

工程建设与设计

主办: 国家机械工业局工程建设中心 中国机械工业勘察设计协会 中国中元国际工程有限公司 CN 11-3914/TU 2023 年第01月上 总第495期



庆祝中国中元国际工程有限公司成立70周年创造价值 筑就美好



202301-上-封面.indd 1

动态资讯

01 "住房和城乡建设部等发文全面推广绿色建筑和绿色建材"等信息11则

封面故事

03 薪火相传七十载 蓬勃建功新时代

建筑与结构设计

- 07 浅谈"平疫结合"在综合医院住院楼设计中的应用——以某医院新建住院楼设计为例(韩丹)
- 10 梁柱偏心节点力学性能研究(赵丹,许育文)
- 13 生态城市理念在城市规划中的运用与发展研究 (拜振国)
- 16 试论基于城市设计意境的建筑文化艺术创作 ——以苏州博物馆新馆为例 (詹伟,张锦松,李晓,王宏东,刘国卿)
- 19 浅析蒙城县实验高级中学的有机设计(邓卓剑, 李晓,林家民)
- 22 某续建工程剪力墙预留钢筋直径调查及统计分析 (朱来新)
- 26 车库顶板在不同计算模式下的经济性分析 (刘桂斌)
- 30 参数化设计方法在非线性形体建筑设计中的应用研究(刘建华,孟庆玉,陈静婕)

基础工程设计

- 34 滑坡地质灾害的诱发因素及防治措施分析 (刘长江)
- 37 高层建筑结构地基基础设计的常见问题及解决措施(孙丰光)
- 40 某复杂边坡工程中的抗滑桩应用探究(贾鹏飞)
- 43 基于裂隙网络有限元的破碎岩体边坡变形破坏演 化规律(娄渊涛)

2023 / 01 上 / 目次

47 梅州降雨型滑坡危害、成因及其防治对策 (黎俊健,张楠,王伟林,洪嘉淇,陈文豪, 茅志霖)

公用工程设计

- 50 某锂电池厂房注液房空调系统设计 (姚德华,袁丹,郭丽双,丁丽,曹静文)
- 54 BIM技术在市政给排水设计中的应用研究(胡胜)
- 57 市政给排水工程设计中节能技术的运用分析 (李娟娟)

市政・交通・水利工程设计

- 60 铁路声屏障服役期常见病害及处理方法 (丁亚超)
- 64 简支曲线与直线钢箱梁桥受力性能对比研究 (罗松涛,邓淑飞)
- 68 现浇梁小空间支架受力及优化设计 (彭伟,曾珍明,孟庆锋,王培桥,王丽锋)
- 72 城市轨道交通工程周边环境调查重难点问题研究 (冯金健)
- 76 城市地下市政基础设施建设短板问题研究 (王青, 聂敏)
- 79 连宿蚌铁路在连云港港铁路集疏运体系中的功能 分析(崔凯旋)
- 82 渝昆高速铁路田坝车站纵断面方案研究 (聂廷立,任闯闯)
- 86 关于提高公路勘测质量的研究 (张捷报,张伟刚,朱明杨)
- 89 基于生态理念的河流修复工程设计研究——以淄 博市范阳河为例(房荣)
- 92 铁路斜交刚构连续梁设计研究(陈虹文)
- 96 公路隧道病害处治及钢带加固技术有限元分析 (刘峰辉)
- 99 山西某铁路专用线采空区地质选线研究 (姜清予)
- 103 装配式桥梁高墩拼接技术及抗震性能分析 (庞振宇)
- 106 电气化铁路接触网常见技术问题的优化措施分析 (李斯琛)
- 109 天府川西竹海大跨度玻璃索桥设计特色 (王裕滔)
- 112 基于路基路面协调变形的水泥混凝土路面设计分析(谢正浩)

- 115 高速公路千枚岩改良土路基填筑施工分析 (陈兴杰)
- 118 基于环境选线原则的公路路线设计要点分析 (武莹)
- 121 农村公路路线选形的优化设计方法探讨 (吴晓燕)
- 124 土工合成材料在公路软基处理中的应用与设计 (郝建伟,王瑞)
- 127 爱情主题的叙事景观研究——以东安湖"爱情岛"为例(金鑫,谷元鹏)

智能与信息化

- 131 下一代城轨信号系统关键技术分析(王成)
- 134 远程评审平台在电网信息化项目评审中的应用研究(肖莹,诸德律,吴雪,卢璐,陈丹)
- 138 GIS技术和数字化测绘技术在工程测量中的应用 (蔡奇)
- 141 GIS+BIM技术在营运高速公路桥梁养护管理中的作用分析(张鑫)
- 144 复杂特长隧道施工全过程智慧管控研究 (陈思颖,王长林,李京泽,张朝强)

工程施工技术

- 147 高层建筑地下室车库渗漏分析及防范措施 (胡海忠)
- 151 公路工程施工技术创新与施工管理策略研讨 (苑斌)
- 154 三塔悬索桥猫道安装及拆除施工技术 (刘安金,张方龙)
- 157 干硬性混凝土在路缘石预制中的研究与应用 (陈兴帅, 郭衍勇)
- 161 浅谈高速公路改扩建工程桥梁整体拆除施工技术 与安全管控(朱亚德,李飞,代岚,陈阳)
- 164 浅析桥梁工程的常见病害及施工处理技术 (郭立伟)
- 167 高地应力隧道支护参数优化设计研究(邹小新)
- 171 混凝土塔筒安装工艺的工期优化 (吴琥珀,张世佳)
- 176 浅析装配式建筑施工质量问题及技术控制措施
- (严嘉东)
- 179 海外超高层房建项目后张法有黏结预应力施工工 艺探析(郑斌,王娜)
- 183 大直径盾构始发钢托架施工应用(史吏)
- 186 整体式滑移模板大型盖梁快速预制施工工艺分析

(高书山)

189 路桥施工中全焊钢结构现场安装施工工艺分析 (王金伟)

2023 / 01 上 / 目次

- 192 移动模架在小半径曲线箱梁施工中的运用研究 (吴海涛)
- 195 高速公路路堑高边坡施工技术研究(李聪)
- 198 SBR改性乳化沥青黏层施工技术研究(陈建冉)
- 201 高速公路高渗透乳化沥青透层施工技术研究 (刘朋影)
- 204 防渗漏技术在房屋建筑施工中的应用分析——以 厦门中骏天宸项目为例(杨国亮)
- 207 预制盾构管片高性能混凝土的应用研究 (宋泽霞)
- 210 公路改扩建中新老路基拼接关键技术及质量改进 措施(李小林)
- 213 浅谈预拌液态固化土在工程中的应用 (张洪兴,谢腊月,雷莹莹,李继明,郝汉)
- 217 路桥施工中对软土地基的处理分析(崔嵬)
- 220 贝雷架钢栈桥在深基坑工程中的应用 (罗辉,梁存君,曹瑞涛,李诗浩)
- 224 可周转钢梯施工技术在某超高层建筑中的应用 (甘维琼,付成刚,白玉晶,王睿,岑万雄)
- 227 土工格栅技术在公路工程软基处理中的应用 (李涵)

工程项目管理

- 230 建设项目投资费用优化策略研究 (梁栋平,尚宏,陈丽丽)
- 234 园林管理理念对园林设计的影响研究(李晓道)
- 237 住房公积金对住房保障体系推进作用探究 (刘莹)
- 240 建筑工程质量监督管理工作的重要性与策略研究 (王祺)
- 243 项目施工阶段造价控制的运用(徐龙娇)
- 246 市政排水管道造价控制研究(钱泫妤)
- 249 浅谈设计牵头的EPC与施工牵头的EPC项目的特点 (余超)
- 252 毛里塔尼亚项目建设中常见材料和防腐蚀问题简 析(王桂明)
- 255 建筑工程造价管理系统分析(张爽)
- 258 项目管理加监理模式实施分析(田润泽)
- 261 建筑火灾事故调查工作存在的问题分析与对策分析(徐佳)

C O N T E N T S

INFORMATION

"Guidelines for the Construction of Urban Child Friendly Spaces were issued " Etc.11

COVER STORY

With 70 Years' of Hertiage Passed Down, Contribute to the New Era with a Vigorous State

Architectural and Structural Design

- 07 Discussion on the Application of " Combination of Peace and Epidemic War" in the Inpatient Building Design of General Hospital——Taking the Design of the New Inpatient Building of a Hospital as an Example(HAN Dan)
- 10 Study on Mechanical Properties of Eccentric Beam Column Joints(ZHAO Dan, XU Yu-wen)
- **13** Research on the Application and Development of Eco-City Concept in Urban Planning(BAI Zhen-guo)
- 16 Artistic Creation of Architectural Culture Based on Artistic Conception of Urban Design——Taking the New Suzhou Museum as an Example(ZHAN Wei, ZHANG Jin-song, LI Xiao, WANG Hong-dong, LIU Guo-qing)
- **19** The Organic Design of the Experimental High School in Mengcheng County(DENG Zhuo-jian, LI Xiao, LIN Jia-min)
- 22 Investigation and Statistical Analysis of the Diameter of Reserved Steel Bars in Shear Wall of a Continued Construction Project (ZHU Lai-xin)
- 26 Economic Analysis of Garage Roof Under Different Calculation Modes(LIU Gui-bin)
- 30 Application Research of Parametric Design Method in Nonlinear Architectural Design(LIU Jian-hua, MENG Qing-yu, CHEN Jing-jie)

Engineering Design of the Ground

- 34 Analysis of Inducing Factors and Prevention Measures of Landslide Disasters(LIU Chang-jiang)
- 37 Common Problems and Solutions in Foundation Design of High-Rise Building Structures(SUN Feng-guang)
- 40 Application of Anti Slide Pile in a Complex Slope Engineering(JIA Peng-fei)
- 43 Deformation and Failure Evolution of Cracked Rock Slope Based on Joint Network Finite Element Method(LOU Yuan-tao)
- 47 Hazards, Causes and Control Countermeasures of Rainfall-Induced Landslide in Meizhou(LI Jun-jian, ZHANG Nan, WANG Wei-lin, HONG Jia-qi, CHEN Wen-hao, MAO Zhi-lin)

2023 / 01A / CONTENTS

Public Utilities Design

- 50 Design of Air Conditioning System for the Filling Room in a Lithium Battery Plant (YAO De-hua, YUAN Dan, GUO Li-shuang, DING Li, CAO Jing-wen)
- 54 Research on the Application of BIM Technology in Municipal Water Supply and Drainage Design(HU Sheng)
- **57** Application Analysis of Energy-Saving Technology in Municipal Water Supply and Drainage Engineering Design(LI Juan-juan)

Municipal·Traffic·Water Resources Engineering Design

- **60** Common Diseases and Treatment Methods of Railway Noise Barrier in Service Period(DING Ya-chao)
- 64 Comparative Study on Mechanical Properties of Simply Supported Curved and Straight Steel Box Girder Bridges(LUO Song-tao, DENG Shu-fei)
- 68 Force and Optimization Design of Cast-in-Place Beam Support in Small Space(PENG Wei, ZENG Zhen-ming, MENG Qing-feng, WANG Pei-giao, WANG Li-feng)
- 72 Study on Difficult Problems of Environmental Investigation Around Urban Rail Transit Project(FENG Jin-jian)
- **76** Study on the Short-Board Problem of Urban Underground Municipal Infrastructure Construction(WANG Qing, NIE Min)
- 79 Function Analysis of Lian-Su-Beng Railway in Lianyungang Port Railway Collection and Distribution System(CUI Kai-xuan)
- **82** Study on the Longitudinal Section Scheme of Tianba Station of Chongqing to Kunming High-Speed Railway(NIE Ting-li, REN Chuang-chuang)
- 86 Research on Improving the Quality of Highway Survey(ZHANG Jiebao, ZHANG Wei-gang, ZHU Ming-yang)
- 89 Study on Design of River Restoration Project Based on Ecological Concept—Taking Fanyang River in Zibo City as an Example(FANG Rong)
- **92** Design Research for Skew Rigid-Frame Continuous Beam Bridge(CHEN Hong-wen)
- **96** Treatment of Highway Tunnel Disease and Finite Element Analysis of Steel Belt Reinforcement Technology(LIU Feng-hui)
- 99 Study on Geological Line Selection in Goaf of a Railway Private Line in Shanxi(JIANG Qing-yu)
- 103 Analysis of High Pier Splicing Technology and Seismic Performance of Assembled Bridge(PANG Zhen-yu)
- 106 Analysis of Optimization Measures for Common Technical Problems of OCS of Electrified Railway(LI Si-chen)
- 109 Design Characteristics of Large-Span Glass Cable Bridge in Tianfu Zhuhai, Western Sichuan(WANG Yu-tao)
- 112 Design and Analysis of Cement Concrete Pavement Based on Coordinated Deformation of Subgrade and Pavement (XIE Zheng-hao)
- 115 Analysis of Filling Construction of Highway Subgrade with Phyllite Improved Soil(CHEN Xing-jie)
- **118** Key Analysis of Highway Route Design Points Based on Environmental Line Selection Principles(WU Ying)
- **121** Discussion on Optimal Design Method of Rural Highway Alignment(WU Xiao-yan)

- 124 Application and Design of Geosynthetics in Highway Soft Foundation Treatment(HAO Jian-wei, WANG Rui)
- **127** Research on Narrative Landscape of Love Theme——Taking "Love Island" of Dong'an Lake as an Exampl(JIN Xin, GU Yuan-peng)

Intelligentialize and Informatization

- **131** Analysis of Key Technologies of Next Generation Urban Rail Signal System(WANG Cheng)
- 134 Research on Application of Remote Evaluation Platform in Evaluation of Power Grid Informatization Project(XIAO Ying, ZHU De-Iv, WU Xue, LU Lu, CHEN Dan)
- **138** Application of GIS Technology and Digital Mapping Technology in Engineering Survey(CAI Qi)
- **141** Analysis on the Role of GIS + BIM Technology in the Maintenance and Management of Expressway Bridge(ZHANG Xin)
- 144 Research on Intelligent Management and Control of the Whole Process of Complex and Extra-Long Tunnel Construction(CHEN Siying, WANG Chang-lin, LI Jing-ze, ZHANG Chao-qiang)

Construction Technology

- 147 Leakage Analysis and Precautions of Basement Garage of High Rise Building(HU Hai-zhong)
- **151** Discussion on Construction Technology Innovation and Construction Management Strategy of Highway Engineering(YUAN Bin)
- **154** Construction Technology for Installation and Demolition of Catwalk of Three-Tower Suspension Bridge(LIU An-jin, ZHANG Fang-long)
- **157** Research and Application of Dry Hard Concrete in Curb Prefabrication(CHEN Xing-shuai, GUO Yan-yong)
- **161** Talking About the Overall Demolition Construction Technology and Safety Control of Bridge in Expressway Reconstruction and Extension Project(ZHU Ya-de, LI Fei, DAI Lan, CHEN Yang)
- **164** Analysis of the Common Diseases and Construction Treatment Technology of Bridge Engineering(GUO Li-wei)
- **167** Study on Optimum Design of Supporting Parameters of High Ground Stress Tunnel(ZOU Xiao-xin)
- 171 Optimization of the Construction Period of the Assembling and Hoisting Processes for Concrete Tower Tube(WU Hu-po, ZHANG Shi-jia)
- 176 Analysis on Construction Quality Problems and Technical Control Measures of Assembled Buildings(YAN Jia-dong)
- 179 Construction Technology Analysis of Post-Tensioning Method Bonded Prestress in Super High-Rise Project(ZHENG Bin, WANG Na)
- **183** The Engineering Application of the Steel Base in the Starting Section of Large Shield Machine(SHI Li)
- **186** Analysis on Construction Technology of Rapid Prefabrication of Large Cap Beam with Integral Sliding Formwork(GAO Shu-shan)
- **189** Analysis of Field Installation and Construction Technology of All Welded Steel Structure in Road and Bridge Construction (WANG Jin-wei)
- **192** Application Study of Movable Formwork in the Construction of Curved Box Girder with Small Radius(WU Hai-tao)
- **195** Study on Construction Technology of Highway Cutting High Slope (LI Cong)

2023 / 01A / CONTENTS

- **198** Research on Construction Technology of SBR Modified Emulsified Asphalt Adhesive Layer(CHEN Jian-ran)
- **201** Study on Construction Technology of High Permeable Emulsified Asphalt Permeable Layer in Expressway(LIU Peng-ying)
- 204 Application Analysis of Leakproof Technology in Housing Construction——Taking Xiamen Zhongjun Tianchen Project as an Example(YANG Guo-liang)
- 207 Application Research of Precast Shield Segment High Performance Concrete(SONG Ze-xia)
- 210 Key Technology and Quality Improvement of New and Old Subgrade Splicing in Highway Reconstruction and Expansion(LI Xiao-lin)
- **213** Application of Pre-Mixed Liquid Solidification in Engineering(ZHANG Hong-xing, XIE La-yue, LEI Ying-ying, LI Ji-ming, HAO Han)
- 217 Analysis on the Treatment of Soft Soil Foundation in Road and Bridge Construction(CUI Wei)
- 220 Application of Bailey Steel Trestle in Deep Foundation Pit Engineering(LUO Hui, LIANG Cun-jun, CAO Rui-tao, LI Shi-hao)
- **224** The Application of the Construction Technology of Reversible Steel Ladder in a Super High-Rise Building(GAN Wei-qiong, FU Chenggang, BAI Yu-jing, WANG Rui, CEN Wan-xiong)
- **227** Application of Geogrid Technology in Soft Foundation Treatment of Highway Engineering(LI Han)

Project Management

- **230** Research on Investment Cost Optimization Strategy of Construction Project(LIANG Dong-ping, SHANG Hong, CHEN Li-li)
- 234 Research on the Influence of Garden Management Concept on Garden Design(LI Xiao-dao)
- **237** Research on the Promoting Effect of Housing Provident Fund on Housing Security System(LIU Ying)
- 240 Research on the Importance and Strategy of Construction Project Quality Supervision and Management(WANG Qi)
- 243 Application of Cost Control in Project Construction Stage (XU Long-jiao)
- 246 Study on Cost Control of Municipal Drainage Pipeline (QIAN Xuan-yu)
- 249 Brief Introduction to the Characteristics of Design-Led EPC and Construction-Led EPC Projects(YU Chao)
- **252** Brief Analysis of Common Materials and Anti-Corrosion Problems in Mauritania Project Construction(WANG Gui-ming)
- 255 Analysis of Construction Cost Management System(ZHANG Shuang)
- **258** Project Management and Supervision Mode Implementation Analysis(TIAN Run-ze)
- **261** Analysis of Problems and Countermeasures in the Investigation of Building Fire Accidents(XU Jia)