

ENGINEERING AND CONSTRUCTION  
GONGCHENG YU JIANSHE

ISSN 1673-5781  
CN 34-1296/N

# 工程与建设

2020年第4期

第34卷 第4期  
Vol.34 No.4

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



# 工程与建设

第 34 卷第 4 期

(总第 130 期)

2020 年 8 月

[期刊基本参数] CN 34-1296/N \* 1987 \* b \* A4 \* 216 \* zh \* P \* ¥20.00 \* 1 000 \* 75 \* 2020-8

## 目 次

### ◆ 研究与探索

- 建筑施工企业开展建筑垃圾资源化利用的前景分析 ..... 刘壮, 阳栋, 杨子汉, 李水生, 侯亚康, 习智琴(573)  
浅析淮河新河流域分洪与排涝 ..... 范士勇(577)  
基于 AHP-熵权法与多级可拓的交通运输经济适应性研究 ..... 王林, 刘冠宇(580)  
桐城综合客运枢纽站交通影响评价 ..... 方芳, 朱义奎(584)  
南淝河航道(合肥新港—312 国道)段桥梁通航净高专项研究 ..... 尤兴涛, 姜玉波(588)  
给水管网健康模糊综合评价研究 ..... 张圆(591)  
基于 Pathfinder 紧急情况下地下商场内行人疏散的模拟与实验对比研究 ..... 王艳(594)  
温度对工程建设的影响与控制 ..... 赵泽淘, 张涛, 王辉, 苏瑞同(597)  
地下空间暨人防工程两规融合编制之安徽探索 ..... 司惠超(599)

### ◆ 建筑与规划

- 灵璧县水资源布局规划优化研究 ..... 陈得阳, 陈艳(603)  
合肥国际空港国际小镇生态水系统构建 ..... 周妍(607)  
基于精确交通感知的老城交通改善规划方法研究  
——以铜陵市老城区为例 ..... 袁春岭(609)  
70 年城乡住宅变迁与发展研究 ..... 齐若宁(612)  
新时期合肥市土地储备规划编制方法与思考 ..... 司惠超(615)

### ◆ 工程设计

- 老路改造设计中总体交通组织与慢行过街系统优化方案简析 ..... 汪浩, 谢敏(619)  
亳州市魏武大道、光明路节点立交选型研究 ..... 张德豪(622)  
城市高架下穿高压架空线的设计与施工 ..... 岳仁辉, 樊星辰(625)  
虚拟现实技术在房屋规划设计中的应用研究 ..... 严祥强(627)  
建筑工程错层结构设计若干问题思考 ..... 张宗霏(629)  
市政道路与既有高速公路交叉时“路改桥”设计浅谈 ..... 曹二星, 胡清和(631)  
BIM 技术在工业建筑三维协同设计中的应用 ..... 李仲元, 郭跃, 孔宪扬(634)

浅析涵洞的平立面设计	李静静，周挺(636)
高速公路空心板桥梁拼宽方案研究	李涛，胡清和(638)
武汉东四环线北湖枢纽互通立交方案设计	孙洪德，易昕(641)
衡重式码头在安徽内河港口中的应用	张海民，王志勇，毛成(643)
三种地下车库楼盖结构的对比分析	张学治(646)
地铁区间近距离下穿既有运营线区间隧道设计分析	王根，王林(650)
淮河航道临淮岗至洪山头段跨河桥梁通航净空尺度标准研究	孙曙光(653)
浅析月潭水库发电引水建筑物选型设计比选	胡伽(655)
大跨径混合梁独塔斜拉桥设计	施文杰，梁长海，颜心园(657)
某大型设备基础过火后的拆除修复设计	潘青松，李志强，唐云鹏，杨洪瑞(660)
基于美国规范的印尼组合梁桥设计验算浅析	殷亮，胡小康(663)
金牛洞古采矿遗址水患病害及防治技术研究	余敏，赵建，李冬冬(667)
某板桩码头方案研究与设计	金建，王二宝(671)

## ◆ 试验与检测

下承式系杆拱桥吊杆索力测试研究	魏明亮，张宝(674)
超大吨位灌注桩锚桩反力加补偿荷载静载检测设计及应用	李峰，李天宝，黄安虎(676)
公路隧道健康状态综合检测技术的分析	彭传甫(679)
某带挂梁的V形墩刚构拱组合桥梁静载试验研究	张凡龙(681)
钢筋混凝土桥梁遭火灾后的检测与评定	郑文通，刘晓哲，张涛(684)

## ◆ 地基与基础

高密度电阻率法探测某基岩滑坡应用及其特征分析	杨杰，李玥(686)
中小桥明挖扩大基础软弱下卧层地基承载力验算	宋佳(689)
基于有限元强度折减法的临江岸坡稳定性分析	董世民，黄铭(692)
软土地基挡土墙变形影响分析	夏高响，余然(695)

## ◆ 勘察与测量

长江沿岸铜陵段工程地质条件与工程建设适宜性评价	余敏，赵建(697)
地质勘查报告三维表现方式及应用研究	姜雪亮(700)
某水电站坝址的工程地质条件浅析	朱明辉(704)

## ◆ 抗震研究

新型预制装配式桥墩地震破坏形态研究	韩磊，汪志甜(706)
基于拉索减震支座的钢板组合梁桥抗震性能研究	窦维禹，吴平平(708)

## ◆ 建造技术

再生混凝土技术在装配式建筑中的研究与应用	郭鲲鹏, 李群, 刘剑锋(710)
湖底隧道组合式生态围堰施工技术	胡先宽(712)
烟台港西港区专用铁路工程油品装卸站装车工艺简述	尚玉涛, 刘鑫(715)
既存建筑立面亮化改造的几点认识	程虎(718)
跨在建铁路深路堑大跨箱梁多机协同吊装技术	石运庆(720)
南京东路179号街坊美伦南楼外墙保留方案设计实践	吴兵(724)
地质雷达技术在公路建设中的应用	李剑, 李冬冬, 马鑫, 汤鑫(728)
基于“BIM+3D打印技术”的灾后重建模式	袁礼正, 张迎澳, 陈炜, 张煜辉, 施宇珂, 李雪峰(730)
敏感区域大型溶洞群桩基础施工处理技术	胡智敏(733)
轻质泡沫混凝土换填地铁车站结构分析	蒋爱文, 张呈祥, 尹俊(735)
城市市政设施地下化建设适宜性探讨	刘世光(739)
山区高速公路短隧道与深挖边坡方案比选研究	林伟弟(741)

## ◆ 建筑材料

气泡混合轻质土路用性能试验研究	岳新凯, 姚尚, 殷世刚(745)
大体积混凝土锚塞体水化热温度监控与分析	李之达, 黄勇哲, 兰晴朋, 龚磊, 邓业逵, 罗实(747)
沥青路面网裂表面处治材料应用与研究	陈正岳(750)
饱和掺砾砂土的动强度试验研究	张志昊(752)

## ◆ 建筑节能

公共建筑项目中暖通空调专业的绿色设计	杨振(755)
强磁场中心冷源系统节能改造设计	高峰, 黄世山, 何官送(757)

## ◆ 工程管理

浅谈G25富阳至G60诸暨高速联络线设计施工总承包项目亮点	高文号, 赵勇(759)
浅议建筑工程施工合同风险的防范	徐欢(761)
推进团体标准的认识与思考	王章虎(764)
基于粒子群算法的桥梁多目标维护决策优化	程健, 黎恩华(767)
如何做好安全监理工作	汪杰(770)
智慧高速信息化系统构成浅析	蔡权慧(772)
水利泵站机电设备运行管理若干问题思考	刘瑞红(775)
装配式建筑构件生产质量控制的数字化管理	郭鲲鹏, 李群, 刘剑锋(777)
市政道路施工工序资料填写及其管理探析	陶涛(779)

投稿须知	(579)
敬告作者	(637)
版权声明	(649)

# ENGINEERING AND CONSTRUCTION

Vol .34 No .4

Serial No .130

Aug .2020

## CONTENTS

### Research and Discussion

Analysis on the Prospects of Construction Enterprise Carrying out Resource Utilization of the Construction Waste	
.....	LIU Zhuang, YANG Dong, YANG Zi-han, LI Shui-sheng, HOU Ya-kang, XI Zhi-qin(573)
Analysis of flood diversion and drainage in huaihongxin River Basin	..... FAN Shi-yong(577)
Research on the Adaptability of Transportation Economy Based on AHP -Entropy Method and Multi-level Extension Evaluation Model	..... WANG Lin, LIU Guan-yu(580)
The traffic impact assessment of Tongcheng Comprehensive passenger hub station	..... FANG Fang, ZHU Yi-kui(584)
.....	..... YOU Xing-tao, JIANG Yu-bo(588)
Analysis on the Prospects of Construction Enterprise Carrying out Resource Utilization of the Construction Waste	
.....	..... ZHANG Yuan(591)
Simulation and Experimental Study on Pedestrian Evacuation in Underground Shopping Mall Based on Pathfinder	.....
.....	..... WANG Yan(594)

### Influence and Control of Temperature on Engineering Construction

.....	ZHAO Ze-tao, ZHANG Tao, WANG Hui, SU Rui-tong(597)
-------	--

Research on the integration of underground space and civil air defense engineering in Anhui Province	..... SI Hui-chao(599)
--	------------------------

### Building and Planning

Study on the Optimization of Water resource layout planning in Lingbi County	..... CHEN De-yang, CHEN Yan(603)
Construction of ecological water system in Hefei International Airport International Town	..... ZHOU Yan(607)
Research on Transportation Improvement Planning Methods for Old City Area Based on Accurate Traffic Perception ——Taking the Old City Area of Tongling City as an Example	..... YUAN Chun-ling(609)
Research on the Changes and Development of Urban and Rural Houses in 70 Years After the Founding of the People's Republic of China	..... QI Ruo-ning(612)
The method and thinking of land reserve planning in Hefei in the new era	..... SI Hui-chao(615)

### Engineering Design

A Brief analysis of the overall traffic organization and the Optimization scheme of slow crossing system in the old road reconstruction design	.....
.....	..... WANG Hao, XIE Min(619)
Study on the type selection of node interchange of Weiwei Avenue and Guangming Road in Bozhou City	.....
.....	..... ZHANG De-hao(622)
Design and construction of urban viaduct under high voltage	..... YUE Ren-hui, FAN Xing-chen(625)
Application of virtual reality technology in housing planning and design	..... YAN Xiang-qiang(627)
Some problems of staggered floor structure design in building engineering	..... ZHANG Zong-fei(629)
Discussion on the design of "road to bridge" when municipal road and existing expressway cross	.....
.....	..... CAO Er-xing, HU Qing-he(631)
Application of BIM in 3D Collaborative Design of Industrial Buildings	..... LI Zhong-yuan, GUO Yue, KONG Xian-ying(634)
Brief Analysis of the Plane and Elevation of the Culvert	..... LI Jing-Jing, ZHOU Ting(636)

Reserch on widening method of hollow slab bridge of expressway .....	LI Tao , HU Qing-he(638)
The Solution Design for Beihu Hub interchange on the fourth annular urban road of Wuhan .....	SUN Hong-de , YI Xin(641)
Application of counterweight wharf in the anhui river in port engineering .....	ZHANG Hai-ming , WANG Zhi-yong , MAO Cheng(643)
Comparison and analysis of three underground garage floor structures .....	ZHANG Xue-zhi(646)
Design and analysis of subway tunnel passing through existing operation line in short distance .....	WANG Gen , WANG Lin(650)
Study on the navigation clearance standard of bridge over Huaihe River from Linhuaigang to Hongshantou	SUN Shuguang
.....	SUN Shu-guang(653)
Analysis on the selection , design and comparison of power generation and diversion structures of Yuetan reservoir .....	HU Jia(655)
Design of a long-span single tower cable-stayed bridge with hybrid girder .....	SHI Wen-jie , LIANG Chang-hai , YAN Xin-yuan(657)
Demolition and Repair Design of a Large Equipment Foundation after Fire .....	PAN Qing-song , LI Zhi-qiang , TANG Yun-peng , YANG Hong-rui(660)
Analysis on Design Calculation of Indonesian Steel-concrete Composite Bridges Based on AASHTO .....	YIN Liang , HU Xiao-kang(663)
Research on flood diseases and control techniques in ancient mining site of Jinniu cave .....	YU Min , ZHAO Jian , LI Dong-dong(667)
Study and Design of a Sheet-pile wharf .....	JIN Jian , WANG Er-bao(671)
<b>Test and Inspection</b>	
Test and Research on suspender cable force of through tied arch bridge .....	WEI Ming-liang , ZHANG Bao (674)
Design and application of static load detection for super large tonnage cast-in-place pile .....	LI Feng , LI Tian-bao , HUANG An-hu(676)
English TitleAnalysis of comprehensive detection technology of highway tunnel health state .....	PENG Chuan-pu(679)
Experimental Study on Static and Dynamic Loads of a V-Pier Rigid Frame Arch Composite Bridge with Hanging Beams .....	ZHANG Fan-long(681)
Detection and evaluation of reinforced concrete bridges after a fire .....	ZHENG Wen-tong , LIU Xiao-zhe , ZHANG Tao(684)
<b>Foundation and Basement</b>	
Application of high density resistivity method to detect a bedrock landslide and its characteristics analysis .....	YANG Jie , LI Yue(686)
Checking calculation of bearing capacity of soft substratum of open cut enlarged foundation of medium and small bridges .....	SONG Jia(689)
Stability analysis of riverside slope based on finite element strength reduction method .....	DONG Shi-min , HUANG Ming(692)
Analysis of the Deformation Influence about the Retaining Wall on Soft Soil Foundation .....	XIA Gao-xiang , SHE Ran(695)
<b>Reconnaissance and Survey</b>	
Evaluation of engineering geological conditions and engineering construction suitability of tongling section along the Yangtze river .....	YU Min , ZHAO Jian(697)
Research on 3D representation and application of geological exploration report .....	JIANG Xue-liang(700)
Preliminary analysis of the engineering geological conditionsof the dam site of a Hydropower Station .....	ZHU Ming-hui(704)
<b>Research on Earthquake Resistance</b>	
Study on seismic failure mode of new prefabricated pier .....	HAN Lei , WANG Zhi-tian(706)
Study on seismic performance of steel plate composite beam bridge based on cable damping support .....	DOU Wei-yu , WU Ping-ping(708)

## **Construction Technology**

Research and application of recycled concrete technology in prefabricated building

..... GUO Kun-peng, LI Qun, LIU Jian-feng(710)

Construction technology of combined ecological Cofferdam for lake bottom tunnel ..... HU Xian-kuan(712)

Yantai port west port special railway engineering oil loading and unloading station Brief description of loading process

..... SHAO Yu-tao, LIU Xin(715)

Some understandings of existing building facade lighting transformation ..... CHENG Hu(718)

The technology of multi-machine co-hoisting of large span box girder in deep cutting of railway under construction

..... SHI Yun-qing(720)

Scheme design of retention outer wallofMeilun south building at No .179 East Nanjing Road ..... WU Bing(724)

Application of GPR technology in highway construction ..... LI Jian, LI Dong-dong, MA Xin, TANG Xin(728)

Post-disaster reconstruction model based on BIM +3D printing technology

..... YUN Li-zheng, ZHANG Ying-ao, CHEN Wei, ZHANG Yu-hui, SHI Yu-ke, LI Xue-feng(730)

Construction treatment technology of large karst cave pile foundation in sensitive area ..... HU Zhi-min(733)

Structural Analysis of Lightweight Foamed Concrete Replacement Subway Station

..... JIANG Ai-wen, ZHANG Cheng-xiang, Yin Jun(735)

Discussion On The Suitability of Municipal Facilities Underground Construction ..... LIU Shi-guang(739)

Comparative study of Short tunnel and Deep cutting in mountainous expressway ..... LIN Wei-di(741)

## **Building Material**

Study on The Performance Of Foamed MixtureLight-Weightsoil Used As Roadbed Filler

..... YUE Xin-kai, YAO Shang, YIN Shi-gang(745)

Monitoring and analysis of hydration heat temperature of mass concrete anchor plug

..... LI Zhi-da, HUANG Yong-zhe, LAN Qing-peng, GONG Lei, DENG Ye-kui, LUO Shi(747)

Application and research of surface treatment materials for asphalt pavement network cracks ..... CHEN Zheng-chan(750)

Experimental study on dynamic strength test of saturated sand mixed gravel ..... ZHANG Zhi-hao (752)

## **Building Energy Conservation**

Green design of HVAC in public building project ..... YANG Zhen(755)

Energy saving design of central cold source system with strong magnetic field

..... GAO Feng, HUANG Shi-shan, HE Guan-song(757)

## **Engineering Management**

Discussion on the highlights of G25 Fuyang to G60 Zhuji high speed connecting line design and construction EPC project

..... GAO Wen-hao, ZHAO Yong(759)

On the prevention of construction contract risk ..... XU Huan(761)

Thinking and Understanding of the Group Standards ..... WANG Zhang-hu(764)

Multi objective maintenance decision optimization of bridge based on particle swarm optimization

..... CHENG Jian, LI En-hua(767)

How to do safety supervision well ..... WANG Jie(770)

Analysis on the constitution of intelligent high-speed information system ..... CAI Quan-hui(772)

Some problems in the operation and management of electromechanical equipment in water conservancy pumping station

..... LIU Rui-hong(775)

Digital management of production quality control of prefabricated building components

..... GUO Kun-peng, LI Qun, LIU Jian-feng(777)

Analysis on filling in and management of municipal road construction process data ..... TAO Tao(779)