维亚贝尔格莱德地铁1号线一期工程主线段技术咨询项目

塞尔维亚贝尔格莱德地铁1号线一期工程是塞尔维亚第一条、巴尔干中西部标杆全自动无人驾驶地铁，也是该国半个世纪以来最重要的国家级基建、中东欧“一带一路”旗舰工程，兼具城市民生、国家经济、区域地缘、中欧合作四重核心价值。主线工程线路全长15.4km，新建15个车站、10个竖井。本项目我方在遵守塞尔维亚当地、业主及总承包方的相关要求，协助业主和总承包方对勘察设计单位按阶段、按时、保质、保量地组织完成勘察、测量、临建设计（IDP 及 PZI 阶段）、建筑许可设计（PGD 阶段）、施工详图设计（PZI 阶段）的成果审查工作，配合业主和总承包方严格管控勘测设计技术成果质量，确保技术安全、可靠、经济、合理，为塞尔维亚地铁建设贡献广州地铁智慧。

Belgrade Metro Line 1 Project, Serbia

The first metro line in Serbia. Our engineer team provides design review, technical consultancy and multidisciplinary interface coordination during the PGD and PZI stages, together with technical support during construction. The team facilitates coordination among the Engineer, designers and construction teams to address design and interface issues throughout project delivery.



澳门轻轨东线项目设计咨询服务项目

澳门轻轨东线工程线路全长约7.43km，北起凼仔码头站，沿东北方向延伸至ES1站，，共设6座车站。广州地铁设计院作为PM管理单位的重要设计咨询方，在项目全阶段提供设计咨询及技术援助服务，重点针对国际咨询公司、欧标、美标及澳门本地规范的多标准体系，提出切实可行的技术协调与实施方案，并督促设计顾问单位将方案有效落地，确保设计成果满足多标准兼容要求及工程实施需要。

Macao Light Rapid Transit East Line – Design Consultancy Services

Guangzhou Metro provided multidisciplinary design consultancy and technical assurance throughout the project lifecycle. The consultancy focused on coordinating compliance with international engineering practices, European Standards, American Standards and Macau's local regulations, ensuring technical consistency across multiple standards and supporting successful project delivery.

1.3 工程设计咨询
Engineering Design Consultancy

1.3.2 土建设计咨询
Civil Construction Design Consultancy



香港北环线土建工程设计优化与抗震设计咨询

北环线主线是香港《铁路发展策略2014》规划的七条铁路项目之一，包含东铁线古洞站新建工程及古洞站至锦上路站约12公里的连接铁路，是北部都会区发展的关键交通基础设施。广州地铁承担该项目结构及隧道抗震设计验证与岩土工程设计优化审查工作，代表业主港铁公司对勘察、结构工程、岩土工程、隧道工程及附属工程的全套图纸进行详细审查，重点针对抗震设计标准适用性、地震作用下的结构响应与安全性、岩土工程设计的经济性与可建性等方面开展系统审核，并与香港路政署相关规范体系对接，提出优化建议及审查报告。

Hong Kong Northern Link – Civil Engineering Design Optimisation and Seismic Design Consultancy

Commissioned by MTR Corporation, Guangzhou Metro undertook independent technical reviews of structural, tunnel and geotechnical designs for the Northern Link. The consultancy covered seismic design verification, geotechnical optimisation, structural safety assessment, constructability review and compliance with Hong Kong Highways Department requirements, providing optimisation recommendations and technical assurance to support the project's successful implementation.

1.3.3 机电设计咨询
Electrical & Mechanical(E&M) Design Consultancy



波哥大地铁二号线机电顾问服务项目

波哥大地铁 2 号线是哥伦比亚首都第二条大运量地铁干线，为波哥大轨道交通网络核心二期工程，承接在建地铁 1 号线，打通城市西北片区与市中心快速通道，由波哥大地铁公司（EMB）作为业主单位统筹建设、特许运营与维护，波哥大首都区、哥伦比亚国家政府联合担保出资。线路总长15.5km，共11座车站。本项目采用欧洲标准结合本地标准为主，为总承包中交港湾提供机电系统的投标咨询服务，包括编制投标方案报告、机电对土建要求、工程量表等相关工作，专业涵盖供电系统、通信系统、信号系统、综合监控、站台门、AFC、车站MEP、车辆段工艺设备等，并包含测算光伏系统全生命周期成本等相关研究工作。

E&M Technical Consultancy for Bogotá Metro Line 2, Colombia

Bogotá Metro Line 2 is the second heavy metro line in Colombia's capital and a key factor of the city's rail transit network expansion. GuangzhouMetro provided E&M technical consultancy to the EPC contractor during the tender stage, based on European Standards together with local Colombian requirements. The consultancy covered preparation of technical proposals, E&M interface requirements for civil works, Bills of Quantities(BoQ) and multi disciplinary technical studies covering power system, communication system, signalling system, Integrated Supervisory Control System (ISCS),platform screen doors (PSD), AFC, station MEP systems and depot maintenance equipment. The scope also included lifecycle cost assessment of photovoltaic (PV) systems, providing comprehensive technical support for the international tender.

1.3.4 施工图审查
Detailed Design Drawing Review

作为第三方对施工图设计成果进行独立审查；检查各专业设计图纸的完整性、一致性及深度；出具正式的施工图审查意见报告；对设计单位的修改回复进行复核确认，出具审查合格书。

Provide independent third-party reviews of Detailed Engineering Design deliverables. Verify the completeness, consistency, technical adequacy and code compliance of multidisciplinary design documents. Issue formal Independent Design Review Reports, review designers' responses to comments, and certify compliance following completion of the review process.

项目管理与系统集成
PROGRAM MANAGEMENT & SYSTEM INTEGRATION

2.1全过程项目管理
Overall Project Management

2.1.1 项目与施工管理
Project and Construction Management



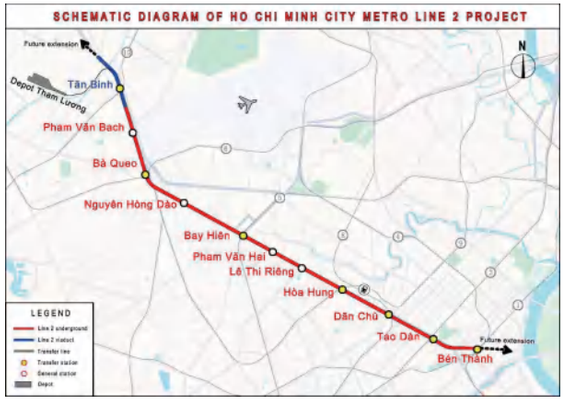
澳门轻轨东线设计施工总承包项目管理及技术协助服务

提供全过程项目管理，包含计划执行、总进度协调管控、设计文件审查、合同及采购专业咨询、招标文件编制与评审、项目管理计划编制、投资质量安全管控、监理配合技术支持以及各承包商总体协调。

Macau Light Rail East Line Design and Build Project Management and Technical Assistance Services

We provide full-life-cycle project management, including plan implementation, overall schedule coordination and management, review of design documents, professional advice on contracts and procurement, preparation and evaluation of bidding documents, formulation of project management plans, cost, quality and safety control, technical support in coordination with supervisors, and overall coordination of contractors.

2.1.2 项目管理咨询
Project Management Consultancy



越南胡志明市城市轨道交通 2 号线 PICC 项目 - 胡志明市城铁委员会（MAUR）

胡志明市城市轨道交通2号线建设旨在补充大运量公共交通方式，满足市民往返市中心与西北走廊之间的出行需求，并为后续其他城市轨道交通线路的建设奠定基础。其建成将在缓解交通拥堵、减少交通事故以及改善沿线城市环境方面发挥重要作用。在本项目中担任项目实施控制顾问（Project Implementation Controls Consultant），主要任务是协助业主管理EPC总承包商、分包商、供应商及各利益相关方，确保其按照合同要求，在功能、技术、工期、成本、安全、质量和环境等方面，实施并完成FEED设计后的设计评估、施工、供货、设备制造、安装、测试、调试、试运行、竣工及工程移交等。

PICC of Ho Chi Minh City Urban Rail Transit Line 2 Project - Ho Chi Minh City Urban Rail Committee (MAUR):

The construction of Ho Chi Minh City Urban Rail Transit Line 2 aims to supplement high-capacity public transportation, meet the travel needs of citizens between the city center and the northwest corridor, and lay the foundation for the construction of other urban rail transit lines in the future. Its completion will play an important role in alleviating traffic congestion, reducing traffic accidents, and improving the environment of cities along the route. As a Project Implementation Controls Consultant in this project, my main task is to assist the owner in managing the EPC general contractor, subcontractors, suppliers, and various stakeholders, ensuring that they implement and complete the design evaluation, construction, supply, equipment manufacturing, installation, testing, commissioning, completion, and project handover after FEED design in accordance with contract requirements in terms of functionality, technology, schedule, cost, safety, quality, and environment.

2.2 系统集成，测试，联调
System Integration, Testing and Commissioning

2.2.1 地铁/城际/有轨电车车辆集成
Metro / Intercity / Tram Rolling Stock Integration

车辆采购招标、合同澄清、组织设计联络与设计审查、组织主要部件首件检查、负责车辆驻厂监造、出厂验收、负责到段列车的调试、负责列车与系统联调、列车预验收、质保期运营、列车最终验收。

Vehicle procurement bidding, contract clarification, organization of design liaison and design reviews, organization of first article inspections for major components, in-plant supervision of vehicle manufacturing, factory acceptance inspection, commissioning of trains delivered to depots, joint commissioning of trains and related systems, pre-acceptance of trains, operation during the warranty period, and final acceptance of trains

2.2.2 机电系统集成（信号及车辆控制，通信，供电，监控与数据采集、自动售检票系统等）
E&M System Integration (Signaling, Communication, Power Supply, ISCS, AFC etc.)

2.2.3 车站机电系统集成（通风与空调，给排水，FAS，BAS，ACS，PSD，自动扶梯/电梯等）
Station E&M System Integration (Ventilation and Air Conditioning, Water Supply and Drainage, FAS, BAS, ACS, PSD, Escalator, Elevator etc.)



广州地铁七号线西延段

广州地铁七号线西延段作为跨市地铁线路，总投资约90亿元，对推动广佛同城化、完善大湾区跨市交通网络具有重要意义，可有效提升两地通勤效率、缓解交通压力，为跨市地铁建设提供宝贵经验借鉴。在本项目中，集团公司承担代建业务，协助业主管理EPC总承包商、设计单位、设备供应商及各参建单位，在功能定位、技术标准、工期控制、成本管理、安全保障、质量把控等方面，以高标准完成方案设计、设备选型、采购管理、施工组织及联调前置等全流程工作，成为跨市地铁机电系统集成的标杆案例。

Guangzhou Metro Line 7 West Extension

The western extension of Guangzhou Metro Line 7, as a cross city subway line with a total investment of about 9 billion yuan, is of great significance in promoting the urbanization of Guangzhou and Foshan, improving the cross city transportation network in the Greater Bay Area, effectively improving commuting efficiency between the two cities, alleviating traffic pressure, and providing valuable experience and reference for cross city subway construction. In this project, the group company undertakes the construction agency business, assisting the owner in managing the EPC general contractor, design unit, equipment supplier, and various participating units. In terms of functional positioning, technical standards, schedule control, cost management, safety assurance, quality control, etc., it completes the entire process of scheme design, equipment selection, procurement management, construction organization, and pre commissioning with high standards, becoming a benchmark case for cross city subway electromechanical system integration.

2.2.4 段场工艺设备集成
Depot Equipment Integration

场段工艺设备集成及采购一体化服务：
集成提供场段工艺设备，包括但不限于不落轮镟床、洗车机、驾车机、限界门、立体仓库等，同时提供工艺设备与其他专业设计联络接口、各设备选型、采购管理等集成服务，确保场段工艺设备集成产品优质服务。

Integrated Service for Depot Process Equipment Integration and Procurement: Provide integrated depot process equipment including but not limited to wheel lathes without wheel removal, train washers, vehicle lifting machines, gauge doors, and automated vertical warehouses, as well as integrated services such as design liaison interfaces between process equipment and other specialties and equipment selection and procurement management, to guarantee high-quality integrated products and services of depot process equipment.



为国内6座城市、10条有轨电车、地铁及城际线路工艺设备采购集成业务，累计合同额超3亿元，涵盖20大类、近1000项全品类工艺设备产品，具备超过10年段场工艺设备运用维护及技术管理经验，且同类设备具有国内外多个主流品牌制造商产品的管理经验，对下游厂家的供货质量、安装及调试验收方面有极强的约束和管控能力，能够为业主提供更全面、更完善的管理和服务。

We have undertaken the procurement and integration of process equipment for 6 domestic cities, covering 10 tram, metro and intercity rail lines, with a cumulative contract value exceeding 300 million yuan. Our business scope includes nearly 1,000 full-category process equipment products across 20 major categories. We possess over 10 years of experience in the operation, maintenance and technical management of depot and stabling yard process equipment, as well as management experience with products from multiple mainstream domestic and foreign manufacturers of similar equipment. We maintain robust restraint and control over downstream suppliers in terms of delivery quality, installation, commissioning and acceptance, enabling us to deliver more comprehensive and refined management and services to project owners. Our representative projects are listed as follows.

2.2.5 联调联试
Testing and Commissioning



广州地铁十一号线
Guangzhou Metro Line 11

广州地铁十一号线作为广州首条中心城区环线，全线31座车站中有26座为换乘站，是目前全国换乘站数量最多、线路衔接最复杂的骨干线路。由于多线交汇、多系统接口密集，其机电建设与系统联调验收工作面临极大挑战。在此过程中，集团公司充分发挥核心管理作用，统筹土建、机电等多专业协同推进，牵头制定联调验收总体方案，强化跨单位、跨专业协调，严格把控设备安装质量、系统联动调试及各项专项验收，高效解决海量接口冲突、功能适配及整改闭环问题，为这条高难度环线线路按期高质量开通运营提供了坚实的管理保障。

As the first central urban ring line in Guangzhou, Guangzhou Metro Line 11 has 26 transfer stations among its 31 stations, making it the backbone line with the largest number of transfer stations and the most complex line connections in China. Due to the intersection of multiple lines and the density of multiple system interfaces, the mechanical and electrical construction and system commissioning acceptance work face great challenges. In this process, the group company fully played its core management role, coordinated the promotion of multiple disciplines such as civil engineering and mechanical and electrical engineering, took the lead in formulating the overall plan for joint debugging and acceptance, strengthened cross unit and cross professional coordination, strictly controlled the quality of equipment installation, system linkage debugging, and various special acceptance, efficiently solved a large number of interface conflicts, functional adaptation, and rectification closed-loop problems, and provided solid management guarantee for the timely and high-quality operation of this high difficulty loop line.

2.2.6 试运行
Trial running



长沙地铁六号线试运行工作
Trial Run of Changsha Metro Line 6

长沙地铁6号线全长约48.1公里，设站34座，为东西向骨干线路。长沙地铁6号线运营筹备项目：长沙市轨道交通6号线工程（B部分）PPP项目运营筹备（含文本服务）试运行咨询服务工作主要有：编制试运行总体方案和相应的实施计划；指导甲方按照试运行总体方案组织实施；对试运行过程中出现的问题，提供处置建议意见；提交试运行评估结果的咨询意见。

Changsha Metro Line 6 is about 48.1 km long with 34 stations and serves as an east-west backbone line. For the operation preparation project of Changsha Metro Line 6, namely the trial run consulting services under the PPP project operation preparation (including documentation services) for Part B of the Changsha Rail Transit Line 6 project, the main work included preparing the overall trial run plan and implementation plan; guiding the owner in organizing implementation according to the plan; providing recommendations for issues arising during the trial run; and submitting consulting opinions on the trial run evaluation results.

2.3 制造监造与专项技术咨询

Manufacturing Supervision and Dedicated Technical Consultancy

2.3.1 工程监理

Engineering Supervision



深圳市春风隧道工程项目-深圳市交通公用设施建设中心

项目规项目规模：总投资约50亿元
项目概项目概况：本项目是深圳市“东进战略”重大交通项目之一，全长约5.08公里，其中盾构段3.6公里，采用国内最大直径盾构施工技术，开挖直径15.80m。该项目盾构一次性连续掘进3.6公里，长距离穿越软硬不均地层，11条断层破碎带，全断面硬岩最高强度达173MPa,隧道埋深变化大，水压大，R750m小曲线转弯达到盾构机转弯能力极限，在城市主城区施工，盾构段沿线穿越布吉河、深圳火车站、广深铁路、深圳地铁1号线和9号线等风险源，影响范围内建筑106栋，其中直接下穿28栋，影响桥梁9座，施工难度大。项目应用BIM建筑信息模型技术，创建"BIM技术示范工程”,为工程安全、优质、高效推进提供技术保障。

Chunfeng Tunnel Project in Shenzhen – Shenzhen Transportation Public Facilities Construction Center

Project Scale: Total investment of approximately 5 billion yuan
Project Overview: As one of the major transportation projects under Shenzhen' s Eastward Development Strategy, this project stretches about 5.08 kilometers in total, including a 3.6-kilometer shield-driven section constructed by China' s largest-diameter shield machine with an excavation diameter of 15.80 meters. The shield machine carries out continuous single-pass tunneling for 3.6 kilometers, traversing long-distance uneven soft and hard stratum as well as 11 fault fracture zones. The maximum compressive strength of full-face hard rock reaches 173 MPa. The tunnel features drastic variations in burial depth and high water pressure, and it makes a tight curve with a radius of 750 meters (R750m), hitting the steering limit of the shield machine. Built in the main urban area, the shield section passes through multiple risk sources along its alignment, including the Buji River, Shenzhen Railway Station, Guangzhou-Shenzhen Railway, Shenzhen Metro Line 1 and Line 9. A total of 106 buildings fall within its influence zone, among which 28 are directly undercrossed, alongside 9 affected bridges, resulting in extremely high construction difficulty. The project adopts BIM (Building Information Modeling) technology and has been designated a "BIM Technology Demonstration Project", delivering technical support for the safe, high-quality and efficient construction of the works.

2.3.2 盾构咨询与监造

2.3.2 TBM Consulting and Manufacturing Supervision



德国汉堡西区区域供热管网连接工程（FWS West）T1 标段易北河穿越隧道

隧道穿越汉堡港区、易北河等沉降敏感区域。项目采用开挖直径 4.55 米土压平衡盾构机，设备搭载定制快速浆液平衡自动控制系统，具备高度数字化与自动化能力。

Hamburg District Heating System Connection West (FWS West) – Lot T1, Elbe River Crossing Tunnel, Germany

The tunnel passes through sensitive subsidence areas including Hamburg Port area and the Elbe River. The project uses a 4.55 meter diameter earth pressure balance (EPB)shield tunneling machine. The equipment includes a specially customizedrapid slurry balance automatic control system, featuring high levels of digitalization and automation

2.3.2 盾构咨询与监造

TBM Consulting and Manufacturing Supervision



新加坡樟宜机场 APM 线盾构设备监造

对项目所使用海瑞克 S 1265 土压平衡盾构开展工厂监造；该盾构开挖直径 7.46 米。

Singapore Changi Airport APM Line, TBM Manufacturing Supervision, Singapore

We conducted factory supervision of the Herrenknecht S 1265 earth pressure balance shield machine applied to the project. The equipment is an earth pressure balance shield machine with an excavation diameter of 7.46 meters.



澳大利亚悉尼地铁西线盾构设备监造

本项目使用多台直径 7.01 米硬岩双护盾盾构机；其中两台由海瑞克广州工厂制造、由西班牙安迅能澳大利亚分公司与法罗威雅联营体采购的盾构设备由我方实施监造。

Sydney Metro West, TBM Manufacturing Supervision, Australia

The project employs multiple Φ7.01m hard rock dual shield Tunnel Boring Machines (TBMs). Two of these TBMs, manufactured by Herrenknecht in Guangzhou and procured by the joint venture of Acciona Australia and Ferrovial, were supervised by our company.

塞尔维亚贝尔格莱德地铁1号线一期主段TBM 制造监理及咨询服务

Manufacturing Supervision and Consulting Services for the Main Section of Phase I of Belgrade Metro Line 1 in Serbia

2.3.3 盾构远程风险监控
TBM Risk Remote Monitoring

广州地铁构建盾构施工管理系统，通过传感器实时采集盾构推力、扭矩、地层压力、姿态等数据，可在电脑和手机端掌握施工情况。在广州地铁18号线施工中，盾构机最大埋深近50米，需多次下穿既有线路及建构筑物。系统通过监测与预警模型，当参数偏离标准或出现异常时，手机会弹出预警。系统还引入无人机巡检，通过AI识别工地问题。该系统已应用于广州地铁19条线路，累计监管盾构661台次，发出参数预警超10万次、风险预警近3.1万次。

Guangzhou Metro has built a shield tunneling construction management system. It collects real-time data such as shield thrust, torque, formation pressure and posture through sensors, enabling construction progress to be monitored on computers and mobile phones. During the construction of Guangzhou Metro Line 18, the maximum buried depth of the shield machine was nearly 50 meters, requiring multiple underpasses beneath existing metro lines and buildings and structures. Equipped with monitoring and early warning models, the system triggers pop-up alerts on mobile phones once parameters deviate from standard values or abnormalities occur. The system also adopts UAV patrol inspections and identifies on-site construction problems via AI technology. This system has been deployed across 19 metro lines of Guangzhou Metro, overseeing a total of 661 shield machine operations, issuing more than 100,000 parameter early warnings and approximately 31,000 risk early warnings.

2.3.4 管片监造
Segment Manufacturing Supervision

广花、芳白城际项目第一次采用单独招取管片监理单位，管片成品质量得到有效提高，继而在南珠中城际、八北八支、八东线都推行该种模式

Guangzhou-Huadu and Fangcun-Baiyun intercity projects adopted the practice of separately tendering for segment supervision units for the first time, which effectively improved the finished quality of tunnel segments. This model was subsequently rolled out for the Nanzhu-Zhongshan Intercity Railway, Line 8 North Extension, Line 8 Branch and Line 8 East Extension.

2.3.5 车辆及机电系统监造
Rolling Stock and E&M Systems Manufacturing Supervision



尼日利亚拉各斯蓝线轻轨电力动车组监造验收服务项目

作为公司海外标杆项目，助力企业落实国际化发展战略。线路全长27.52公里、设计时速100公里，车辆采用不锈钢车体，搭载智能乘客计数、全屏LED显示等先进配置，车门支持集控与单控双模式，整体技术达到国际先进水平。我司负责车辆驻厂监造、出厂验收及现场调试交付全流程服务，通过工序审核、关键节点见证、全流程质量追溯体系严控交付品质，沉淀了成熟的海外轨交车辆监造与国际化项目管理经验。

Supervision and Acceptance Service Project for EMUs of Lagos Blue-Line Light Rail in Nigeria

As a landmark overseas project of the company, it supports the enterprise in implementing its international development strategy. The total length of the line is 27.52 km with a designed speed of 100 km/h. The rolling stock adopts stainless-steel car bodies and is equipped with advanced configurations including intelligent passenger counting and full-screen LED displays. Its doors support both centralized and individual control modes, and the overall technology has reached an internationally advanced level. Our company provides full-process services including in-plant manufacturing supervision, factory acceptance, as well as on-site commissioning and handover. Delivery quality is strictly controlled via procedure review, witness of key milestones and a full-process quality traceability system, which has accumulated proven experience in overseas rail transit rolling-stock supervision and international project management.

2.3.6 环境保护咨询
Environmental Consultancy

2016 签订新建霍尔果斯铁路口岸站、哈密货车南环线等工程的环境监理合作协议书，启动环境监理工作，合同额 73 万元。

2017 中标广州市轨道交通七号线一期、八号线北延段、十四号线、知识城线工程环境监理及监测项目，合同额 1567.728 万元。

2018 承接佛山市城市轨道交通三号线工程环境与水土保持监理监测 3108 标，开拓佛山区域业务，合同额 619.2 万元。

2019 签订南疆铁路库尔勒至喀什段提速扩能改造工程环境保护监理技术咨询服务合同，合同额 369.2934 万元。

2020 中标广州市轨道交通三号线东延、十号线、十一号线、十二号线、十四号线二期工程环境监理及监测项目，合同额 2665.7511 万元。

2021 签订广州市轨道交通 7 号线一期工程西延顺德段环境监理服务项目合同，合同额 80 万元。

2024 中标八北、八支和南沙至珠海（中山）城际监理总体项目，以及广州东至花都天贵城际环境监理及监测项目，合同额约 2885 万元。

2025 中标广州市城市轨道交通 8 号线东延工程（万胜围-莲花）及同步实施工程监理总体（含盾构管片监理），合同额：8542595.56 元。

2016 Signed the environmental supervision cooperation agreement for projects including the new Khorgos Railway Port Station and Hami Freight South Loop Line, launched environmental supervision work, with a contract value of 730,000 RMB.

2017 Won the bid for the environmental supervision and monitoring project of Guangzhou Metro Line 7 Phase I, Line 8 North Extension, Line 14 and Knowledge City Line, with a contract value of 15.67728 million RMB.

2018 Undertaken Bid 3108 for environmental and soil & water conservation supervision and monitoring of Foshan Urban Rail Transit Line 3, expanded business in Foshan, with a contract value of 6.192 million RMB.

2019 Signed the technical consulting service contract for environmental protection supervision of the speed increase and capacity expansion reconstruction project of Korla–Kashgar Section of Southern Xinjiang Railway, with a contract value of 3.692934 million RMB.

2020 Won the bid for environmental supervision and monitoring project of Guangzhou Metro Line 3 East Extension, Line 10, Line 11, Line 12 and Line 14 Phase II, with a contract value of 26.657511 million RMB.

2021 Signed the environmental supervision service contract for Shunde West Extension Section of Guangzhou Metro Line 7 Phase I, with a contract value of 800,000 RMB.

2024 Won the bid for general supervision project of Babei, Bazhi and Nansha–Zhuhai (Zhongshan) Intercity Railway, as well as environmental supervision and monitoring project of Guangzhoudong–Huadu Tiangui Intercity Railway, with an estimated contract value of 28.85 million RMB.

2025 Won the bid for General Supervision (including shield segment supervision) of Guangzhou Urban Rail Transit Line 8 East Extension Project (Wanshengwei-Lianhua) and Simultaneously-implemented Works, with a contract value of 8.54259556 million RMB.

2.3.7 地铁保护咨询
Metro Protection Consultancy

广州东至花都天贵城际及芳村至白云机场城际

广州东至花都天贵城际工程线路全长约39.6km，全地下敷设。芳村至白云机场城际工程线路全长约41.1km，全地下敷设。统筹、组织对送审外部项目方案进行审查及提供技术咨询服务；外部工程实施过程中落实轨道交通保护措施和技术要求进行日常监督；统筹、组织对涉及既有城市轨道交通线路的建设工程方案进行审查，提出技术咨询意见，对新线建设工程实施，提供技术咨询服务和日常监督；对新线建设涉及既有运营线路报批流程进行技术指导；对施工单位和监理单位职责范围内的轨道交通保护日常工作进行专业指导

Metro Protection Management Consultancy for Guangzhou East-Huadu Tiangui Intercity Railway and Fangcun-Baiyun Airport Intercity Railway

The total length of the Guangzhou East-Huadu Tiangui Intercity Railway project is approximately 39.6 km, fully underground. The total length of the Fangcun-Baiyun Airport Intercity Railway project is approximately 41.1 km, fully underground. Coordinate and organize the review of submitted external project proposals and provide technical consultancy services; conduct routine supervision over the implementation of rail transit protection measures and technical requirements during the execution of external projects; coordinate and organize the review of construction project proposals involving existing urban rail transit lines, put forward technical consultancy opinions, and provide technical consultancy services and routine supervision for the implementation of new-line construction projects; provide technical guidance for the approval procedures of new-line construction affecting existing operational lines; provide professional guidance on daily rail transit protection work within the scope of responsibilities of construction units and supervision units.

2.3 制造监造与专项技术咨询

Manufacturing Supervision and Dedicated Technical Consultancy

2.3.8 检验检测咨询

Inspection and Testing Consultancy

南沙至珠海(中山)城际(万顷沙—兴中段)、广州市城市轨道交通8 号线北延段工程(浴心~广州北站)、8 号线北延段支线工程.(江府~纪念堂)、广州东至花都天贵城际工程环境监测项目

为南中珠城际、广花城际线路及广州地铁8号线北延段工程（滘心-广州北站）、8号线北延段支线工程（江府-纪念堂）提供监测服务，为评价施工期环境保护措施效果提供第三方数据和改进建议

Environmental Monitoring Project for Nansha-Zhuhai (Zhongshan) Intercity Railway (Wanqingsha-Xingzhong Section), Guangzhou Urban Rail Transit Line 8 North Extension Project (Jiaoxin-Guangzhou North Railway Station), Line 8 North Extension Branch Project (Jiangfu-Jiniantang), and Guangzhoudong-Huadu Tiangui Intercity Railway Project

Provide monitoring services for the Nan-Zhong-Zhu Intercity Railway, Guang-Hua Intercity Railway, Guangzhou Metro Line 8 North Extension Project (Jiaoxin-Guangzhou North Railway Station) and Line 8 North Extension Branch Project (Jiangfu-Jiniantang), and supply third-party data and improvement suggestions for evaluating the effectiveness of environmental protection measures during the construction period.

2.3.9 TOD开发管理咨询

TOD Development Management Consultancy



广州琶洲南TOD项目

琶洲南TOD为地铁11号线赤沙车辆段上盖开发项目，建筑面积约100万m^2，为广州高端综合体项目之一，住宅销售连续三年全国销冠。项目为全国首个腾挪改造、双层盖板运用、装配式盖板运用、盖上建筑150米的结构转换等专项技术案例。广州地铁全程参与了从规划方案、挂牌出让、设计、施工、销售的全周期。

The Pazhou TOD in GZ

The Pazhou TOD locates above Chisha Depot of Line 11,with GFA over 1,000,000 square meters. It is one of the high-end residential projects in Guangzhou, top selling nationwide from 2022-2024, utilizing multiple vibration and noise reduction technologies, prefabricated depot cover, structural transformation of building 150 meters above depot roof, etc. Guangzhou Metro Properties has participated in the entire process of development, incuding planning, design, construction, and sales.

2.4 智能化解决方案

Smart Solutions

2.4.1 轨道交通全专业数字化集成平台

Multi-discipline digital integration platform for rail transit



新加披联合创新实验室首期建设项目-新加坡地铁公司（SMRT）

穗腾数字底座（NEXT平台）在新加披完成试点部署，一方面，为智慧车站、综合业务两大核心应用提供全域、稳定、高效的数据支撑，顺利实现车站设备远程智能联控、轨交运行状态数字孪生可视化管控，助力新加坡地铁车站运营精细化、管理智能化、服务高效化升级；另一方面，完成客流预测、轨道智能检测、车辆巡检机器人等多款核心业务系统的深度集成，全面打通各场景、各系统数据链路，破除数据孤岛，实现多业务模块无缝对接、协同联动，构建起一体化、智能化的轨交运营管控体系。

Phase I of the Singapore Joint Innovation Lab Construction Project – SMRT Corporation

The swifton Digital Foundation (NEXT Platform) has completed its pilot deployment in Singapore. On one hand, it provides comprehensive, stable, and efficient data support for the two core applications—smart stations and integrated operations—successfully enabling remote intelligent joint control of station equipment and digital twin visualization of rail transit operational status, thereby helping to upgrade Singapore MRT station operations toward greater precision, smarter management, and more efficient services; On the other hand, it has achieved deep integration of multiple core business systems—including passenger flow forecasting, intelligent rail track inspection, and vehicle inspection robots—comprehensively connecting data links across all scenarios and systems, eliminating data silos, and enabling seamless integration and coordinated collaboration among multiple business modules, thereby establishing an integrated and intelligent rail transit operations management system.



2.4.2 智慧建造应用

Smart Construction System

基于数据的工程项目管理体系的搭建，包括平台搭建、建模服务、标准的编制等。

Focusing on the full-life-cycle management of metro engineering construction, the smart construction system integrates multiple functions including 3D modeling, equipment status monitoring, personnel access control, vehicle dispatching, construction management, on-site inspection and safety supervision. It standardizes all on-site construction workflows via digital means, breaks down data silos throughout the construction phase, effectively mitigates construction safety risks, and improves the standardization, normalization and intelligent management of metro construction.

2.4.3 智慧运维系统

Smart Operation and Maintenance System

线网级/线路级/车站级综合监控、智慧车站、智慧运维等系统的部署、数据对接、定制化功能配置与用户培训。

Covering operation and maintenance scenarios at three levels: metro network, line and station, the smart operation and maintenance system delivers whole-process intelligent control, early hazard prediction and efficient problem resolution for metro maintenance through functions such as equipment monitoring, equipment health assessment, safety risk early-warning, intelligent work-order management, digital-twin simulation, emergency response, intelligent Q&A and AIGC-generated operation reports. It greatly enhances the refinement and automation capability of metro operation and maintenance.

2.4.4 智慧巡检系统

Smart Inspection System

面向轨道交通线路保护区或隧道的智慧巡检系统的平台部署、监测设备对接、AI模型训练、预警规则配置及用户培训。

Powered by big-data analytics and core AI image-recognition algorithms, the smart inspection system enables 7×24-hour real-time monitoring of metro protection zones, with intelligent risk identification, alerts for abnormal events, automatic work-order generation, and statistical review and analysis of alarm data. It fundamentally replaces the traditional manual-inspection model.

运营与维护
OPERATION AND MAINTENANCE (O&M)



哥伦比亚西部有轨电车运维项目

哥伦比亚区域有轨电车位于波哥大西部，线路全长 39.66 公里双线电气化，设 17 座车站。广州地铁承担 21.5 年运维以及沿线资源特许经营，这将是南美洲首个由中国企业独立运营管理的轨道交通项目。

RegioTram de Occidente Operation and Maintenance

Colombia Regio Tram is a 39.66 km double track electrified railway with 17 stations, located in westen Bogotá. Guangzhou Metro undertakes its 21.5 year operation and maintenance, as well as the franchising of resources along the line. It will be South America's first rail transit project independently operated and managed by a Chinese enterprise.







3.1 运营 Operation

3.1.1运营筹备
Operation Preparation

为新建轨道交通线路提供从工程建设中后期到开通运营的全流程筹备服务：运营组织架构设计与人员配置规划、运营规章制度与管理体系搭建、运营人员大规模招聘与培训体系实施、运营介入工程设计审查与调试、运营资产移交与接收管理、综合联调、运营演练、试运行组织、初期运营前安全评估辅导、应急管理体系建设与演练。覆盖地铁、城际铁路、有轨电车等多制式。

Provide full-process operation preparation services for new rail transit lines from the mid-to-late construction stage to opening: design of the operating organization and staffing plan; establishment of operating rules, regulations and management systems; large-scale recruitment and training of operating personnel; operations involvement in engineering design review and commissioning; asset handover and acceptance management; integrated joint testing; operational drills; trial run organization; coaching for the pre-opening safety assessment; and establishment and drills of the emergency management system. The services cover metro, intercity railway, tram and other transit modes.

3.1.2 地铁/城际/有轨电车运营
Metro / Intercity / Tram Operation

提供全制式轨道交通线路的委托运营服务：行车组织与调度指挥、客运服务与乘客关系管理、安全管控与风险预防、日常运营管理与绩效考核、资产与能耗管理体系运作、持续运营绩效分析与优化、本地化团队带教与体系建设。覆盖制式：地铁（含高速地铁）、城际铁路、有轨电车等。

Provide contracted operation services for rail transit lines of all modes: train operation organization and dispatching command; passenger service and passenger relations management; safety control and risk prevention; daily operation management and performance assessment; operation of asset and energy management systems; continuous analysis and optimization of operating performance; and mentoring and system building for local teams. Covered modes include metro (including high-speed metro), intercity railway and tram.

3.1.3 客货混运运营
Passenger & Freight Operation

针对海外市场客货两用轨道交通线路提供专业化混运运营管理服务：客货混运行车组织与调度指挥方案设计、货运车辆与客运车辆协同运行管理、混运线路安全风险管控与应急预案制定、跨境货运通关协调与多式联运衔接、混运模式运营绩效分析与持续优化。

Provide professional mixed passenger-and-freight operation management services for dual-use rail transit lines in overseas markets: design of mixed-operation train organization and dispatching command plans; coordinated operation management of freight and passenger trains; safety risk control and emergency planning for mixed-operation lines; cross-border freight customs clearance coordination and multimodal transport connections; and analysis and continuous optimization of mixed-mode operating performance.



城际运营公司为马来西亚东海岸铁路衔接公司（MRL）提供调度管理咨询服务、生产一线人员培养服务。

马来西亚东海岸铁路为马来西亚最大基础设施项目，是“一带一路”旗舰工程。业主为马来西亚铁路衔接公司（MRL），项目总承包方为中国交建。计划于2027年初投入运营。项目横跨马来西亚半岛东西两段，起点哥打巴鲁，终点巴生港，途经吉兰丹、登嘉楼、彭亨和雪兰莪四个洲。总路线长度为665公里，共设20座车站，客运速度160km/h，货运80km/h，采用CR200J动车组（客运）及700吨货运车辆、东风3C型电力机车（货运），国铁I级标准。

East Coast Rail Link (ECRL) Operation & Maintenance Project,Malaysia

Flagship BRI project, Malaysia' s largest land infrastructure. The total route length is 665 km with 20 stations. Passenger trains operate at 160 km/h and freight trains at 80 km/h, using CR200J EMUs for passenger service and 700-ton freight wagons and Dongfeng 3C electric locomotives for freight service, built to China Railway Class I standards.
Delivering standardized long term intercity rail O&M.We provide a fullpackage operation and maintenance service: delivering operational and technical standards including train operation scheduling and safety control; establishing a localized talenttraining mechanism to cultivate local professional and technical personnel; and building a standardized inspection, maintenance and management system for infrastructures such as communication, signalling, power supply, subgrade, track, bridges, tunnels and station buildings.

3.1.4 运营管理全专业咨询
All-Discipline Operation Management Consulting Service



新加坡地铁咨询服务项目

2024年，广州地铁为新加坡地铁提供车辆运营管理、技术维护与升级、人员培训及知识转移等全方位咨询服务。通过深入分析运营数据，量身定制优化方案，助力新加坡地铁提升车辆运营效率与服务质量。

Singapore MRT Consulting Services Project

n 2024, Guangzhou Metro provided comprehensive consulting services to Singapore MRT covering rolling stock operation management, technical maintenance and upgrading, personnel training, and knowledge transfer. Through in-depth analysis of operating data, tailored optimization solutions were developed to help Singapore MRT improve rolling stock operating efficiency and service quality.



墨西哥城地铁一号线通信、信号、线路专业配合咨询服务项目

墨西哥城地铁1号线整体现代化项目是墨西哥重大PPP项目，入选联合国开发计划署全球十大PPP项目经典案例，是墨西哥城市轨道交通骨干线。2023年8月，广州地铁参与墨西哥城地铁一号线整体现代化项目通信、信号、线路维保项目，参与合同前期准备、相关技术谈判、技术方案/移交程序编制及审查，并在合同谈判、合同签署、辅助验收等工作中提供专业咨询服务。

Mexico City Metro Line 1 Communication, Signaling, and Track Consulting Support Project

The overall modernization of Mexico City Metro Line 1 is a major PPP project in Mexico and was selected as one of the UNDP's top ten global PPP case studies. It is a backbone urban rail line in Mexico City. In August 2023, Guangzhou Metro participated in the communication, signaling, and track maintenance components of the overall modernization project, supporting early contract preparation, technical negotiations, preparation and review of technical solutions, and handover procedures, and providing professional consulting during contract negotiation, signing, and acceptance support.



尼日利亚阿布贾城铁一期运营项目

综合考虑阿布贾城铁项目规划和设计、城市发展现状等各方面因素，协助甲方提出、制定和落实具有建设性的运营方案，协助进行相关专业运营维护人员招聘和培训，提供有效的阿布贾城铁一期运营管理服务项目运营维护和安全管理的技术支持、咨询、督导等服务；

Abuja Urban Rail Phase I Operation Project, Nigeria

Taking into account project planning and design and the current state of urban developmentdevelopment, the company assisted the owner in proposing, formulating, and implementing constructive operation plans; supported recruitment and training of relevant operation and maintenance personnel; and provided technical support, consulting, and supervision for the operation, maintenance, and safety management of the Abuja Urban Rail Phase I operation management service project.

3.1.5 备件采购服务
Spare Parts Procurement Service

1.为地铁、城际运营单位提供备品备件、低值易耗品、工器具等采购及仓储物流服务
2.提供海外项目备件国产化替代选型、备件库存定额管理及供应链方案设计

1. Provide procurement and warehousing/logistics services for spare parts, low-value consumables, tools and equipment for metro and intercity operating units
2. Provide localization substitution selection for overseas project spare parts, spare parts inventory quota management and supply chain solution design

OPERATION AND MAINTENANCE (O&M)

3.2 维护 Maintenance

3.2.1地铁/城际/有轨电车车辆维护

Metro / Intercity / Tram Rail
Rolling Stock System Maintenance

提供轨道交通车辆全生命周期维护服务：维保方案制定与维保体系搭建、日常维保（日检、双周检、三月检、定修）、列车预验收与最终验收、维保业务咨询、关键部件故障诊断与技术分析等。

Provide full-life-cycle rolling stock maintenance services: maintenance plan formulation and maintenance system establishment; routine maintenance (daily inspection, biweekly inspection, quarterly inspection and scheduled repair); train pre-acceptance and final acceptance; maintenance consulting; and fault diagnosis and technical analysis of key components.



3.2.2 机电系统维护（信号，通信，供电，综合监控、自动售检票系统等）

E&M System Maintenance (Signaling, Communication, Power Supply, ISCS, AFC etc.)

提供轨道交通供电、通风空调、给排水、消防、电扶梯、屏蔽门/站台门、综合监控、低压配电及照明等机电系统的日常维护、定期检修、故障处理及应急抢修服务。涵盖设备巡检、预防性维护、状态监测、故障诊断与修复、备件更换、系统调试及性能优化等全生命周期运维管理。

Provide daily maintenance, periodic repair, fault handling and emergency repair services for rail transit power supply, HVAC, water supply and drainage, fire protection, escalators and elevators, platform screen doors, integrated supervisory control, low-voltage power distribution and lighting systems. The scope covers equipment inspection, preventive maintenance, condition monitoring, fault diagnosis and repair, spare parts replacement, system commissioning and performance optimization throughout the life cycle.

3.2.3 车站机电系统维护(通风与空调，给排水，火灾自动报警系统，环境与设备监控系统，门禁，站台门，自动扶梯，电梯等)

Station E&M System Maintenance (Ventilation and Air Conditioning, Water Supply and Drainage, FAS, BAS, ACS, PSD, Escalator, Elevator etc.)

提供供电（牵引供电、电力）、通信、信号、信息系统等基础设施的运营保障、日常维保与高级修管理服务：维保体系搭建、检修规程编制、维保计划管理、作业质量管控、故障抢修、大中修组织实施及全过程技术监督。

Provide operation support, routine maintenance and heavy repair management services for infrastructure such as power supply (traction power and electricity), communications, signaling and information systems: maintenance system establishment, repair procedure preparation, maintenance plan management, work quality control, emergency fault repair, organization of medium and heavy repairs, and whole-process technical supervision.

3.3 维修 Repair

3.3.1 电子部件维修

Electronic PCB Repair

轨道交通电子部件检测、分析与维修

Inspection, analysis and repair of rail transit electronic components

3.3.2 车辆轮对维修

Wheelset Maintenance & Repair

提供轮对部件维修服务，涵盖换轮维修、轴箱维修、齿轮箱大修、制动盘等附属部件维修，以及车轮车轴等部件加工服务。

Provide wheelset component repair services, including wheel replacement, axlebox repair, gearbox overhaul, repair of brake discs and other auxiliary components, and machining of wheels, axles and other parts.

3.3.3 车辆架大修

Rolling Stock Overhaul

提供整车重要部件全流程维修作业。严格按照作业标准开展部件分解、深度清洗、精密检查、无损探伤、故障修理、精准组装等工序，全面排查部件隐患，及时更换老化、损坏、性能不达标的不良零部件。作业完成后，对整车开展全方位性能检测、参数调试及整机试验，全面修复车辆各项性能指标，确保车辆综合运行状态达标、安全稳定。
提供车辆架大修、专项修项目的全过程统筹管理，覆盖项目规划、计划落地、物资保障、审核报审、售后质保全链条工作。

Provide full-process repair of important whole-vehicle components. In strict accordance with work standards, carry out component disassembly, deep cleaning, precision inspection, non-destructive testing, fault repair and precise assembly; fully identify hidden component hazards; and promptly replace aged, damaged or underperforming parts. After completion, conduct comprehensive performance testing, parameter adjustment and whole-unit testing to restore all vehicle performance indicators and ensure safe, stable and compliant overall operating condition.
Provide whole-process management of rolling stock overhaul and special repair projects, covering project planning, plan implementation, material support, review and approval, and after-sales warranty.



巴基斯坦拉合尔橙线运维服务项目

巴基斯坦第一条地铁，也是“一带一路”倡议下中巴经济走廊首个大型轨道交通工程。项目全部采用中国技术、标准与装备，广州地铁助力巴基斯坦迈入地铁时代。开通运营 5 年来，橙线实现安全零事故，累计客运量超 2.6 亿人次，运行图兑现率、列车准点率均达 99.9%。

Pakistan Lahore Orange Line Operation and Maintenance Service Project, Pakistan

Pakistan's first metro, the first large scale rail transit construction project under the " Belt and Road Initiative (BRI)" initiative "China Pakistan Economic Corridor".The Orange Line project adopts Chinese technology, standards, and equipment. Guangzhou Metro push Pakistan into the metro era. It is the first rail transit project of China Pakistan Economic Corridor under the framework of the "the Belt and Road" initiative. Since its opening and operation 5 years ago, the Orange Line project has achieved zero safety accidents, transported over 260 million passengers, and achieved a timetable fulfillment rate and train punctuality rate of 99.9%

3.4 更新
3.4 Upgrade

3.4.1 AFC改造
AFC System Renovationl

提供自动售检票（AFC）系统升级改造全过程服务：既有AFC系统评估与改造方案设计、清分中心（ACC）系统升级、车站终端设备（闸机、TVM、客服中心）更新改造、多元支付（二维码、乘车码、NFC、银行卡）接入。

Provide full-process AFC system upgrade and retrofit services: assessment of existing AFC systems and retrofit solution design; upgrade of the clearing center (ACC) system; renewal and retrofit of station terminal equipment (gates, TVMs and customer service centers); and integration of diversified payment methods (QR codes, ride codes, NFC and bank cards).

3.4.2 车辆改造（A型车、B型车、APM）
Rolling Stock Retrofit (Type A, Type B, APM)

提供A型车、B型车、APM等多制式车辆的更新改造与技术服务：车辆改造方案设计、改造用户需求书编制、合同澄清、设计联络与设计审查、主要部件首件检查、改造驻厂监造、出厂验收、改造后列车调试与系统联调、预验收及最终验收

Provide renewal, retrofit and technical services for multiple vehicle types including Type A, Type B and APM: vehicle retrofit solution design; preparation of retrofit user requirements; contract clarification; design liaison and review; first-article inspection of major components; resident factory supervision; factory acceptance; post-retrofit train commissioning and system integration testing; pre-acceptance; and final acceptance.

3.4.3 信号改造
Signaling System Upgrade

提供信号系统升级改造全过程服务：既有信号系统评估与延寿分析、CBTC等信号系统升级改造方案设计、全自动运行（GoA4）改造咨询、用户需求书编制、设计联络与审查、接口管理等。

Provide full-process signaling system upgrade and retrofit services: assessment and life-extension analysis of existing signaling systems; upgrade design for CBTC and other signaling systems; consulting for fully automatic operation (GoA4) retrofit; preparation of user requirements; design liaison and review; and interface management.

3.4.4 通信改造
Communication System Upgrade

提供轨道交通通信系统更新改造与升级服务：传输、无线、专用电话、公务电话、时钟、广播、视频监控、电源、安防等子系统的评估、改造方案设计、用户需求书编制、设计联络与审查等。

Provide renewal, retrofit and upgrade services for rail transit communication systems: assessment, retrofit solution design, user requirements preparation, and design liaison and review for subsystems including transmission, radio, dedicated telephone, public telephone, clock, public address, CCTV, power supply and security systems.

3.4.5 绿色节能技术改造
3.4.5 Green Energy Upgrade & Renovation



新加坡地铁绿色车站－东西线、南北线空调节能控制系统改造项目

新加坡地铁车站节能改造项目隶属于新加坡地铁SMRT的“绿色车站（Green Station）”项目，涉及东西线（绿线）、南北线（红线）共16个地下站的空调节能控制系统改造。是新加坡轨道交通行业首个空调系统基于AI技术的系统优化实践。广州地铁提供软件平台及嵌入AI技术自动寻优的控制系统，并且提供系统调试、技术咨询、系统维保服务。

Singapore MRT Green Station – East-West Line & North-South Line Air-Conditioning Energy-Saving Control System Retrofit Project

This project is part of SMRT's "Green Station" initiative, retrofitting the air-conditioning control systems of 16 underground stations across Singapore's East-West and North-South Lines. It marks the first AI-driven air-conditioning optimization practice in the country's rail transit sector. Guangzhou Metro delivers the software platform and AI-powered self-optimizing control system, alongside commissioning, technical advisory, and ongoing maintenance services.

港铁（深圳）4号线一期、二期工程车站空调系统能源管理项目

港铁（深圳）4号线空调系统已完成一、二期改造，累计覆盖6座车站。其中一期4座车站于2024年1月5日开工，6月14日竣工并完成运维移交，历时162天；二期2座车站于2025年12月启动续签。改造采用能源费用托管型合同能源管理模式，一期改造后机房COP达5.76，节能率达52.09%，合同期预计节电量4500万kWh。项目应用数字化建造技术，通过三维重构、管线优化及场外预制，有效缩短工期并提升运维便利性。

MTR Shenzhen Line 4 – Phase 1 & Phase 2 Station Air-Conditioning System Energy Management Project

The AC system retrofits for MTR Shenzhen Line 4 have been completed across 6 stations in two phases. Phase 1 (4 stations) took 162 days, achieving a COP of 5.76, a 52.09% energy saving rate, and an estimated 45 million kWh saved over the contract period. Phase 2 (2 stations) was extended in December 2025. Digital construction technologies were applied to enhance efficiency and maintainability.

3.4.6 智慧化改造
Intelligent Upgrade & Renovation

信号系统及配套专业改造提供全周期一体化技术工程服务，前期开展线路现状勘测、系统寿命评估、兼容性论证、设计及安全风险评估，中期覆盖控制中心、轨旁、车载、车辆段全套设备供货、集成、天窗点施工安装与分阶段联调测试，同步配套通信、车辆、综合监控、站台门、供电配电、环控土建等关联专业接口改造，后期实施新旧系统双系统并行过渡、分段倒切、空载试运行、载客开通保障，同时完成项目验收、运维培训、智能运维平台搭建、备品备件供应及系统功能迭代等全流程配套工作。

Provide full-cycle, integrated technical engineering services for signal system and associated discipline retrofits. In the preliminary phase, conduct on-site surveys of existing line conditions, system lifecycle assessments, compatibility studies, system design, and safety risk evaluations. In the mid-term phase, cover the full scope of equipment supply, system integration, skylight (nighttime) construction and installation, and phased integrated commissioning for the complete signal system, including control center, wayside, onboard, and depot equipment. Concurrently, coordinate and execute interface retrofits for interrelated disciplines, including telecommunications, rolling stock, integrated supervisory and control systems, platform screen doors, power supply and distribution, and environmental control (HVAC) and civil works. In the later phase, implement a dual-system parallel transition strategy between the new and old systems, phased cut-over, no-load trial operation, and revenue service commissioning support. Concurrently, complete project acceptance, operations and maintenance (O&M) training, deployment of an intelligent O&M platform, supply of spare parts, and system function iteration, covering the full spectrum of supporting works throughout the entire project lifecycle.

3.5人才发展与能力建设服务

Talent Development and Capability Building Services

3.5.1 领导力与管理能力发展
Leadership and Management Development

面向海外轨道交通企业管理人员及业务骨干，提供基于广州地铁管理实践的领导力与管理能力发展服务。重点包括：
1. 战略管理与企业运营能力提升；
2. 高层及中层领导力发展；
3. 团队管理与组织协同；
4. 安全领导力与风险意识；
5. 卓越运营、绩效管理与持续改善；
6. 企业文化与组织发展；
7. 管理实践交流、案例研讨与现场学习。
根据不同国家和地区的企业成熟度、管理文化及发展阶段，定制培养主题、学习方式和案例研讨。

For management personnel and key business staff of overseas rail transit enterprises, provide leadership and management capability development services based on Guangzhou Metro's management practices. Key areas include:
1. Strategic management and enterprise operation capability improvement;
2. Senior and middle-management leadership development;
3. Team management and organizational coordination;
4. Safety leadership and risk awareness;
5. Operational excellence, performance management and continuous improvement;
6. Corporate culture and organizational development;
7. Management practice exchanges, case studies and field learning.
Training themes, learning methods and case discussions are customized according to enterprise maturity, management culture and development stage in different countries and regions.

3.5.3 项目建设与运营筹备能力发展
Rail Transit Project and Operation Preparation Development

面向海外新建轨道交通项目，提供从工程建设阶段向运营阶段转换所需的人才培养与能力建设服务。主要包括：
1.项目管理与工程建设管理人才培养
2.建设与运营衔接专业人才培养
3.运营筹备期岗位能力分析与培养规划
4.联调联试与试运行专项能力培养
5.关键岗位资格与上岗能力培养
6.项目经验萃取与知识转移

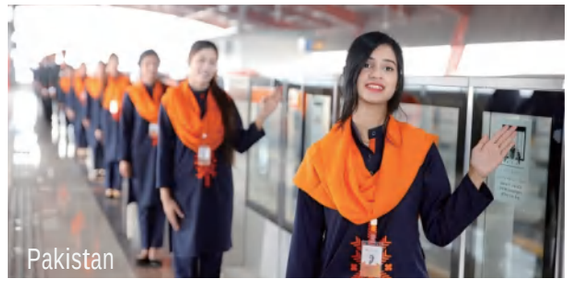
For overseas new rail transit projects, provide talent development and capability building services required for the transition from construction to operation. Main areas include:
1.Capacity building in rail transit project management and engineering construction management;
2.Multi-disciplinary interface coordination across construction, commissioning, and operations;
3.Planning of operational organizational structure, job classification systems, and staffing allocations;
4.Plans for personnel recruitment, training, and pre-service readiness;
5.Capacity building in integrated commissioning, trial operation, and opening preparation;
6.Emergency drills, operational regulation study, and opening condition assessment;
7.Project post-implementation review and transformation of construction experience into operational capabilities.

3.5.4 学习体系与组织能力建设
Learning System & Organizational Capability Building

面向希望建立持续人才培养能力的海外轨道交通企业，提供学习体系与组织能力建设服务。主要包括：
1. 企业培训战略及人才培养体系规划；
2. 岗位能力模型、资格标准和学习地图建设；
3. 分层分类课程体系、课程开发及知识产品建设；
4. 内部讲师、导师及专业专家培养；
5. 培训项目运营、学习评价和质量管理机制建设；
6. 企业大学或培训中心建设咨询；
7. 组织经验萃取、知识管理和最佳实践传播。

For overseas rail transit enterprises seeking to build sustainable talent development capability, provide learning system and organizational capability building services. Main areas include:
1. Enterprise training strategy and talent development system planning;
2. Job competency models, qualification standards and learning maps;
3. Tiered and categorized course systems, course development and knowledge product development;
4. Development of internal instructors, mentors and subject-matter experts;
5. Training program operations, learning evaluation and quality management mechanisms;
6. Consulting on corporate universities or training centers;
7. Organizational experience extraction, knowledge management and best-practice dissemination.

3.5.2 轨道交通专业能力发展
Rail Transit Professional Capability Development



巴基斯坦拉合尔橙线属地化运营人才培养

围绕海外线路安全稳定运营及属地员工独立上岗需求，结合岗位职责和现场设备条件，对行车组织、调度指挥、列车驾驶、车辆检修、通信信号、供电、车站客运、安全管理和应急处置等专业人员开展系统培养。

Localized operations talent development for the Lahore Orange Line in Pakistan.

To meet the needs of safe and stable overseas line operation and independent posting of local employees, systematic training was provided for personnel in the train operation organization, dispatching command, train driving, rolling stock maintenance, communications and signaling, power supply, station passenger services, safety management and emergency response, based on job responsibilities and on-site equipment conditions.

澳门轻轨特种作业持证培训项目案例

2026年先后承接高压电工与熔化焊接及热切割两个特种作业取证培训班，共31名技术骨干参训。严格对标国家考核大纲设计理论课程与实操训练，并针对澳门轻轨供电系统特点及铜管焊接作业需求量身定制教学内容。全员通过国家考证获得特种作业资格证，为澳门轻轨持证上岗与技能跃升提供了坚实支撑。

Case of Macao LRT special-operation certification training.

In 2026, two special-operation certification courses—high-voltage electrical work and fusion welding/thermal cutting—were successively undertaken, with 31 technical key staff participating. Theoretical courses and practical training were designed strictly in line with the national examination syllabus, and teaching content was tailored to the characteristics of the Macao LRT power supply system and copper pipe welding requirements. All participants passed the national examination and obtained special-operation qualification certificates, providing solid support for certified posting and skill upgrading at Macao LRT.

3.6 增值服务 Value-added Services

3.6.1 广告媒体经营
Advertising Media Development







提供轨道交通广告媒体资源商业化运营与价值提升服务。依托27年轨道交通全媒体广告媒体（OOH/DOOH）经营经验与品牌客户资源，输出广告经营管理体系与刊例定价标准，提供广告媒体资源规划、广告经营体系输出、招商代理与媒体销售、媒体形式创新与升级改造，通过全链条合作模式，助力业主实现广告资源价值最大化。

Provide commercial operation and value enhancement services for rail transit advertising media resources. Drawing on 27 years of full-media (OOH/DOOH) advertising operation experience and brand client resources, export advertising management systems and rate-card pricing standards, and provide advertising media resource planning, advertising management system export, leasing agency and media sales, media format innovation and upgrade/retrofit services. Through end-to-end cooperation, help owners maximize the value of advertising resources.

3.6.2 空间商业化经营
Commercial Business Operation







为海外轨道交通项目提供覆盖全业态、全周期的商业化经营与价值提升服务。涵盖车站商业、地下商业街、枢纽及场段综合体商业（TOD）、酒店公寓、社区商业等业态，输出商业经营管理体系与标准，提供前期策划与工程预留、商业规划与招商代理、运营管理与企划推广、资产管理与调改提升等全链条服务，助力业主实现商业空间价值最大化。

Provide full-format, full-cycle commercial operation and value enhancement services for overseas rail transit projects. Covering station retail, underground shopping streets, hub and depot complex commercial developments (TOD), hotels and apartments, and community commerce, the services export commercial management systems and standards provide early-stage planning and engineering reservation, commercial planning and leasing agency, operations management and marketing promotion, and asset management and adjustment/upgrade services, helping owners maximize commercial space value.



规划设计与咨询
PLANNING, DESIGN AND CONSULTANCY

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Construction Drawing Design/Detailed Engineering Design (DED)

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PROGRAM MANAGEMENT AND SYSTEM INTEGRATION



OPERATION AND MAINTENANCE(O&M)

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