



# 工程建设与设计

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 中国中元国际工程公司 CN 11-3914/TU 2012年第9期 总第293期



中国影视剧拍摄的摇篮

华通:描绘城市未来

壮阔的港口画卷

你,准备好了吗?

建筑行业人才状况调查

ISSN 1007-9467

09 >

9 771007 946103

**5 卷首****在理性回归中调整转型****6 动态资讯****8 特别关注****你，准备好了吗？  
——建筑行业人才状况调查****20 风景线****华通：描摹城市未来****24 封面工程****壮阔的港口画卷****——中交第一航务工程勘察设计院有限公司  
秦皇岛港煤五期工程****29 律师说法****工程总承包合同的风险分析与防范(五)****33 建筑霓虹****中国影视剧拍摄的摇篮****39 信息化****“智能建筑”新助手****——爱普生高速绘图仪为设计师解决出图难题**

**封面供图：中交第一航务工程勘察设计院有限公司  
秦皇岛港煤五期工程**

**建筑与结构设计**

- 41** 建筑师在工业建筑设计中的作用 (吕敬建)
- 44** 钢筋混凝土预应力高强叠合结构专用台座设计 (肖景平)
- 48** 论多层厂房结构设计 (孙海涛, 刘昌志, 李俊鸿, 石磊)
- 50** 谈寒冷地区医院建筑设计节能方法——长春一汽总医院设计 (韩丹)
- 54** 某屋盖钢桁架结构分析与设计 (陈健)
- 56** 板式楼梯的抗震性能设计 (王超, 王允锷)
- 59** 再生粗骨料混凝土梁抗弯性能试验研究 (汪加梁, 张毅)
- 64** 高层建筑地下室结构设计分析 (肖金辉)
- 67** 钢梁与钢筋混凝土圆柱刚接的节点设计 (周伟)

**公用工程设计**

- 70** 超高层五星级酒店给排水设计心得体会 (王文军)
- 75** 南方丘陵地区小城镇排水规划中的山洪防治设计 (汪良珠)
- 78** 变压器水喷雾设计 (张力, 孙燕)
- 82** 中央直饮水系统设计的技术分析与研究 (周展浩, 金永祥)
- 87** 变电站建筑节能若干设计要点研究 (刘志杰)
- 90** 太阳能节能设计分析研究 (金海)
- 92** 高层民用建筑火灾自动报警系统的设计 (康潞)
- 93** 中日友好医院老年康复中心游泳馆夏季通风空调设计 (刘庄民)
- 95** 浅析消防系统调试的若干问题及处理对策 (谭红旗, 沈全峰, 孙海, 张涛)
- 97** 太阳能热水系统与空气源热泵的组合设计 (章霞芳)
- 99** 机场行李处理系统始发流程测试探讨 (刘茜)
- 106** 孝昌县开发区城中村改造的调查研究 (胡宏, 黄满)
- 110** 某市广电中心设计方案探讨 (王红旗)

**基础工程设计**

- 116** 城市集中供暖煤改气工程锅炉基础改造设计 (刘美琴)
- 118** 砂土体-桩在基坑开挖过程中变形特性研究 (杨铁灯, 高华东, 孙富强)
- 123** 水泥改良低液限粉土工程特性试验分析 (刘巍)
- 126** 人工挖孔桩设计问题探讨 (盛利)
- 129** 宁东粉细砂的物理力学特性分析 (武立波, 胡冰涛, 尹志远, 王雄, 康勇)
- 132** 明挖地铁车站围护结构整体稳定性的计算探讨 (刘文)

**市政·交通·水利工程设计**

- 136** 提升机系统设备在昆明长水国际机场货运站工程中的设计与应用 (姜亚洲)
- 141** 黏滞阻尼器参数对中小跨径梁式桥地震响应敏感性分析 (杨沧生, 沈永林)
- 145** 大型机场行李处理系统检测方法研究及应用 (冉祥来, 卢风禄)
- 148** 桥梁的检测与加固技术研究 (韩兆存)
- 151** 部分有推力上承式钢筋混凝土拱桥的实例分析 (薛春红, 汤骏)
- 154** 水利工程建设管理中常见的问题及解决措施 (刘广辉)

**制造工程设计**

- 157** 某汽车喷烘一体室空调机组控制策略 (张成礼, 庞洛明, 刘丽萍)
- 160** 基于嵌入式系统的塔式起重机安全监控装置的设计与实现 (赵伟, 韦永斌)
- 164** MBD技术在飞机结构件数控加工中的应用 (宋潇)

**工程施工技术**

- 167** 郑州某艺术中心网架高空滑移施工技术分析 (李忠良, 岳鹏威)
- 170** 高原高寒地区水泥混凝土路面施工养护技术 (李博涵)
- 172** 建筑物裂缝产生原因及防治措施研究 (于科)

**工程项目管理**

- 175** EPC总承包项目风险管理探讨 (徐凤良)
- 179** 大型化工建设项目盈利和清偿能力评估和决策 (姜立军)
- 183** 基于SEM的工程设计知识重用的影响因素分析 (季月卿, 郑程)
- 187** 论天然气净化厂工程造价控制的重点环节 (张兴明)
- 191** 谈工程技术人员在安全管理中的作用 (傅钰)
- 193** 谈提高海外管道工程总承包项目整体效益的途径 (卢伟宁, 黄智刚)
- 147** 补遗



## 05 FOREWORD

Adjustment And Transformation in The Rational Regressiont

## 06 INFORMATION

### 08 SPECIAL FOCUS

Are You Ready?

## 20 SCENERY LINE

WDCE: Depict New Urban Future

## 24 COVER PROJECT

Magnificent Picture of The Port

## 29 LAWYERS ARGUMENT

Risk Analysis and Prevention on EPC (V)

## 33 BUILDING NEON

The Cradle of Chinese Movies and Television Filming

## 39 INFORMATIONIZATION

The New Assistant of Intelligent Building

### Architectural and Structural Design

- 41 The Role of Architects in the Design of Industrial Buildings (LV Jing-jian)
- 44 Special Pedestal Design of Reinforced Concrete Prestressed Composite Structure (XIAO Jing-ping)
- 48 Discussion on Structural Design of Multistory Factory Building (SUN Hai-tao, LIU Chang-zhi, LI Jun-hong, SHI Lei)
- 50 The Discussion about Energy-saving Measure of Medical Architecture Design in Cold Area  
——The Design about the Hospital of Changchun First Automobile Factory (HAN Dan)
- 54 Steel Structural Analysis and Design for One Roof (CHEN Jie)
- 56 Performance-Based Seismic Design of Plate Stairs (WANG Chao, WANG Yun-e)
- 59 Test and Study on Flexural Behavior of Recycled Coarse Aggregate Concrete Beam (WANG Jia-liang, ZHANG Yi)
- 64 Structure Design and Analysis of High-rise Building Basement (XIAO Jin-hui)
- 67 Steel Beam and Concrete Column Rigid Connection Design (ZHOU Wei)

### Public Engineering Design

- 70 Feelings and Experiences to the Drainage Design of an Ultra-high-rise Five-star Hotel (WANG Wen-jun)
- 75 The Design of Torrential Flood Control in the Drainage Planning of Small Towns in Hilly Region of South China (WANG Liang-zhu)
- 78 The Design for Transformer Spray System (ZHANG Li, SUN Yan)
- 82 Technical Analysis and Research on Central Direct Drinking Water System Design (ZHOU Zhan-hao, JIN Yong-xiang)
- 87 Substation Architectural Energy Saving Several Design Study (LIU Zhi-jie)
- 90 Energy Saving Design and Analysis in Solar Energy Application Field (JIN Hai)
- 92 High Rise Civil Building Automatic Fire Alarm System Design (KANG Lu)
- 95 Studies on the Commissioning of the Fire Protection System (TAN Hong-qi, SHEN Quan-feng, SUN Hai, ZHANG Tao)
- 97 Combinatorial Design of Solar Water Heating System and Air Source Heat Pump (ZHANG Xia-fang)
- 99 Explore for the Baggage Handling System Departure Process Test (LIU Qian)
- 103 The Summer Ventilation and Air Conditioning Design of the Geriatric Rehabilitation Center Natatorium of China-Japan Friendship Hospital (LIU Zhuang-min)
- 106 Research on Reconstruction of the Village in the city in Xiaochang County Development Zone (HU Hong, HUANG Man)
- 110 Discussion on the Design of Radio and TV Center in a City (WANG Hong-qi)

### Engineering Design of the Ground

- 116 Transformation Design of Boiler Basis for Urban Central Heating from Coal to Gas Projects (LIU Mei-qin)
- 118 Study on Deformation Characteristics of Sand-pile During Foundation Pit Excavation (YANG Tie-deng, GAO Hua-dong, SUN Fu-qiang)
- 123 The Experimental Analysis of the Engineering Properties of the Cement Improved Low Liquid Limit Silt (LIU Wei)
- 126 Discussion on the Design of Artificial Digging Piers (SHENG Li)
- 129 Analysis of Physico-mechanical Characteristics of Fine Sand in Ningdong Region (WU Li-bo, HU Bing-tao, YIN Zhi-yuan, WANG Xiong, KANG Yong)
- 132 Probing into Integral Stability Calculation for Retaining Protective Structures at Open-cut Station (LIU Wen)

### Municipal Traffic Water Resources Engineering Design

- 136 Design and Application of Lifting Equipment System in Kunming Changshui International Airport Cargo Terminal Project (JIANG Ya-zhou)
- 141 The Viscous Dampers Parameters for Small and Medium-sized Span Beam Bridge Type Seismic Response Sensitivity Analysis (YANG Cang-sheng, SHEN Yong-lin)
- 145 Study and Application of the Detection Methods for the Large Airport BHS (RAN Xiang-lai, LU Feng-lu)
- 148 Bridge Examination and Strengthening Technique Research (HAN Zhao-cun)
- 151 A Example Analysis of Part-thrust Reinforced Concrete Deck Arch Bridge (XUE Chun-hong, TANG Jun)
- 154 Common Problems and the Solving Measures in Construction Management of Water Conservancy Projects (LIU Guang-hui)

### Manufacture Engineering Design

- 157 Control Strategy of the Air Handling Unit of a Automobile Spray Booth (ZHANG Cheng-li, PANG Luo-ming, LIU Li-ping)
- 160 Design and Implementation of Tower Crane Safe Monitoring Devices Based on Embedded System (ZHAO Wei, WEI Yong-bin)
- 164 Application of MBD on Aircraft Structural Parts Numerical Control Machining (SONG Xiao)

### Construction Technology

- 167 Truss Overhead Sliding Construction Technology Analysis of a Art Center in Zhengzhou (LI Zhong-liang, YUE Peng-wei)
- 170 Plateau Alpine regions Cement Concrete Pavement Maintenance Technology LI Bo-han
- 172 Cause of Building Cracks and the Prevention Measures (YU Ke)

### Project Management

- 175 Risk Management in EPC Project (XU Feng-liang)
- 179 Assessment and Decision of Profitability and Liquidity for the Huge Chemical Construction Project (JIANG Li-jun)
- 183 Influence Factors Analysis of SEM Engineering Design Knowledge Reuse (JI Yue-qing, ZHENG Cheng)
- 187 Discussion on the Key Links in the Engineering Cost Control of General Natural Gas Purification Plant (ZHANG Xing-ming)
- 191 The Roles of the Technical Staff in the Security Management (FU Yu)
- 193 The Ways of Enhancing the Total Benefit of Aboard Pipeline General Contracting Project (LU Wei-ning, HUANG Zhi-gang)