



XVIII
World Water Congress
International Water Resources Association (IWRA)
Beijing, China | September 11-15, 2023



江西省梅江灌区工程

江西省梅江灌区工程 投融资机制创新实践

Innovative Practice of Investment
and Financing in Meijiang Irrigation
Project in Jiangxi Province



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江西省梅江灌区工程

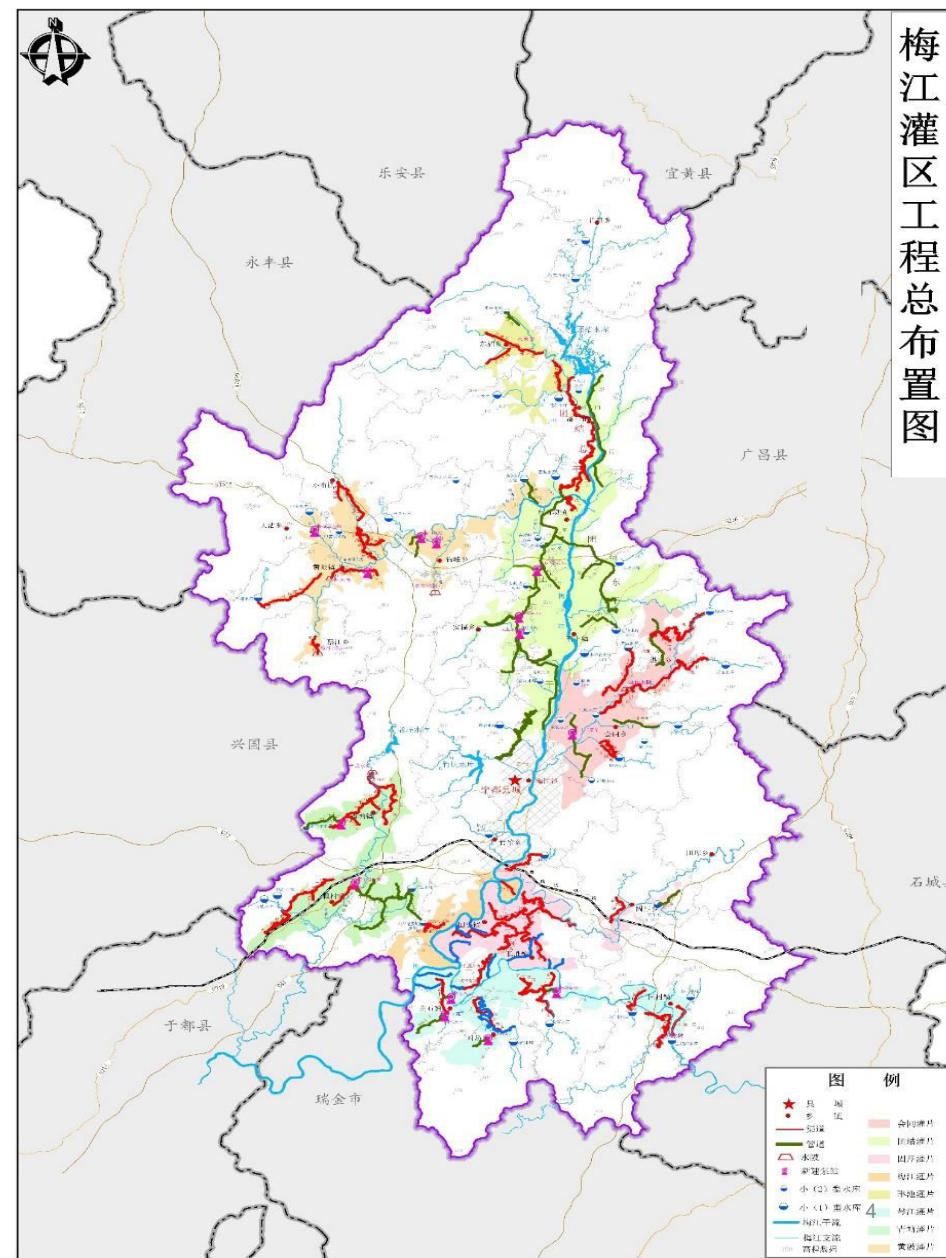
Part 1

工程概况 Project Overview



Project overview

- 设计灌溉面积**58万亩**，保障**79万人口**城乡居民生活供水
- The designed area of the project is **386 km²**, ensuring the water supply of urban and rural residents with a population of **790,000**.
- 项目总投资**42.29亿元**，总工期为**3年**。
- The total investment is **4.229 billion RMB** and construction period is **3 years**.
- 江西省首个山地丘陵地区大型灌区
- It is the first large-scale irrigation project in mountainous and hilly areas in Jiangxi Province.



Project overview

- 以水利工程设施、信息化管理、水生态保护与传承等三大工程体系为建设框架的大型灌区建设项目
- It covers Water conservancy engineering facilities, Information management system, Water ecological protection and inheritance.
- 主要建设内容分为提水工程14座，联通工程1条，水陂工程8座，骨干输水68条362.41km，骨干排水12条46.2km，建构筑物1188座
- It contains 14 water lifting projects, 1 water transmission project, 8 lifting barrages, 68 core water transmission project with length of 362 km, 12 core drainage project with length of 46km, 1188 structures in all.





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Part 2

梅江灌区设计思路 Design Idea

2.1 建设的必要性 Necessity

改善灌溉条件 保障赣南苏区粮食安全

新增粮食灌溉面积 **19.1 万亩**
粮食总产达到 **5.14 亿斤**

Ensuring food security

保障城乡供水 促进革命老区经济发展

新增城乡供水 **5519 万 m³**
总供水量达到 **9423 万 m³**
解决城乡 **79 万人**的用水问题

Improving the level of water supply

巩固脱贫攻坚 实现乡村高质量振兴

实现年均农业经济增益 **4.43 亿元**
农民人均增收 **1912 元**
GDP 增长 **5.34 亿元**
进一步巩固脱贫攻坚成果，缩小区域发展差距，不断保障和改善民生

Realizing the high-quality rural revitalization

2.1 建设的必要性 Necessity

引领山区发展

跨越式发展现代农业

灌渠管道化**发展**高效节水示范
调整农业结构**发展**特色产业示范
灌区**现代化**管理的示范
农业综合水价**改革**示范**现代化**管理的示范

Promoting the leapfrog development of modern agriculture

赓续红色血脉

贯彻落实《若干意见》

梅江灌区工程的建设可从根本上扭转宁都县农业建设和灌区**管理严重滞后**的局面
是水利部对口支援的**第一项重大水利工程**

Supporting the development of old revolutionary base areas

2.2设计的理念 Design Idea

建设以流域为单元大型灌区

large-scale irrigation project is building within a watershed

◆按照流域范围分析灌溉面积

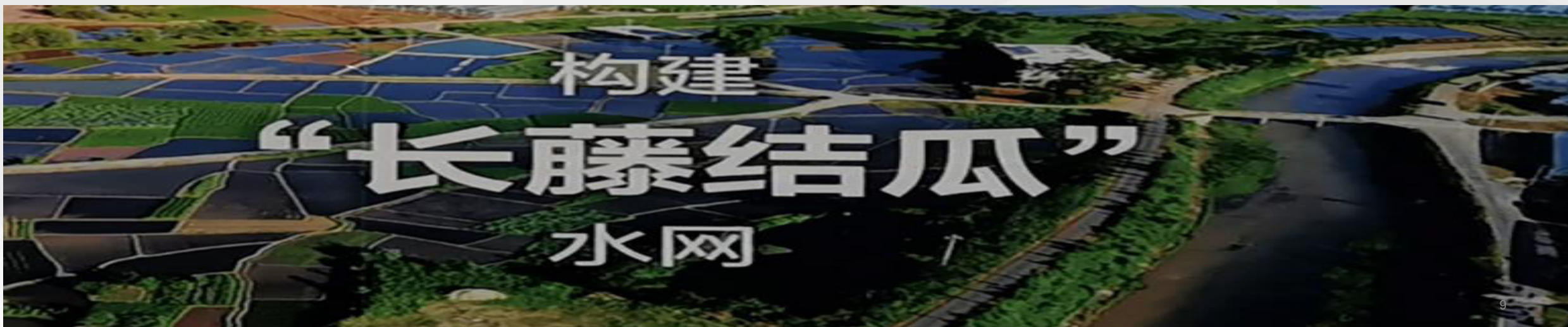
Area of the Irrigation is calculated by the watershed extent.

◆通过统一管理、发挥地缘优势

Geographical advantages were enhanced by unified management.

◆充分利用梅江贯穿南北及中小型水库、塘坝广泛分布的优势

Advantages of Meijiang River and these reservoirs around were used.



2.2设计的理念 Design Idea

灌区的界定 Radius of the Irrigation project

- 拓展坡度 25° 以下耕地、园地及林地等

Cultivated land, garden land and woodland less than the slope of 25° are containing in the large irrigation project

- 形成相对集中连片的山丘区大型灌区

Relatively connected hilly terrain are including in the large irrigation project





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江西省梅江灌区工程

Part 3

梅江灌区投融资模式 Investment and Financing



地方政府专项债

Vs

特许经营

Vs

政府与社会资本合作

Vs

工程总承包+运营

Vs

融资+工程总承包+运营

Local government bonds

Vs

Franchise

Vs

PPP

Vs

EPC+O

Vs

F+EPC+O

3.1 投融资模式及优缺点 Merits and Demerits

投融资模式	实施路径 Implementation Route	优点 Merits	缺点 Demerits
地方政府 专项债	地方政府为筹集建设公益性项目的资金而发行的一种专项债券	资金用途透明，可有效吸引社会资本投资；可享受一定的税收优惠或者政策扶持	期限通常为1到5年，相较于其他债券来说，期限较短
Local government t bonds	Special bond issued by a local government bonds for the construction of public welfare projects	Funds transparent, effectively attract private capital investment, enjoy certain tax incentives or policy support	The term is shorter, usually 1 to 5 years

3.1 投融资模式及优缺点 Merits and Demerits

投融资模式	实施路径 Implementation Route	优点Merits	缺点Demerits
特许经营	政府方通过竞争性程序选择特许经营者，并授权其负责项目的整体投资、建设、运营、移交等各项工作，并通过项目经营性收入方式获得投资回报	收益来源具有排他性和独占性，具有一定的垄断性；不履行“两评一案”、政府内部决策、申报“入库”等程序，加快项目推进流程	灌溉收益，供水收益不能覆盖项目投资及合理回报资金，需要整合全县其他相关可以特许经营授权的资源
Franchise	Government selects franchisees through competitive process, authorize the overall investment, construction, operation, handover of the project, gain return on investment through project operating income	The source of income is exclusivity, have certain degree of monopoly, Accelerate the project advancement process	Irrigation revenue, water supply revenue cannot meet reasonable return funds, More franchise authorizations needed

3.1 投融资模式及优缺点

投融资模式	实施路径 Implementation Route	优点Merits	缺点Demerits
政府与社会资本合作	通过政府采购的形式与中标单位组建项目公司，负责项目的筹资、建设、经营、移交，并通过项目经营性收入方式获得投资回报，还可获得通过政府扶持所转化的效益	引进社会资本方的先进经验和技朧；可以调动社会资金，缓解国家财政政策压力	项目投资大、运转周期长，增加了其不确定性和投资风险；如政府采购规则不完善，可能存在透明度、竞争等涉及公共资源使用的问题
PPP	The government procurement and the winning bidder shall establish the project company	Introduce advanced experience and technology from private capital, Ease the financial pressure on the government	Uncertainty and investment risk, Government procurement rules not sound causes vulnerabilities in public resources

3.1 投融资模式及优缺点

投融资模式	实施路径 Implementation Route	优点Merits	缺点Demerits
工程总承包+运营	项目投融资责任由政府方承担，承包方负责项目设计、采购、施工以及运营	政府方在项目建管、运营过程中拥有更多主动权和决策权	政府方需要负责筹集资金并承担资金成本，资金筹集的压力较大
EPC+O	The responsibility for project investment and financing shall be borne by the government, contractor is responsible for the design, procurement, construction and operation of the project	Government has more initiative and decision-making power in the process of project construction, management and operation	Government to raise funds more pressure

3.1 投融资模式及优缺点

投融资模式	实施路径 Implementation Route	优点Merits	缺点Demerits
融资+工程总承包+运营	通过公开招标选定社会投资人，中标社会投资人与平台公司组建项目公司或提供融资服务，由项目公司负责该区域的投融资和建设运营，施工部分由具备施工能力的社会投资人自行实施	社会投资人根据项目进展情况，分次进行资金筹集，实际降低融资成本	合作期一般不超过15年，政府方的资金支付压力大；需要整合其他资源进行置换，该操作形式存在合规性风险
F+EPC+O	Public tenders select social capital person, Private investors and platform companies set up project companies or provide financing services, project company is responsible for investment, financing, construction and operation, private investor with construction capabilities is responsible for the construction part	Reduce financing costs	Government capital pressure is high, compliance risk



1. 规划阶段 Planning 2020.8—2021.1

尚未开展投融资模式分析。

Financing model analysis has not yet been conducted.

2. 可研、初设阶段 Feasibility study & Preliminary design 2021.1—2022.4

前期拟采用“上级补助+地方政府配套”模式实施。**后期**由于资本金缺口较大，开始探索PPP、专项债等投融资模式。

Investment and financing plan such as PPP and special bonds were considered.

3.2 梅江灌区投融资模式变化过程 Change process

3.PPP模式确定阶 PPP investment plan

2021年初，基本确定使用PPP模式推动灌区融资。

In early 2021, attempt to utilize the PPP plan .

2021年12月，签署《共推长江经济带高质量发展全面战略合作协议》，确定骨干工程采用PPP模式开展融资。

2021.12, “Jointly Promoting the Comprehensive Strategic Cooperation Agreement of the High-Quality Development of the Yangtze River Economic Belt” was signed, the PPP plan was decided to used in the key project.

3.2 梅江灌区投融资模式变化过程 Change process

3.PPP模式确定阶 PPP investment plan

2022年7月，纳入全国PPP项目库。此时资金构成为中央预算内投资、省级配套、县级投资、政策性基金为主，剩余资金由社会资本方筹集。

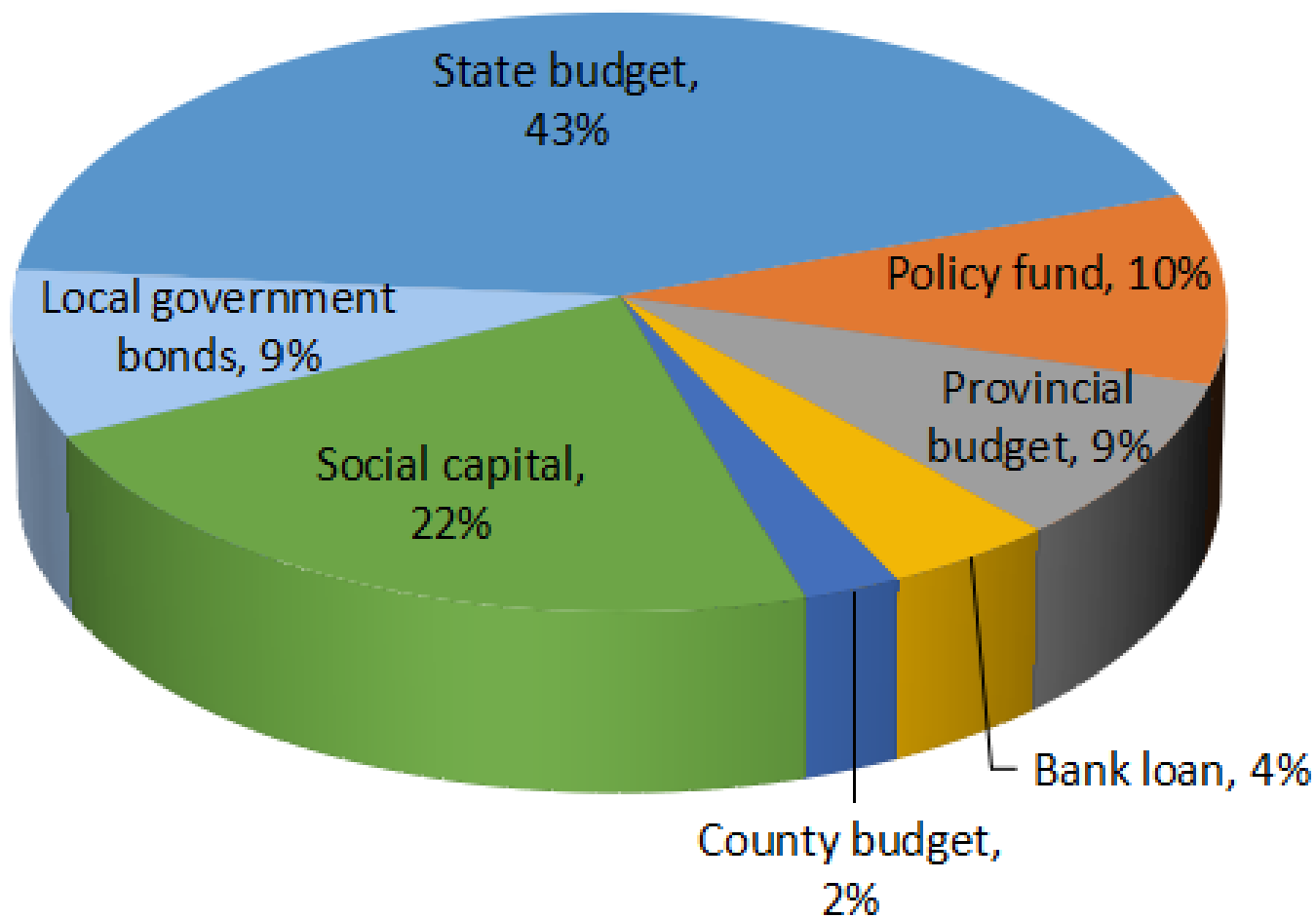
2022.7, the PPP plan agreed by the Ministry of Finance. Funding structure is mainly composed of state budget, provincial budget, county budget, the remaining funds would supported by social capital.

2022年6月至2023年1月，农发行发行了政策性基金，投融资模式得到进一步优化。

2022.6—2023.1, the policy fund was issued by Agricultural Development Bank of China. Investment and financing plan was further improved

3.3 项目资金构成 Funding composition

Percentage of different funds



Amount of different funds

Source of funds	Amount of funds (million RMB)
中央预算内投资	1820
政策性金融工具	437
省级财政资金	370
银行贷款	184
县级财政	104
社会资本	933
地方政府专项债	381
Total	4229

政府方出资金占比78% 社会资金占比22%

Government funding 78% , Social funding 22%



1. 多渠道资金打包拼盘

Mobilization of multi-channel capitals



- 工程总投资42.29亿元，由中央预算内投资资金、省级配套资金、PPP模式筹集社会资本以及专项债、政策性基金等7个不同性质资金构成。
- The total investment of the project is 4.229 billion RMB, which consists of investment funds from the State budget, Provincial budget, Social capital, Local bonds, Policy funds, and other funds, 7 sources in all.

2. 统筹考虑骨干与田间工程

Coordination of the key and field projects

- 实现骨干工程与田间工程“同步设计、同步建设、同步运营”
- Design, construction, and operation are carried out simultaneously between key and field projects.
- 打通工程“最后一公里”，实现运行管理“一张网”，确保工程发挥效益。
- The completion of all tasks will ensure comprehensive operation and management, and guarantee the project's effective.



3.充分体现参建单位权责利对等

Equal rights, responsibilities, and benefits distribution among participating units



- 结合项目资金来源、项目管理要求将工程划分为A、B、C三个部分，充分保障各部分资金安全以及各出资方的权利和利益。
- The project is divided into three sections A, B, and C based on the source of funding and management, ensuring the full safety of funds within each section, as well as the rights and interests of each funder



4.积极引入社会资本

Incorporating social capital



长江生态环保集团有限公司
Yangtze Ecology and Environment Co., Ltd.

- 引入长江生态环保集团，充分发挥社会资本的**资金实力、专业力量、统筹能力**等方面的优势，实现工程“**投资-建设-运营-服务一体化**”
- Incorporating Yangtze River Ecological and Environmental Protection Group, to integrate the investment, construction, operation, and service.
- 向社会资本方配套**1000MW新能源资源**，超额收益作为可行性缺口补助补偿梅江灌区项目。
- Providing 1000MW of new energy resources to social investors, the excess earnings can compensate for the project fund shortfall.



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Part 4

梅江灌区监管模式 Regulatory Plan



编制资金管理方案
Fund Management Plan

兼顾多重资金属性，强化建设资金全流程监管
Considering the multiple fund attributes, strengthening the whole-process supervision of construction funds.

加强绩效管理
Performance Management

强化绩效考核，履约监管，坚持按效付费
Enhance performance examine and contractual monitoring, project payment should be based on the actual results.

长期有效的运管方案
Operation Plan

建立工程运行长效管理机制和水资源管理制度
Establish a sustainable management mechanism for project operations, and water resource management system, to resolve issues from facilities and distribution of water resource.

4.2 梅江灌区建管模式的创新

Innovation in the construction and management



建设管理架构

Construction and Management framework

将江西省梅江灌区工程PPP项目划分为A、B、C三个部分，采用建设-运营-移交（BOT）+建设管理（PM）+委托运营（O&M）模式运作

The PPP project is divided into three parts which is using the construction and management model of BOT, PM, O&M.

4.2 梅江灌区建管模式的创新

Innovation in the construction and management



项目公司

Project company

政府与社会资本方联合成立项目公司，负责合作期内资产的占有、运营、管理和维护并收取相应费用。

Project company was established by local government and social capital jointly, which holds the operational rights to possess, operate, manage, and maintain the assets. It is also entitled to collect corresponding fees.

4.2 梅江灌区建管模式的创新

Innovation in the construction and management



全过程工程咨询

Full Life-cycle Engineering Consultancy

引入全过程工程咨询单位，对项目实施全过程、全方位、全要素监管的全过程工程咨询服务。全过程工程咨询服务内容包含全过程项目管理咨询、全过程造价咨询、全过程工程监理、BIM咨询及第三方建设期绩效考核五个板块。

Introduce a full lifecycle engineering consultancy, providing comprehensive, all-around, and all-elemental supervision services for the entire project implementation.



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Thank you

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