

ENGINEERING AND CONSTRUCTION  
GONGCHENG YU JIANSHE

ISSN 1673-5781  
CN 34-1296/N

# 工程与建设

第36卷 第2期

Vol.36 No.2

2022年4月

中国核心期刊(遴选) 《中国学术期刊(光盘版)》全文收录期刊 《万方数据——数字化期刊群》入编期刊  
《中文科技期刊数据库》来源期刊 《书生数字期刊》入编期刊 中国报刊订阅指南信息库收录期刊  
《超星期刊域出版系统》全文收录期刊



ISSN 1673-5781



广州孚达保温隔热材料有限公司

# 工程与建设

第 36 卷第 2 期

(总第 140 期)

2022 年 4 月

[期刊基本参数] CN 34-1296/N \* 1987 \* b \* A4 \* 316 \* zh \* P \* ¥20.00 \* 1 000 \* 102 \* 2022-4

## 目次

### ❖ 研究与探索

- 我国预制装配式建筑的现状与发展..... 孙业珍(285)
- 适用于安徽省装配式混凝土建筑初级发展阶段地区的解决方案..... 刘继朝(287)
- 公路交通标志标识优化设置研究..... 熊 雄(292)
- 水工结构工程与三维可视化技术研究..... 袁凤娟(295)
- 地表水取水水源论证分析  
——以临沂城供水工程为例..... 类 潇(297)

### ❖ 建筑与规划

- 以人为本理念下昆明城市支路建设分析..... 李松龙(299)
- 生态城市建设背景下绿道规划策略研究  
——以安阳主城区为例 ..... 李先富, 刘翠焕(301)
- 信息时代背景下的土地智能规划和应用..... 张玉美(306)

### ❖ 勘察与测量

- 房产测绘技术与测绘质量的控制分析..... 陈 磊(308)
- 土地和房地产测量中的信息化测绘技术分析..... 刘雄恒(310)
- 土地测绘技术及质量控制研究..... 孙 亮(312)
- 水利工程测量中无人机航空摄影测量技术运用分析..... 王小力(314)
- 数字化测绘技术在建筑工程测量中的应用分析..... 杨宁宁(316)
- 无人机航测技术在铁路带状地形测绘中的应用研究..... 郑其立(318)
- 岩土勘察技术在建筑工程中的应用分析..... 李 明(320)
- 塞内加尔高速公路地下空洞物探研究 ..... 邱 鑫, 陈长缨(323)
- GIS 图层在空间数据处理管理与分析中的作用 ..... 张保君(327)
- 岩土工程桩基施工与勘察分析..... 史 超(330)

### ❖ 工程设计

- 装配式钢板组合梁腹板加劲肋设计分析 ..... 杨 凯, 刘婉玥(333)
- 探究地域文化与地铁建筑的融合设计..... 史喆飞(336)
- 复杂交通枢纽地铁站施工期间道路工程交通改善设计研究  
——以杭州地铁 6 号线火车东站站为例 ..... 周艳昕, 朱潇赢(339)
- 妇幼保健院工程特殊给排水及消防系统设计分析..... 冯雅男(343)
- 建筑施工图审查及设计中常见问题分析..... 吕 健(345)
- 山区公路路线设计与质量控制研究..... 祁荣欣(348)
- 地域文化在城市景观设计中的应用与研究..... 张永涛(351)

### ❖ 地基与基础

- 综合管廊大断面异形基坑稳定性与支护技术研究 ..... 刘 阳, 皮亚东(354)

格构柱在孟加拉 BRAC 大学基坑支护体系中的应用分析 .....	韩春文, 任智, 袁良, 许明亮(358)
膨胀土地层深基坑支护结构设计优化分析 .....	郑磊(363)
沿海地区砂桩堆载预压路基处理技术研究 .....	张燕礼(369)
上海市中心城区建筑工程深基坑施工技术分析 .....	徐森(372)
水利工程软土地基勘察及处理技术 .....	郭万鹏, 冯祯辉, 曹风旭, 黎昱(375)
水库大坝左坝肩边坡变形破坏机制及整治对策探讨 .....	刘典鹏(377)
高层建筑施工中基坑支护施工技术设计与应用实践 .....	黄曼(380)
市政工程特殊路基施工现场部署与施工方案设计分析 .....	黄传志(383)

## ❖ 建造技术

房屋建筑机电安装工程的质量通病与防治对策 .....	王超凡(386)
承插型盘扣式脚手架节点自锁性能改进问题探讨 .....	李玉宾(388)
火力发电厂启动锅炉与液化天然气站相结合技术应用分析 .....	王晓涛, 杨倩, 刘进海(390)
框架梁纵筋与劲性柱连接施工技术分析 .....	韩春文, 任智(392)
钢结构建筑施工技术要点研究 .....	姜伟(396)
地铁车站型钢柱施工及其垂直度合格率优化 .....	李东原(398)
响洪甸水库发电厂房装修改造的实施与建议 .....	胡子俊(401)
支腿自翻式货梯井道操作平台在多层钢结构库房施工中的应用 .....	任玉入(403)
石灰改良膨胀土路基施工技术研究 .....	郑磊(406)
改性沥青混凝土路面施工技术在市政道路工程中的应用 .....	罗巧峰(409)
高瓦斯隧道施工安全风险控制研究 .....	张晓利, 宋家利, 石志强(412)
微台阶开挖方法在大断面黄土隧道施工中的应用分析 .....	张超(415)
QC 方法在城际轨道路缘石安装中的应用研究 .....	马秀通, 高暖, 董继伟(421)
市政道路改造工程沥青路面施工质量控制研究 .....	陈永峰(423)
路面现场热再生施工技术在高速公路养护中的应用 .....	刘伟(426)
公路桥梁施工中的质量控制方法研究 .....	李莹(428)
预应力混凝土 T 梁施工过程中的质量控制方法研究 .....	董贤芸, 卢怀友(431)
浅埋偏压软弱围岩隧道中短台阶的施工技术 .....	胡艺竞(434)
公路桥梁施工中预应力技术的应用 .....	王起龙(437)
西非内河航道入海口施工及维护期疏浚与回淤分析 .....	孙小康, 刘传磊(440)
建筑电气施工安装技术及质量管控方式研究 .....	李才珍(444)
富水岩层地区大型锚碇地连墙施工关键技术研究 .....	郑华凯, 阮梦飞, 唐俊(447)
房建工程中的高支模施工技术应用研究 .....	李雨曦(451)
基于智慧城市理论浅析 BIM 技术在市政园林景观施工中的应用 .....	梁佑华(454)
BIM 技术在景观园林信息化施工管理中的应用研究 .....	白铭宇, 席梦旭(457)
沿海深淤盐碱地景观绿化施工方案研究 .....	王伟, 童辉, 赵德志(460)
城市道路给排水施工非开挖技术的应用分析 .....	李忠武, 原少宾(463)
山区农村饮水安全工程施工方案研究 ——以安徽省祁门县农村饮水安全巩固提升工程为例 .....	董红哲(466)
高速铁路隧道爆破施工环境影响控制技术研究 .....	刘建成(469)
铁路大跨度下承式钢管混凝土系杆拱桥施工技术分析 .....	何杰(472)

## ❖ 试验与检测

某高架桥梁下部结构抗震分析与计算 .....	付劲松(478)
桥梁承台大体积混凝土施工温控数值模拟研究 .....	李健, 刘爽(482)
基于静载试验的 I 型钢—混组合梁桥的荷载横向分布研究 .....	张国平, 张钦宇, 朱洲洲(485)

武汉江汉九桥工程对江汉航道通航的影响评价 .....	阮伟, 李永峰(490)
盾构施工对建筑物桩基影响的数值分析 .....	严明, 豆叶青, 匡星晨(492)
某沿河大道工程防洪影响评价分析 .....	胡杨生(495)
某单桩轴向抗压静载荷试验钢结构承载能力计算分析 .....	江宇(498)
早期双曲拱桥现状结构受力性能分析 .....	查文斗(500)
水下管汇工厂验收测试(FAT)关键技术研究 .....	陈欣, 肖德明, 赵瑞云, 赵晓磊, 单晓亮(503)
水库大坝工程运行过程中的安全检测及其策略 .....	汤子隆(507)

## ❖ 建筑材料

不同季节下大体积混凝土温度及应力研究 .....	潘云富, 冯伟, 施勇, 金鹏举, 宋东升, 胡忠存(510)
混凝土在交通工程土建施工中的应用技术分析 .....	苏荣兴(514)

## ❖ 工程管理

浅谈工程建设成本控制审核的重点及应对措施 .....	邓婷(517)
乡镇数字化档案管理存在的问题及对策研究 .....	蒋淑敏(519)
基于层次分析法的剧院工程施工风险因素识别研究 .....	张明明, 张鑫(521)
破旧立新:新设计助力 IPD 项目增值 .....	赵全, 于硕硕(526)
PPP 项目中工程变更对竣工结算的影响及策略分析 .....	何孔荣, 王富武, 赵承遗(529)
IPD 模式下施工方案数字化应用分析 .....	孔德宽, 李伟, 于建业(531)
档案信息化管理工作存在的问题及解决措施分析 .....	罗玉红(533)
数字化转型中的项目管理新探索 .....	高翠, 于建业, 张昌胜(535)
基于节能降耗的电力计量技术应用探究 .....	朱昭锦, 曹帅(537)
造价在建筑成本管理过程中的控制措施分析 .....	戎丽花(540)
智慧社区智能化管理方案研究 ——以百色学院棚改项目为例 .....	韦纯(544)
电力计量误差产生的原因与改进措施探讨 .....	李超, 吕伟(547)
基于 BIM 的工程造价精细化管理策略分析 .....	李莉(550)
可视化技术在推进施工安全管理精益化中的应用分析 .....	于硕硕, 宋纯飞, 何亚蕾(552)
浅谈大跨度大空间建筑火灾扑救现场安全管理 .....	张树龙(555)
机场场道工程二次经营工作要点探讨 .....	常丽华(558)
浅谈如何做好工程建设全过程成本管理工作 .....	马秀玲(562)
工程造价咨询企业参与全过程造价管理策略分析 .....	孔伟(565)
道路低影响开发设施费效分析及经济评价研究 .....	李晓希(568)
水利工程施工管理的质量控制措施探究 .....	朱琛(571)
装配式建筑施工安全管理若干要点研究 .....	崔欢欢(574)
建筑工程档案管理的重要性及其强化策略分析 .....	徐雅楠(576)
EPC 承包条件下业主项目管理模式分析 .....	张林(579)
高速公路交通安全设施工程造价审查探析 .....	韦萍(583)
建筑工程施工现场安全管理工作分析 .....	王洪选(586)
码头工程监理工作的要点分析 .....	冯伯滨(589)
版权声明 .....	(322)
敬告作者 .....	(326)
投稿须知 .....	(536)

## CONTENTS

### Research and Discussion

- Present situation and development of prefabricated buildings in China ..... SUN Ye-zhen(285)  
Solutions applicable to the areas in the primary development stage of prefabricated concrete buildings in Anhui Province  
..... LIU Ji-chao(287)  
Study on optimal setting of highway traffic signs ..... XIONG Xiong(292)  
Research on hydraulic structure engineering and 3D visualization technology ..... YUAN Feng-juan(295)  
Demonstration and analysis of surface water intake source—Taking Linyi City water supply project as an example  
..... LEI Xiao(297)

### Building and Planning

- Analysis on the construction of urban branch roads in Kunming under the concept of people-oriented ..... LI Song-long(299)  
Research on greenway planning strategy under the background of eco-city construction—Take Anyang's main urban area as  
an example ..... LI Xian-fu, LIU Cui-huan(301)  
Land intelligent planning and application in the information age ..... ZHANG Yu-mei(306)

### Reconnaissance and Survey

- Control analysis of real estate surveying and mapping technology and surveying and mapping quality ..... CHEN Lei(308)  
Analysis of informatization surveying and mapping technology in land and real estate surveying ..... LIU Xiong-heng(310)  
Research on land surveying and mapping technology and quality control ..... SUN Liang(312)  
Application analysis of UAV aerial photogrammetry technology in hydraulic engineering survey ..... WANG Xiao-li(314)  
Application analysis of digital surveying and mapping technology in architectural engineering survey ..... YANG Ning-ning(316)  
Application of UAV aerial survey technology in railway strip terrain mapping ..... ZHENG Qi-li(318)  
Analysis on the application of geotechnical investigation technology in building engineering ..... LI Ming(320)  
Geophysical exploration of underground caverns of senegalese highway ..... QIU Xin, CHEN Chang-ying(323)  
The role of GIS layer in spatial data processing, management and analysis ..... ZHANG Bao-jun(327)  
Geotechnical engineering pile foundation construction and investigation analysis ..... SHI Chao(330)

### Engineering Design

- Design and analysis of Web stiffener of assembled steel plate composite beam ..... YANG Kai, LIU Wan-yue(333)  
Explore the integration design of regional culture and subway architecture ..... SHI Zhe-fei(336)  
Study on traffic improvement design of road engineering during construction of metro station with complex traffic hub  
—Taking East station of Hangzhou Metro Line 6 as an example ..... ZHOU Yan-xin, ZHU Xiao-ying(339)  
Design and analysis of special water supply, drainage and fire control system in mch hospital project ..... FENG Ya-nan(343)  
Analysis of common problems in construction drawing examination and design ..... LYU Jian(345)  
Research on route design and quality control of Mountain Highway ..... QI Rong-xin(348)  
Application and research of regional culture in urban landscape design ..... ZHANG Yong-tao(351)

### Foundation and Basement

- Study on stability and support technology of large section special-shaped foundation pit of comprehensive pipe gallery  
..... LIU Yang, PI Ya-dong(354)  
Application analysis of latticed columns in foundation pit support system of BRAC University of Bangladesh  
..... HAN Chun-wen, REN Zhi, YUAN Liang, XU Ming-liang(358)  
Optimization analysis of supporting structure design of deep foundation pit in expansive soil layer ..... ZHENG Lei(363)  
Study on treatment technology of sand pile preloading Subgrade in coastal area ..... ZHANG Yan-li(369)  
Analysis on construction technology of deep foundation pit in Shanghai central urban construction project ..... XU Sen(372)  
Investigation and treatment technology of soft soil foundation in Hydraulic Engineering  
..... GUO Wan-peng, FENG Zhen-hui, CAO Feng-xu, LI Yu(375)

Discussion on deformation and failure mechanism and treatment countermeasures of left abutment slope of reservoir dam .....	LIU Dian-peng(377)
Design and application of foundation pit support construction technology in high-rise building construction .....	HUANG Man(380)
Construction site deployment and construction scheme design of special subgrade of municipal engineering —taking a road project as an example .....	HUANG Chuan-zhi(383)
<b>Construction Technology</b>	
Common quality problems and Prevention Countermeasures of building electromechanical installation engineering .....	WANG Chao-fan(386)
The discussion on the improvement of self-locking performance of spigot-type scaffold joints .....	LI Yu-bin(388)
Application analysis of combined technology of fossil-fuel power station boiler and liquefied natural gas station .....	WANG Xiao-tao, YANG Qian, LIU Jin-hai(390)
Construction technology of connection between longitudinal reinforcement of frame beam and rigid column .....	HAN Chun-wen, REN Zhi(392)
Research on key points of steel structure construction technology .....	JIANG Wei(396)
Construction of steel reinforced concrete columns in subway station and optimization of qualified rate of verticality .....	LI Dong-yuan(398)
Implementation and suggestions on renovation of power house of Xianghongdian reservoir .....	HU Zi-jun(401)
Application of outrigger self turning cargo elevator hoistway operation platform in the construction of multi-storey steel structure warehouse .....	REN Yu-ru(403)
Study on construction technology of lime improved expansive soil subgrade .....	ZHENG Lei(406)
Application of modified asphalt concrete pavement construction technology in municipal road engineering .....	LUO Qiao-feng(409)
Study on safety risk control of high gas tunnel construction .....	ZHANG Xiao-li, SONG Jia-li, SHI Zhi-qiang(412)
Application analysis of micro-step excavation method in large section Loess Tunnel Construction .....	ZHANG Chao(415)
Research on application of QC method in installation of kerb stone of intercity track .....	MA Xiu-tong, GAO Nuan, DONG Ji-wei(421)
Study on construction quality control of asphalt pavement in municipal road reconstruction project .....	CHEN Yong-feng(423)
Application of pavement thermal regeneration construction technology in highway maintenance .....	LIU Wei(426)
Study on quality control method in Highway Bridge Construction .....	LI Ying(428)
Study on quality control method in construction of prestressed concrete T-beam .....	DONG Xian-yun, LU Huai-you(431)
Construction technology of short steps in shallow buried tunnel with unsymmetrical pressure and weak surrounding rock .....	HU Yi-jing(434)
Application of prestress technology in highway bridge construction .....	WANG Qi-long(437)
Analysis of dredging and siltation during construction and maintenance of the estuary of the inland river in West Africa .....	SUN Xiao-kang, LIU Chuan-lei(440)
Research on building electrical construction and installation technology and quality control mode .....	LI Cai-zhen(444)
Study on key construction technology of large anchor diaphragm wall in water rich rock stratum area .....	ZHENG Hua-kai, RUAN Meng-fei, TANG Jun(447)
Application of high formwork construction technology in housing construction engineering .....	LI Yu-xi(451)
Application of BIM technology in municipal landscape construction based on smart city theory .....	LIANG You-hua(454)
Study on the application of BIM technology in landscape information construction management .....	BAI Ming-yu, XI Meng-xu(457)
Study on construction scheme of landscape greening in coastal saline-alkali land with deep deposition .....	WANG Wei, TONG Hui, ZHAO De-zhi(460)
Application analysis of Trenchless Technology in urban road water supply and drainage construction .....	LI Zhong-wu, YUAN Shao-bin(463)
Study on the construction scheme of rural drinking water safety project in mountainous area—Taking the strengthening and upgrading project of rural drinking water safety in Qimen county, Anhui Province as an example .....	DONG Hong-zhe(466)
Study on environmental influence control technology of high-speed railway tunnel blasting construction .....	LIU Jian-cheng(469)
Analysis on construction technology of through concrete-filled steel tube tied arch bridge with long span .....	HE Jie(472)
<b>Test and Inspection</b>	
Seismic analysis and calculation of substructure of an elevated bridge .....	FU Jin-song(478)

Numerical simulation of temperature control in mass concrete construction of bridge bearing platform	LI Jian, LIU Shuang(482)
Study of transverse load distribution based on static load test of I-section steel-concrete composite girder	ZHANG Guo-ping, ZHANG Qin-yu, ZHU Zhou-zhou(485)
Impact assessment of navigable waterway of The Ninth Bridge Crossing Hanjiang River in Wuhan	RUAN Wei, LI Yong-feng(490)
Numerical analysis of influence of shield construction on building pile foundation	YAN Ming, DOU Ye-qing, KUANG Xing-chen(492)
Flood control impact evaluation analysis of a riverside avenue project	HU Yang-sheng(495)
Calculation and analysis of bearing capacity of steel structure in axial compression static load test of a single pile	JIANG Yu(498)
Analysis on mechanical behavior of existing structure of early double-curved arch bridge	ZHA Wen-dou(500)
Research on key technology of factory acceptance test (fat) of underwater manifold	CHEN Xin, XIAO De-ming, ZHAO Rui-yun, ZHAO Xiao-lei, SHAN Xiao-liang(503)
Safety detection and its strategy in the operation of reservoir dam project	TANG Zi-long(507)
<b>Building Material</b>	
Study on temperature and stress of mass concrete in different seasons	PAN Yun-fu, FENG Wei, SHI Yong, JIN Peng-ju, SONG Dong-sheng, HU Zhong-cun(510)
Application technology analysis of concrete in civil construction of traffic engineering	SU Rong-xing(514)
<b>Engineering Management</b>	
On the key points and countermeasures of project construction cost control audit	DENG Ting(517)
Research on the existing problems and countermeasures of digital archives management in villages and towns	JIANG Shu-min(519)
Research on identification of risk factors in theater engineering construction based on analytic hierarchy process	ZHANG Ming-ming, ZHANG Xin(521)
Destroy the old and establish the new:New design helps IPD project add value	ZHAO Quan, YU Shuo-shuo(526)
Impact of project change on completion settlement in PPP project and strategy analysis	HE Kong-rong, WANG Fu-wu, ZHAO Cheng-yi(529)
Application analysis of construction scheme digitization under IPD mode	KONG De-kuan, LI Wei, YU Jian-ye(531)
Analysis on the existing problems and solutions of archives information management	LUO Yu-hong(533)
New Exploration of project management in digital transformation	GAO Cui, YU Jian-ye, ZHANG Chang-sheng(535)
Research on the application of power metering technology based on energy saving and consumption reduction	ZHU Zhao-jin, CAO Shuai(537)
Analysis on control measures of construction cost in the process of construction cost management	RONG Li-hua(540)
Research on intelligent management scheme of smart community—Taking the shed reform project of Baise University as an example	WEI Chun(544)
Discussion on the causes of power metering error and its improvement measures	LI Chao, LYU Wei(547)
Analysis of fine management strategy of project cost based on BIM	LI Li(550)
Application analysis of visualization technology in promoting lean construction safety management	YU Shuo-shuo, SONG Chun-fei, HE Ya-lei(552)
Discussion on safety management of fire fighting site of long-span and large space buildings	ZHANG Shu-long(555)
Discussion on the key points of airport secondary operation	CHANG Li-hua(558)
How to do a good job of cost management in the whole process of engineering construction	MA Xiu-ling(562)
Analysis on the strategy of engineering cost consulting enterprises participating in the whole process of cost management	KONG Wei(565)
Study on cost-effectiveness analysis and economic evaluation of road low impact development facilities	LI Xiao-xi(568)
Research on quality control measures of water conservancy project construction management	ZHU Chen(571)
Research on some key points of construction safety management of prefabricated buildings	CUI Huan-huan(574)
Analysis on the importance and strengthening strategy of construction project archives management	XU Ya-nan(576)
Analysis on the owner's project management mode under the condition of EPC Contract	ZHANG Lin(579)
Analysis on cost examination of expressway traffic safety facilities	WEI Ping(583)
Analysis on safety management of construction site	WANG Hong-xuan(586)
Analysis on key points of wharf engineering supervision	FENG BO-bin(589)