



韩兵康 产、学、研、用 项目介绍

简历

- 1965 年 3 月 生于浙江省湖州市南浔区双林镇。
1977. 9~1983. 7 湖州市双林中学。
1983. 9~1988. 7 同济大学建筑工程系土建专业（教育部试点专业）
1988. 5~1988. 7 上海市民用建筑设计院（毕业设计）
1988. 8~1990. 8 浙江大学建筑设计研究院
1990. 9~1993. 3 同济大学工程结构研究所攻读硕士学位（导师朱伯龙）
1993. 4~1996. 4 同济大学建筑改造加固研究所攻读博士学位（导师朱伯龙）
1996. 5~至今 同济大学土木工程学院建筑工程系建筑施工教研室
同济大学建筑设计研究院（集团）有限公司
同济大学房屋质量检测站
上海同济检测技术有限公司（建设工程质量检测站）
上海同固结构工程有限公司

一、期刊论文

- [1] 韩兵康, HanBingkang. MTMD 控制非对称结构扭转振动的最优位置[J]. 振动与冲击, 2005, 24(3):27-31.
- [2] 韩兵康, 张丽卿, 李春祥. 砖木结构类保护性建筑的灾害分析与防治对策[J]. 自然灾害学报, 2004, 13(6):105-111.
- [3] 韩兵康, 杜冬. 结构半主动调谐质量阻尼器的发展[J]. 振动与冲击, 2005, 24(2):46-49.

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[6] 韩兵康,李春祥.基于系统参数组合多重调谐质量阻尼器减震模型冲程的评价[J].振动与冲击, 2007, 6(2):102-104.
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[8] 韩兵康, 林水珍, 朱伯龙. 上海嘉里商务中心幕墙预埋件现场试验[J]. 四川建筑科学研究, 1999(1):54-56.
[9] 韩兵康. 加大截面法加固混凝土轴压中长柱纵向稳定系数的试验及理论研究[M].
[10] 韩兵康. 钢筋混凝土柱加大截面加固的试验研究[M].
[11] 韩兵康. 钢筋混凝土柱加大截面加固的试验与理论研究[J]. 同济大学学报, 1993.
[12] 韩兵康, 张竹庭. 设抗浮桩的大型地下车库不均匀上浮有限元分析及处理[J]. 工业建筑, 2011(s1):441-444.
[13] 韩兵康, 徐赞云, 张竹庭. 某地下车库不均匀上浮事故有限元分析[J]. 结构工程师, 2008, 24(6):57-62.
[14] 韩兵康, 张嫣妮. 某高层建筑幕墙玻璃破坏原因分析[J]. 结构工程师, 2011, 27(3):51-56.
[15] 韩兵康, 朱伯龙, 陆小平. 上海船厂船坞改建工程水下爆破及桩基施工对周边民房影响的振动测试与评估[J].
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[21] 朱炎兵, 韩兵康, 胡再龙.顶层空旷多层砌体结构的弹塑性地震反应分析[J]. 振动与冲击, 2004, 23(4):135-138.
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[23] 张丽卿, 韩兵康, 李春祥. 基于振动的土木工程结构损伤诊断研究进展[J]. 自然灾害学报, 2004, 13(5):136-143.
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27] 蒋首超, 李国强, 韩兵康,等. 某钢结构梯架火灾后的性能分析与鉴定[J]. 结构工程师, 2009, 25(1):124-127.
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二、研究生学位论文

- [1]奥斯卡, 韩兵康. 水泥基渗透结晶型材料提高混凝土抗压和抗渗性能的试验研究[D]. 同济大学, 2017.
- [2]李金星, 韩兵康. 中小学校舍抗震加固中风险控制运用研究[D]. 同济大学, 2012.
- [3]张璞, 韩兵康. 砌体房屋钢结构增层抗震分析及构造研究[D]. 同济大学, 2012.
- [4]张啸辰, 韩兵康. 软土地基地铁盾构施工对多层混合结构完损性影响的研究[D]. 同济大学, 2013.
- [5]朱晓栋, 韩兵康. 复杂环境下大型商建项目施工风险控制研究[D]. 同济大学, 2013.
- [6]章文磊, 韩兵康. 钢混桁架整体提升施工综合控制研究[D]. 同济大学, 2017.
- [7]高瑾, 韩兵康. 受地铁运营影响周边受损房屋修复与加固技术的振动响应研究[D]. 同济大学, 2015.
- [8]崔学忠, 韩兵康. 软土地基排桩围护下基坑顺逆作协同施工关键技术研究[D]. 同济大学, 2013.
- [9]张竹庭, 韩兵康. 大型地下车库抗浮设计及施工关键技术研究[D]. 同济大学, 2011.
- [10]李明, 韩兵康. 大型复杂钢结构屋面防水设计与施工相关技术研究[D]. 同济大学, 2016.
- [11]成源, 韩兵康. 地下建筑物截水止渗抗浮技术研究[D]. 同济大学, 2015.
- [12]徐赞云, 韩兵康. 多层房屋改造锚杆静压方桩地基加固设计理论及施工工艺研究[D]. 同济大学, 2009.
- [13]叶青荣, 韩兵康. 风险控制在华夏东站深基坑施工中的应用[D]. 同济大学, 2010.
- [14]刘新, 韩兵康. 建筑工程安全效益分析[D]. 同济大学, 2013.
- [15]杨俊, 韩兵康. 基于历史建筑鄂达克别墅的保护性修复工艺研究[D]. 同济大学, 2013.
- [16]姜巍, 韩兵康. 公租房项目装配式住宅关键技术研究[D]. 同济大学, 2017.
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- [19]李宏程, 韩兵康. 基于 BIM 技术的公益类房屋运维系统研究[D]. 同济大学, 2015.
- [20]林慧, 韩兵康. 基于构件损伤的砌体结构完损性综合评价方法研究[D]. 同济大学, 2013.
- [21]娄中波, 韩兵康. 天津地下交通空间开发关键技术研究[D]. 同济大学, 2014.
- [22]董徐奋, 韩兵康. 基于历史文物建筑鄂达克别墅的结构体系及其施工工艺研究[D]. 同济大学, 2011.
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- [24]陈国祥, 韩兵康. 浦东大道 K4 标段地下快速路与轨交隧道施工对邻近建筑物附加变形影响的分析及控制研究[D]. 同济大学, 2017.
- [25]唐仲鲁, 韩兵康. 片筏基础加固既有条形基础设计方法及施工工艺研究[D]. 同济大学, 2014.
- [26]王亮亮, 韩兵康. 预制桩施工与土方开挖[D]. 同济大学, 2014.
- [27]王梦磊, 韩兵康. 考虑周边环境房屋初始变形的基坑工程设计与施工优化研究[D]. 同济大学, 2015.
- [28]张嫣妮, 韩兵康. 高层建筑幕墙结构安全性评估体系研究[D]. 同济大学, 2012.
- [29]赵传凯, 韩兵康. 复合土钉墙支护风险分析与控制研究[D]. 同济大学, 2009.

三、教材、编著

- [1] 应惠清, 韩兵康. 现代土木工程施工 [M]. 清华大学出版社, 2015.
- [2] 应惠清, 韩兵康. 土木工程施工 (上册) [M]. 同济大学出版社, 2012.
- [3] 苏小卒, 韩兵康. 土木工程专业英语 (上、下册) (参编施工篇) [M]. 同济大学出版社, 2012.
- [4] 俞国风, 韩兵康. 建设工程质量分析与安全管理 [M]. 同济大学出版社, 2012.
- [5] 金磊铭, 韩兵康. 大型公共建筑施工风险管理 [M]. 建筑工业出版社, 2012.
- [6] 李国强, 韩兵康. 中国大百科全书-建筑工程篇-结构加固-建筑纠偏 [M].
- [7] 徐伟, 韩兵康. 土木工程施工学 [M]. 同济大学出版社, 2015

四、规范、标准编制

- [1] 国家标准《混凝土结构加固设计规范》GB50367-2006
- [2] 国家标准《建筑基坑工程监测技术规范》GB50497-2009
- [3] 行业标准《桥梁悬臂浇筑施工技术标准》CJJ/T ×××-201X

五、国家、省部级科研项目

- [1] 国家自然科学基金“台风作用下超高层建筑非高斯风压的数值模拟” 2006.01~2008.12
- [2] 建设部、上海市建委 “大型公共建筑施工风险管理” 2006
- [3] 中建总公司八局“高速铁路成套施工技术的研究” 2006
- [4] 中建总公司八局“绿色施工技术的研究” 2006
- [5] 科技部 十二五科技支撑计划“装配式建筑信息化施工” 2012.01~2015.12

六、国家、省部级获奖

- 1、《土木工程施工》 获上海市、国家级精品课程
- 2、改革创新建设“土木工程施工”精品课程获上海市教学成果三等奖
- 3、网络《高层建筑施工》 获国家级精品课程
- 4、《土木工程施工》获国家级精品资源共享课 (2013 年)
- 5、《现代土木工程施工》获“全国工程专业学位研究生教育国家级规划教材” 2013 年
- 6、立足“卓越工程师”实践能力培养的“土木工程施工”课程建设获同济大学 2015 年教学成果二等奖

七、各类工程项目		
(一) 加层、接建抗震鉴定项目		
1、临平北路7号D楼房加层抗震鉴定		虹口区税务局
2、上海医科大学治道楼八角厅加层抗震鉴定	1997.7.12	上海医科大学
3、原上海表壳三厂房加层抗震鉴定	1998.5.18	
4、原沪西印染机械厂厂房房屋质量检测及加层抗震鉴定	1999.3.18~4.18	上海陕康商务有限公司
5、上海高等医学专科学校食堂加层房屋质量检测及抗震鉴定	1999.7.5	上海高等医学专科学校
6、原宝山县五角场乡政府敬老院、幼儿院加层抗震鉴定	1999.8.17	
7、上海一汽公司食堂加层抗震鉴定	2000.6.20	上海公交控股公司
8、虹口区北郊学校教学楼加层抗震鉴定报告		虹口区北郊学校
9、外高桥保税区新康2号楼加层抗震鉴定		上海新康国际置业有限公司
10、虹口区北郊学校3号教学楼加层抗震鉴定报告		虹口区北郊学校
11、上海建青中学教学楼，图书馆改造抗震鉴定及加固方案	2004.11.30~2005.1.30	长宁国际学校
12、上海华潮丽恒电器有限公司厂房、宿舍加层抗震鉴定	2005.8.1~2005.8.30	
13、普陀区人民防空工程公司宁夏路基地加层抗震鉴定	2005.1.4~2005.2.30	普陀区人民防空工程公司
14、上海汽轮发电机有限公司试车站接长抗震鉴定	2005.11.22~11.28	上海电气汽轮发电机有限公司
15、上海台湾城改造房屋质量检测及加层抗震鉴定	2004.11.1~2004.11.30	
16、杨浦区中心医院开鲁路分院加层抗震鉴定	2006.3.1~3.28	杨浦区中心医院
17、宝山消防支队营房加层抗震鉴定	2005.12.1~06.1.20	宝山区消防支队
(二) 既有房屋改造抗震鉴定项目		
1、上海良丰大厦抗震性能研究	1997.3.14	
2、上海一百假日酒店抗震鉴定	1998.9.20	上海一百(集团)公司
3、上海美术馆新馆(原上海图书馆)抗震鉴定	1999.3.10	
4、上海医科大学17号学生宿舍楼改造抗震鉴定	1999.5.24~6.2	上海医科大学
5、上海港龙吴港务公司医教楼改建抗震鉴定	2000.8.10	上海港龙吴港务公司
6、川上酒楼改造工程抗震鉴定		上海川一餐饮有限公司
7、长宁国际学校虹桥分校改建抗震鉴定		上海长宁国际学校
8、上海市环卫局水上运输公司通讯综合楼改建抗震鉴定	2003.5.29~6.15	上海市环境卫生水上运输公司
9、杨浦区远洋广场建筑物裙房抗震鉴定	2005.6.3~2005.6.30	上海昂立同科经济发展有限公司
10、杨浦区远洋广场建筑物主楼抗震鉴定	2005.4.30~2005.5.30	上海昂立同科经济发展有限公司

11、杨浦区市东中学综合楼改造抗震鉴定	2005.5.10~2005.5.30	杨浦区教育工程设备综合管理站
12、黄兴绿地都市休闲林管理楼改建抗震鉴定	2005.3.21~2005.4.21	上海市杨浦城市建设投资有限公司
13、杨浦区小学教学楼改造抗震鉴定	2006.1.1~3.28	杨浦小学
14、上海市统计职校扩建教学楼四楼改造鉴定评估	2004.6.9~2004.6.30	上海市统计职校
15、长宁区教育局考试中心改建抗震鉴定		
16、长宁区校安工程西延安中学抗震排查鉴定		
17、长宁区校安工程虹桥中学抗震排查鉴定		
18、长宁区校安工程适存小学抗震排查鉴定		
19、长宁区校安工程淞虹路抗震排查鉴定		
20、长宁区校安工程绿苑小学抗震排查鉴定		
21、长宁区现代职校新渔校区校舍抗震排查鉴定		
22、长宁区延安中学校舍抗震排查鉴定		
23、长宁区紫荆中学校舍抗震排查鉴定		
24、长宁区西郊中学校舍抗震排查鉴定		
25、长宁区东展小学校舍抗震排查鉴定		
26、长宁区古四小学校舍抗震排查鉴定		
27、长宁区盲童学校校舍安抗震排查鉴定		
28、长宁区李文斯顿学校校舍抗震排查鉴定		
29、国长宁区际耀中（虹桥校区）校舍抗震排查鉴定		
30、金山查山利民小学校舍抗震排查鉴定	金山区教育工程设备综合管理站	
31、金卫中学校舍抗震排查鉴定		
32、松江车墩中学校舍抗震排查鉴定	松江区教育工程设备综合管理站	
33、杨浦区校安工程六一小学抗震排查鉴定		
34、杨浦区校安工程上音杨浦初中部抗震排查鉴定		
35、杨浦区校安工程翔殷路小学抗震排查鉴定		
36、上海市女子监狱安全检测及抗震鉴定演艺厅检测	上海市女子监狱	
37、上海市女子监狱安全检测及抗震鉴定		
38、上海市高校毕业生指导中学冠生园办公楼 A 楼安全检测	上海市高校毕业生指导中心	
39、上海市高校毕业生指导中学冠生园办公楼 A 楼抗震鉴定		
40、杨浦区中心医院开鲁分院门诊部综合楼加层抗震鉴定	杨浦区中心医院	
41、好丽友食品（上海）有限公司厂房改建抗震鉴定	好丽友食品（上海）有限公司	
42、德莱赛机械（苏州）有限公司上海浦东分公司主车间 2 房屋安全检测	德莱赛机械（苏州）有限公司	
43、上海市五角场监狱房屋安全检测及抗震鉴定	上海市五角场监狱	

44、上海市商业学校 8 号楼改建抗震鉴定	上海市商业学校
45、上海市周浦监狱 1-3 号监舍房屋安全检测及抗震鉴定	上海市周浦监狱
46、上海市车墩学校小学部教学楼改建抗震鉴定	
47、上海市松江一中 10 号楼改建抗震鉴定	
48、上海市松江一中 9 号楼改建抗震鉴定	
49、长宁国际学校虹桥分校教学楼 A 楼改建抗震鉴定	
50、上海 2010 世博会。中国船舶馆钢结构厂房改建抗震鉴定	江南造船厂
51、上海市杨浦区二联小学教学楼抗震鉴定	
52、上海市杨浦区中原中学教学楼抗震鉴定	
53、上海市杨浦区回民小学教学楼抗震鉴定	
54、上海市杨浦区三门中学教学楼抗震鉴定	
55、上海市杨浦区政立二小教学楼抗震鉴定	
56、上海市杨浦区市光二小教学楼抗震鉴定	
57、上海市杨浦区国和中学教学楼抗震鉴定	
58、上海市杨浦区开鲁一小教学楼抗震鉴定	
59、上海市杨浦区中原路小学教学楼抗震鉴定	
60、上海市杨浦区二师附小教学楼抗震鉴定	
61、上海市杨浦区包头中学教学楼抗震鉴定	
62、上海市杨浦区鞍山实验中学教学楼抗震鉴定	
63、上海市杨浦区同济初级中学教学楼抗震鉴定	
64、上海市杨浦区同济第二初中教学楼抗震鉴定	
65、上海市杨浦区黑山幼儿园教学楼抗震鉴定	
66、上海市杨浦区市光二幼教学楼抗震鉴定	
67、上海市杨浦区市光一幼教学楼抗震鉴定	
68、上海市杨浦区市光一小教学楼抗震鉴定	
69、福泉商厦改建抗震鉴定与加固设计	福泉商厦
70、长宁校区教科党校改建抗震鉴定与加固设计	上海市教委基建处
71、长宁教科党校冠生园路校区 A、B、C 楼改建抗震鉴定	上海市教委基建处
72、浦东新区桃林花苑 3#楼改建抗震鉴定	陆家嘴集团公司
73、上海市五角场监狱南监舍楼改造房屋安全检测及抗震鉴定	上海市五角场监狱
74、上海市宝山监狱罪犯监舍 8 号楼房屋安全检测及抗震鉴定	上海市宝山监狱
75、华浦养老院改建房屋抗震性能鉴定	

(三)“烂尾楼”续建抗震鉴定项目

1、杨浦区菊花大厦抗震鉴定	2002.7.9~2002.10.30	上海荣欣房地产有限公司
2、上海万宝国际广场续建公寓楼等已建地下结构抗震鉴定报告		上海裕昌房地产发展有限公司
3、浦东川沙合庆镇环庆南路 173 弄 175 弄房屋质量检测	2000.7.7	浦东川沙合庆镇工业公司
4、上海市工业区开发总公司桃浦工业区 1 号仓库房屋质量检测	1999.9.1	上海市工业区开发总公司
5、原朱家桥乡老年活动中心房屋质量检测	2003.2.14~3.14	上海娄塘资产经营有限公司
6、上海嘉苑铝塑门窗有限公司厂房质量检测	2003.3.20~4.20	上海嘉苑铝塑门窗有限公司
7、宝钢集团企业开发总公司厂房、办公楼等房屋质量检测	2004.8.17~2004.10.17	上海宝钢工业公司
8、苏州名人大厦续建工程质量检测	2007.8.17~2012.10.17	苏州国展公司

(四)房屋质量检测项目

1、上海金利房产投资有限公司淀山湖别墅房屋试验与鉴定研究	1996.12.18	上海金利房产投资有限公司
2、3M 公司桂平路 481 号 17 号厂房房屋质量检测	1997.5.14	3M (中国) 公司
3、上海胜狮冷冻货柜有限公司危险品仓库房屋质量检测	1998.4.26	
4、云莲地区博文路南码头路雨水馆周围民宅房屋质量检测	1999.11.2~11.30	中星集团公司
5、杨树浦路 471 弄 1 号 4 号房屋质量检测	2000.4.7	上海船厂
6、云莲地区博文路南码头路桥周围民宅房屋质量检测	2004.1.13~5.1	浦东工程建设管理有限公司
7、云莲地区博文路南码头路桥周围民宅房屋质量检测	2004.2.1~2004.8.1	
8、农行金桥支行孙桥营业所房屋质量检测	1998.8.20	农行金桥支行
9、上海汾阳路 138 号房屋质量检测	1998.10.11	
10、上海丰镇中学教学楼房屋质量检测	1998.10.25	
11、佘山爱思箱包厂厂房房屋质量检测	1998.11.05	
12、襄阳南路 306 弄 38 号底层厨房房间二层楼板房屋质量检测	1999.9.15	徐汇区永平物业公司
13、上海汽轮发电机有限公司试车站露天跨结构检测	2003.4.22~4.28	上海汽轮发电机有限公司
14、金桥新村中大花苑房屋质量检测	2004.3.22~2004.4.22	上海中大股份有限公司
15、普陀区桃浦镇春光村武威路 1019 弄 676 号房屋质量检测	2004.11.24~2004.12.30	桃浦镇春光村委会
16、协和城一期裙房外立面 3 楼非结构构件砼结构及检测方案	2004.9.17~2004.10.30	上海运盛房产
17、上海市德威五金有限公司生产楼辅助楼房屋质量检测		上海市德威五金有限公司
18、上海市德威五金有限公司生产楼辅助楼房屋补充检测		
19、上海市德威五金有限公司生产辅助楼房屋补充检测 (二)		
20、好丽友食品 (上海) 有限公司厂房房屋质量检测		好丽友食品 (上海) 有限公司
21、上海市肺科医院茶厅房屋质量检测		上海市肺科医院

22、西藏中路 656 号美华大楼外墙损坏检测	上海燃气市北公司
23、真北路 3725 弄 11~12 号商务楼房屋结构检测	
(五) 近代优秀保护建筑检测项目	
1、上海美术馆新馆（原上海图书馆）东楼、西楼房屋质量检测	1999.3.10 上海美术馆
2、愚园路 754 号犹太人故居房屋质量检测	1998.3.10 地铁指挥部
3、珠海陈芳故居房屋质量检测	2000.1.10
4、市东中学教学楼房屋质量检测	2004.1.16~2.16 杨浦区教育工程设备综合管理站
5、番禺路 129 邬达克小洋楼检测	长宁区教育工程设备综合管理站
6、番禺路 129 邬达克小洋楼补充检测	
7、杨浦区政本路 338 号法善庵大雄宝殿房屋完损状况检测	
(六) 房屋安全检测项目	
1、云莲地区博文路南码头路雨水馆周围民宅房屋质量安全检测与修复方案	2000.6.5~7.5 中星集团公司
2、虹口区长治路 150 号房屋安全检测	1999.12.29
3、虹桥国际机场迎宾三路天时楼房屋安全检测	1999.11.22 虹桥国际机场
4、杨浦区仁和苑 19 号 502 室楼板安全检测	2000.12.7 上海通惠房地产有限公司
5、上海内航局航政管理处职工住宅房屋安全检测	2000.6.22 澳华娱乐有限公司
6、嘉定区嘉丰股份有限公司职工住宅 1~3 号楼阳台质量检测报告	嘉定区嘉丰股份有限公司
7、嘉定区嘉丰股份有限公司职工住宅 1 号、3 号楼阳台质量补充检测报告	
8、上海电力公司嘉定分公司食堂、仓库房屋安全检测	上海电力公司嘉定分公司
9、长岛别墅 5 号别墅房屋倾斜安全性检测	2003.5.21~6.10 上海人济置业发展有限公司
10、上海老年大学小红楼房屋安全性检测报告	上海老年大学
11、杨浦区水务所办公楼房屋安全检测	杨浦区水务所
12、上海市杨浦区校舍抗震安全排查	2009 上海市杨浦区教育局
13、上海市长宁区校舍抗震安全排查	2009 上海市长宁区教育局
14、上海市金山区校舍抗震安全排查	2009 上海市金山区教育局
15、上海市杨浦区公租房、系统房建筑安全排查	2014 上海市杨浦区房地局
16、昆山市巴城镇农村老旧建筑安全排查整治项目	2017.6 昆山市巴城镇建设管理所
(七) 钢结构房屋检测项目	
1、上海建青中学教学楼，图书馆改造抗震鉴定及加固方案（顶层大跨钢结构）	长宁国际学校

2、好丽友食品（上海）有限公司厂房改建抗震鉴定（轻钢结构）	好丽友食品（上海）有限公司
3、宛平南路 88 号地块办公楼钢结构改造工程房屋质量检测	广万集团
4、南京汽车集团有限公司浦口基地总装车间网架检测鉴定	南汽集团
5、上海市德威五金有限公司 2 号楼钢结构球形屋面渗漏检测	上海市一中院
6、2010 上海世博会中国船舶馆（原江南造船厂总装车间）（重钢、网架）改建控制鉴定	
7、上海市宝山监狱罪犯监舍 8 号楼轻钢结构加层房屋安全检测及抗震鉴定	上海市宝山监狱
8、上海市五角场监狱南监舍楼轻钢结构加层改造房屋安全检测及抗震鉴定	上海市五角场监狱
9、上海市女子监狱监狱 1 号监舍轻钢结构加层房屋安全检测及抗震鉴定	上海市女子监狱
10、上海市周浦监狱 1-3 号监舍轻钢结构加层房屋安全检测及抗震鉴定	上海市周浦监狱
11、德莱赛机械（苏州）有限公司上海浦东分公司主车间 2 房屋安全检测	德莱赛机械（苏州）有限公司

(八) 木结构房屋检测项目

1、珠海陈芳故居房屋质量检测	2000.1.10	
2、愚园路 754 号犹太人故居房屋质量检测	1998.3.10	地铁指挥部
3、市东中学教学楼房屋质量检测	2004.1.16~2.16	杨浦区教育工程设备综合管理站
4、番禺路 129 鄂达克小洋楼检测		长宁区教育工程设备综合管理站
5、杨浦区政本路 338 号法善庵大雄宝殿房屋完损状况检测		
6、上海市肺科医院茶厅房屋质量检测		上海市肺科医院
7、泰州文峰塔改造设计、施工、监测咨询		

(九) 房屋拆除安全性检测评估项目

1、上海市周浦监狱教育楼部分拆除房屋安全性检测报告		
2、“美亚金桥清洁能源替代项目 2×35th 燃气锅炉技改工程”主厂房拆除改造保留除氧煤仓间房屋抗震鉴定		
3、莘闵轻轨地铁出入口通道改造拆除原莘庄车站商场后保留部分结构检测与鉴定		

(十) 房屋裂渗检测项目

1、嘉定区塔城东路 255 弄 18 号、22 号房屋面渗漏检测	2000.10.24	上海市新望房地产经营公司
2、嘉定区迎园路 351 弄 11 号 602 室墙面渗水检测	2000.11.7	上海市新望房地产经营公司
3、嘉定区仓场路 330 弄 10 号房屋渗漏检测报告		
4、上海第二军医大学食堂、浴室屋面裂缝渗漏检测		上海第二军医大学
5、新闻路 168 号 2301 室卫生间地坪渗水检测	2003.10.15~11.16	上海金外滩集团发展有限公司
6、嘉定贝嘉儿幼儿园梁裂缝检测		

7、好丽友食品(上海)有限公司厂房、办公楼房屋质量检测	2005.3.29~2005.5.30	好丽友食品公司
8、宝钢集团企业开发总公司厂房、办公楼等房屋质量检测	2004.8.17~2004.10.17	宝钢集团公司
9、江阴市政府大厦房屋渗漏检测	江阴市政府机关事务管理局	
10、昆山恒海国际花园二期工程别墅渗漏专项检测报告		
11、昆山恒海国际花园三期地下室渗漏专项检测		
12、五角场盛世豪园商住楼地下车库抗浮堵漏检测分析评估		
(十一) 房屋灾后检测项目		
1、中国农业银行金桥支行火灾后房屋质量检测	2004.8.17~2004.10.17	农业金桥支行
2、江阴金三角建材市场 3#厅火灾后房屋质量检测报告	2002.6.21~7.1.	中国太保公司江阴支公司
3、长征医院电梯火灾鉴定	长征医院	
4、上海卷烟厂工房屋面火灾后屋面结构检测鉴定	上海卷烟厂	
5、太仓欧诺法厂房火灾后检测		
6、江苏兴达公司电镀车间火灾后结构检测鉴定		
7、北京现代涂装车间火灾后结构检测与鉴定	北京现代	
8、内蒙古通辽市“赵立中”火灾案件受损房屋检测与鉴定		
9、上海归鸿实业有限公司新建航空表面涂料项目 1#甲类车间 11 轴~16 轴五层车间火灾后结构检测与鉴定		
(十二) 施工类影响房屋检测监测项目		
1、上海美术馆新馆变形观测		
2、嘉定贝嘉儿幼儿园沉降、倾斜监测	2004.7.9~2004.7.30	嘉定新成路街道办事处
3、上海南汇绿宝园运动中心游泳池沉降、倾斜监测	2004.1.6~6.6	南汇绿宝园
4、嘉定贝嘉儿幼儿园沉降、倾斜监测	2004.1.1~2005.1.1	
5、延安西路 1160 号地块基坑旁小洋楼保护方案	2005.3.3~2005.3.25	中建八局
6、上海美术馆新馆沉降观测 上海美术馆		
7、因地铁 8 号线施工杨浦区鞍山六村 103 号、104 号房屋安全检测	杨浦区建交委	
8、巴黎阳光城施工影响徐汇区斜土路 2167 弄 9 号甲、乙房屋安全检测		
9、因地铁施工浦东南路 4800 弄 1-4 号房屋安全检测		
10、新华苑小区西营南路 11 弄 37 号~46 号房屋安全检测		
11、因地铁 8 号线施工杨浦区鞍山六村 99-101 房屋检测	杨浦区建交委	
12、因地铁 8 号线施工杨浦区鞍山六村 92~93 房屋检测	杨浦区建交委	
13、因地铁 8 号线施工杨浦区鞍山六村 105~106 房屋检测	杨浦区建交委	

14、上海市长宁区清溪路 555 号檀宫 3 号别墅完损状况检测报告
15、徐汇区 156 号地块周边两幢房屋完损状况检测
16、因地铁 8 号线施工控江路 1670 弄 17~19 号完损状况检测 杨浦区建交委
17、杨浦区公安大厦施工平凉路 1976 弄完损状况检测 杨浦区建交委
18、益晖花苑二期施工前延吉东路 149 弄 1~4 号完损状况检测 杨浦区建交委
19、上海美术馆新馆旧楼房屋监测 1999.5.11
20、上海新龙华大酒店改扩建工程基坑施工康乐小区三街坊 7~8 号房屋完损状况检测
21、塘桥社区 02-04 地块东方纯一大厦项目对周边房屋施工影响检测与监测, 陆家嘴集团上海纯一实业公司
22、世纪大道 SN1 地块浦东金融广场项目对周边房屋施工影响检测与监测 上海陆家嘴开发股份有限公司
23、杨浦区益晖花苑二期基坑施工前周边安图路 2 弄 1 号、2~5 号、6 弄 1~3 号房屋完损状况初次检测
24、杨浦区中国联通移动互联网产业南方运营基地项目基坑施工周边榆林路 222 弄 236 号、238 号、250 号、256 号、258 号住宅楼、上海表业有限公司 1 号楼、3 号楼房屋完损状况检测、监测
25、杨浦区 358 街坊动迁安置房(一期)项目施工周边上海五角场客运站(国伟)房屋完损状况检测
(十三) 建设工程质量司法鉴定
1、哈密路 1719 弄 7 号春花苑 201 室房屋质量鉴定 2000.7.17 长宁区人民法院
2、上海市延长中路 628 弄 11 号 601 室东墙、北墙及屋顶漏水鉴定 2000.11.2 闸北区人民法院
3、哈密路 1719 弄 1 春花苑 401 室房屋质量鉴定 2000.7.17 长宁区人民法院
4、新川路 625 弄 10 号华沙新村第 1 幢 601 室房屋质量鉴定 1999.11.25 浦东新区人民法院
5、绍兴市天成花园 9 号楼房屋质量检测 1998.11.15 浙江省高院
6、上海良丰大厦房屋试验与鉴定研究 1997.3.14 上海市二中院
7、上海良丰大厦房间隔声试验研究 1997.3.14 上海市二中院
8、大东模型塑胶(上海)有限公司成型车间房屋质量检测 浦东新区人民法院
9、扬州市西门街三期南 13#楼 B 区 11 轴~12 轴二层楼板质量检测报告 扬州市中级人民法院
10、哈密路 1719 弄 7 号 201 房屋检测 长宁区人民法院
11、浙江省金华市明珠大厦房屋裂缝与渗漏检测 金华市中级人民法院
12、云锦路 201 弄 10 号等房屋质量检测 2004.11.15~2004.12.20 徐汇区人民法院
13、上海市德威五金有限公司生产楼辅助楼房屋质量检测 上海市一中院
14、上海市南汇射击俱乐部堤坝垮塌事故分析 南汇区人民法院
15、中山北二路 99 弄 42 号 102 室外墙渗漏检测 上海仲裁委员会
16、杨浦区菊花大厦抗震鉴定 杨浦区人民法院

(十四) 建设工程质量检测与事故分析

1、浦东国际机场主进场路 5 标预制桩高应变测试	1997.9.4	机场指挥部
2、上海市外环线桩基测试	1997.8.19	外环线指挥部
3、逸仙路高架道路桩基测试	1997.12.10	逸仙路高架道路指挥部
4、杨树浦路 1111 弄 2 号 302 室卧室楼板质量检测报告		上海烟草集团房地产经营公司
5、杨树浦路 1111 弄 2 号 302 室卧室现浇混凝土板带模型载荷试验报告		上海烟草集团房地产经营公司
6、嘉定区新成路街道贝嘉儿幼儿园屋面梁裂缝检测报告		
7、嘉定区新望花园 1 号、2 号、3 号楼板裂缝检测报告		上海市新望房地产经营公司
8、嘉定区塔城东路 255 弄 1 号、9 号房屋面倾斜检测		上海市新望房地产经营公司
9、嘉定区和政路道路结构层检测		新成街道办事处
10、长兴均化库厂房倒塌事故分析		江阴新桥建筑安装公司
11、南汇宣桥镇胡桥中心村民房屋质量检测	2003.10.15~11.16	南汇宣桥镇政府中心村建设指挥部
12、华东师范大学闵行校区在建地下车库上浮损伤检测与安全咨询		
13、常州名园在建地下车库上浮损伤检测与安全鉴定		
14、上海市闵行区七宝地下车库上浮情况分析处理咨询报告		
15、嘉兴创新园 2#地下车库上浮后工程质量检测报告		
16、远东大道迎宾立交 S3 匝道 X1 号墩桩基大应变测试	1996.12.3~1996.12.30	远东大道指挥部
17、远东大道桩基小应变测试	1996.12.23	远东大道指挥部
18、上海市职工住宅开住 25 号楼阳台载荷试验	1996.9.27	
19、远东大道迎宾立交 S3 匝道桩基大应变测试	1997.1.8	远东大道指挥部

(十五) 加固改造与事故处理的设计与施工

1、长征医院电梯火灾后事故处理方案设计	长征医院
2、上海卷烟厂工房屋面火灾后屋面结构处理方案设计	上海卷烟厂
3、上海市院士风采馆改造抗震鉴定及加固设计、施工	
4、上海市远洋广场改造抗震鉴定及加固设计、施工（办公楼改宾馆）	昂立集团
5、上海市德威五金有限公司生产楼辅助楼损坏修复设计	上海市一中院
6、宜兴中星办事处改造加固设计（大梁高度减少）	上海市中星集团
7、长宁国际学校虹桥校区抗震加固设计	长宁国际学校
8、市东中学抗震加固设计与施工	
9、建青中学改造抗震加固设计与施工	

10、松林路 95 号底层防潮层修复设计与施工	上海市中星集团
11、廖金兴大厦逆作法施工施工缝高压灌浆施工	上海市二建公司
12、解放日报印务中心印报机设备基础立柱加固施工	上海华谊集团
13、浦扬园酒店楼面震颤加固设计与施工	浦扬园酒店
14、上海冶金高等专科学校第二教学楼加固设计与施工	上海市七建公司
15、杨浦城投公司办公楼档案室改造加固设计与施工	杨浦城投公司
16、杨浦区老年医院病房楼(8 号楼)楼梯加固设计与施工	杨浦区老年医院
17、杨浦建委会议室楼面梁加固设计与施工（钢筋锈蚀）	杨浦建委
18、金山临潮小学礼堂屋面梁加固设计与施工（大跨薄腹梁）	金山临潮小学
19、松隐中学教学楼加固设计与施工（混凝土强度偏低、裂缝、露筋）	松隐中学
20、福泉商厦加层改扩建加固设计与施工（办公楼改商住楼）	福泉房产
21、愚园中学教学楼改造加固设计	长宁区教育局
22、黄兴小学教学楼加固设计与施工（混凝土强度偏低）	杨浦区教育局
23、嘉定一中体育馆加固设计与施工（水泥安定性不良）	嘉定区教育局
24、长宁国际学校虹桥校区整体改造抗震加固设计与施工（拆墙、拆柱）	长宁国际学校
25、杨树浦路三层办公楼整体改造抗震加固设计（拆墙、拆柱）	
26、控江路 2026 号整体改造加固设计（地铁 M8 线施工影响损坏及周边基坑施工影响）	杨浦区房地局
27、鞍山七村 25 号整体改造加固设计（地铁 M8 线施工影响损坏）（附带平改坡）	杨浦区建交委
28、鞍山二村 74-75 号修复设计（地铁 M8 线施工影响损坏）	杨浦区建交委
29、鞍山七村 4-5 号整体改造加固设计（地铁 M8 线施工影响损坏）（改独门独户）	杨浦区建交委
30、虹桥中学教学楼抗震加固设计	长宁区教育局
31、绿苑小学教学楼抗震加固设计	长宁区教育局
32、适存小学教学楼抗震加固设计	长宁区教育局
33、淞虹路小学教学楼抗震加固设计	长宁区教育局
34、西延安中学教学楼抗震加固设计	长宁区教育局
35、六一小学教学楼抗震加固设计	杨浦区教育局
36、翔殷路小学教学楼抗震加固设计	杨浦区教育局
37、上音杨浦初中教学楼抗震加固设计	杨浦区教育局
38、杭州生物医药创新基地地下室配电房楼面加固设计与施工（预应力钢管混凝土立柱调整）	中天集团
39、中星沪太路宜川路街面房大梁加固设计与施工（混凝土碱骨料反应）	中星集团
40、中星凉城剪力墙修复设计与施工（装修损坏剪力墙钢筋）	中星集团

(十六) 渗漏处理的设计与施工		
1、嘉定区塔城东路 255 弄 18 号、22 号房屋面渗漏分析与处理	2000.10.24	上海市新望房地产经营公司
2、嘉定区迎圆路 351 弄 11 号 602 室墙面渗水分析与处理	2000.11.7	上海市新望房地产经营公司
3、嘉定区仓场路 330 弄 10 号别墅房屋渗漏分析与处理		
4、上海第二军医大学食堂、浴室屋面裂缝渗漏分析与处理		上海第二军医大学
5、新闻路 168 号 2301 室卫生间地坪渗水分析与处理	2003.10.15~11.16	上海金外滩集团发展有限公司
7、好丽友食品(上海)有限公司厂房、办公楼屋面、外墙渗漏分析与处理		好丽友食品公司
8、宝钢集团企业开发总公司厂房、办公楼等房屋渗漏分析与处理	2004.8.17~2004.10.17	宝钢集团公司
9、江阴市政府大厦房屋渗漏分析与处理		江阴市政府机关事务管理局
10、上海市闵行区七宝地下车库上浮事故处理方案设计与施工	2011.8	
11、嘉定一中体育馆游泳池及外墙渗漏处理方案设计与施工		嘉定区教育局
12、常州名园在建地下车库上浮裂缝、渗漏处理方案设计与施工		
13、嘉兴创新园 2#地下车库上浮裂缝、渗漏处理方案设计与施工		
14、昆山恒海国际花园二期工程别墅渗漏裂缝、渗漏处理方案设计与施工		
15、昆山恒海国际花园三期地下室裂缝、渗漏处理方案设计与施工		
16、五角场盛世豪园商住楼地下车库抗浮堵漏方案设计与施工		
17、江阴新梅豪不斯卡商务、办公楼、住宅综合体墙面、屋面、地下室大面积渗漏分析及处理		
18、浙江省金华市明珠大厦房屋、地下游泳池裂缝与渗漏分析与处理		金华市中级人民法院
19、上海市德威五金有限公司生产楼、辅助楼屋面、墙面渗漏分析与修复设计		上海市一中院
20、中山北二路 99 弄 42 号 102 室石材外墙渗漏分析与处理		上海仲裁委员会
21、延安西路 1160 号地块基坑围护墙渗漏处理	2005.3	中建八局
22、贵阳市金阳新区东景五星级酒店及办公楼综合体项目地下室上浮裂渗分析与处理		
23、建青中学体育馆钢结构屋面渗漏分析与处理		
24、江南造船厂总装车间钢结构网架屋面渗漏分析		
25、西藏中路 656 号美华大楼玻璃幕墙、面砖、马赛克外墙渗漏分析与处理		上海燃气市北公司
26、大东模型塑胶(上海)有限公司成型车间外墙、屋面渗漏分析与处理		浦东新区人民法院
(十七) 地基处理与房屋纠偏的设计与施工		
1、武进税务干部学校纠偏与地基加固设计与施工(地基沉降不稳定)		武进税务干部学校
2、长桥六街坊 13#、14#楼房屋纠偏设计		上海市中星集团
3、嘉定朱桥中学教学楼纠偏设计与施工		嘉定朱桥中学
4、虹桥中学教学楼纠偏设计与施工		长宁区教育局
5、延安西路 1160 号地块基坑施工影响小洋楼保护纠偏与地基加固设计与施工	2005.3	中建八局

6、上海女子监狱 1 号楼地基加固设计与施工	上海女子监狱
7、福泉商厦加层改扩建加固设计与施工（办公楼改商住楼）	福泉房产
8、嘉定一中体育馆地基基础加固设计与施工	嘉定区教育局
9、控江路 2026 号整体改造加固设计（地铁 M8 线施工影响损坏及周边基坑施工影响）	杨浦区房地局
10、鞍山七村 25 号整体改造加固设计（地铁 M8 线施工影响损坏）（附带平改坡）	杨浦区建交委
11、普陀区桃浦镇春光村武威路 1019 弄 676 号纠偏及地基加固设计与施工	桃浦镇春光村委会
12、彭浦新村 239 街坊改造锚杆静压桩地基加固	
13、上海市嘉定区迎宾路商住楼纠偏及地基加固设计与施工	
14、苏州惠氏制药厂厂房加层地基加固设计与施工	
15、振华港机长兴岛生产基地地基加固设计与施工	
16、昆山市长江联合大厦高层加层地基加固设计与施工	
17、江南造船厂长兴岛基地 3#船台地基加固与抬升设计与施工	
18、轨道交通 M8 线延吉七村 6 号楼抽浆法纠偏、插筋桩加固设计与施工	
19、基坑周边耀华路 500 弄 6 号楼房屋纠偏与地基基础加固设计与施工，倾斜率自 10.03%纠到≤4%	
20、北竿山艺术中心 15 幢楼地下室钢管注浆桩抬升、纠偏设计与施工	
21、四川成都汉能 300MW 薄膜太阳能电池生产项目生产厂房分层注浆地基加固工程	
22、静安寺交通枢纽基坑周边麦克公寓分层注浆地基加固与抬升设计、施工	
23、新世界大饭店分层注浆地基加固设计与施工工	
24、华虹 NEC 危险品仓库分层注浆地基加固设计与施工	
25、上海金泽新建葡萄厂分层注浆插筋桩基础加固	
26、中山路虹三实业楼抽浆法纠偏设计与施工，从倾斜率 8.4%纠到 1.6%	
27、潼港二村 46~48 号住宅楼抽浆法纠偏、插筋桩加固设计与施工，倾斜率 11.3%纠到≤4%	
28、闸北大酒店(共和新路 2501 号)抽浆法纠偏、插筋桩加固设计与施工	
29、花木芳华路 478 弄 6 号楼抽浆法纠偏、插筋桩加固设计与施工，倾斜率 10.8%纠到≤4%	
30、金厦苑二期二号房抽浆法纠偏、插筋桩加固设计与施工	
31、松江区泗陈路 388 号云顶 49 幢别墅抽浆法纠偏、钢管旋转注浆桩加固设计与施工。倾斜率 17%纠到≤4%	
32、上海紫大机械厂精密印刷车间抽浆法纠偏，插筋桩加固设计与施工	
33、丹徒路 340 弄 1—2 号楼抽浆法纠偏设计与施工，倾斜率 10.89%纠到≤4%	
34、西江湾路过 240 号甲楼抽浆法纠偏设计与施工，倾斜率自 10.2%纠到≤4%	
35、绿地房产公司昆山 4 栋连体别墅“微创”抽浆法纠偏、钢管旋转注浆桩加固	
36、上海松江方东村 31 号 6 层楼房“微创”抽浆法纠偏、钢管旋转注浆桩加固。从 18%纠到≤2.5%	
37、上海吴淞中心医院 6#楼五层纠偏，倾斜率最大为 9.92%纠到 2.22%，工期 30 天	

(十八) 地下空间开发的设计与施工

- 1、宜兴某商铺底层加地下室改造加固设计与施工
- 2、上海市长宁区某高档别墅扩建地下室基坑围护与地下室逆作法施工设计与施工 上海市轻纺集团
- 3、上海外滩元芳弄 25 号私人住所室内地下游泳池扩建设计与施工
- 4、上海市市府实事工程浦东白莲泾排水改造系统提升泵站围护基坑工程设计与施工
- 5、武夷路上海质量科学研究院科研楼地下车库基坑围护工程设计与施工
- 6、浦东新区某高档别墅扩建地下室与车库基坑围护与地下室逆作法施工方案设计

[1] 韩兵康, HanBingkang. MTMD 控制非对称结构扭转振动的最优位置[J]. 振动与冲击, 2005, 24(3):27-31.

摘要: 研究了用两组相同的 MTMD 来控制非对称结构扭转振动的最优位置. MTMD 具有相同的刚度和阻尼系数但不同的质量. 基于导出的设置 MTMD 时结构扭转角位移传递函数, 建立了扭转角位移动力放大系数解析式. MTMD 最优参数的评价准则定义为: 结构最大扭转角位移动力放大系数的最小值的最小化. MTMD 的有效性评价准则定义为: 结构最大扭转角位移动力放大系数的最小值的最小化与无 MTMD 时结构最大扭转角位移动力放大系数的比值. 基于定义的评价准则, 研究了标准化偏心系数(NER)和扭转对侧向频率比(TTFR)对不同位置 MTMD 最优参数和有效性的影响.

[2] 韩兵康, 张丽卿, 李春祥. 砖木结构类保护性建筑的灾害分析与防治对策[J]. 自然灾害学报, 2004, 13(6):105-111.

摘要: 系统阐述了砖木结构类保护性建筑的灾害机理, 分析了邻近工程施工对这类保护性建筑的影响, 讨论了砖木结构类保护性建筑的结构抗震性能和建筑防火问题。同时, 针对砖木结构类保护性建筑的灾害机理, 提出了这类保护性建筑的维护与防治对策。

Abstract: The disaster mechanism of the brick-wood structure type protective buildings is demonstrated in this paper systematically. The analysis is tamed out for the effects of civil engineering construction in the neighborhood on the brick-wood structure type protective buildings. The earthquake resistant and fire resistant performance is discussed for the protective brick-wood historical buildings. Simultaneously, in accordance with the disaster mechanism, the maintenance and disaster prevention countermeasures are presented for brick-wood structure type protective buildings.

[3] 韩兵康, 杜冬. 结构半主动调谐质量阻尼器的发展[J]. 振动与冲击, 2005, 24(2):46-49.

摘要: 简要回顾了土木工程结构调谐质量阻尼器减振的研究. 介绍了半主动调谐质量阻尼器(SATMD)的发展动态, 包括其控制思想和最优化方法. 重点评述了阻尼调整型、刚度调整型和初始条件调整型三种类型的半主动调谐质量阻尼器(SATMD). 指出了单纯的阻尼调整型发展已趋于极限, 而刚度调整型和初始条件调整型将是半主动调谐质量阻尼器(SATMD)最有潜力的新方向. 同时指出了目前半主动调谐质量阻尼器研究中存在的若干问题.

[4] 韩兵康, 张静怡. 土木工程结构鲁棒控制的发展[J]. 地震工程与工程振动, 2004, 24(6):131-135.

摘要: 评述了结构控制的发展, 指出发展结构鲁棒控制策略的重要性。重点评述了结构双重调谐质量阻尼器(DTMD)和多重双重调谐质量阻尼器(MDTMD)的控制策略, 提出了需进一步发展主动双重调谐质量阻尼器(ADTMD)和主动多重双重调谐质量阻尼器(AMDTMD)控制策略、此外, 评述了结构鲁棒控制的设计准则与高层建筑和大跨桥梁在风与地震作用下的统一自适应主动鲁棒控制策略。

[5] 韩兵康, 张静怡. 结构主动与被动调谐质量阻尼器的减震性能[J]. 地震工程与工程振动, 2004, 24(5):105-109.

摘要: 使用 Kanai-Tajimi 地震动模型,建立了主动调谐质量阻尼器(ATMD)结构系统的传递函数.将 ATMD 最优参数的评价准则定义为:设置 ATMD 结构均方根位移(解析式)的最小值的最小化.将 ATMD 有效性的评价准则定义为:设置 ATMD 结构均方根位移的最小值的最小化与未设置 ATMD 结构的均方根位移之比.根据选择的评价准则,评价了地震卓越频率系数(EDFR)对 ATMD 抗震控制性能的影响.同时也评价了 EDFR 对被动调谐质量阻尼器(PTMD)抗震控制性能的影响.

[6] 韩兵康, 李春祥. 基于系统参数组合多重调谐质量阻尼器减震模型冲程的评价[J]. 振动与冲击, 2007, 26(2):102-104.

摘要: 多重调谐质量阻尼器(MTMD)是由多个固有频率成线性分布的调谐质量阻尼器(TMD)组成。可能的 MTMD 系统参数组合形成 5 种 MTMD 即 MTMD-1-MTMD-5。基于建立的 MTMD-1-MTMD-5 结构系统传递函数和动力放大系数(DMF), 定义了求解 MTMD-1-MTMD-5 最优参数的优化准则。利用求得的 MTMD-1-MTMD-5 最优频率间隔、阻尼比和调谐频率比, 评价了 MTMD-1-MTMD-5 的冲程情况。

[7] 韩兵康. 加大截面法加固混凝土轴压中长柱纵向稳定系数的试验及理论研究[D]. 同济大学, 1996.

摘要: 该文针对实际工程中常用的加大截面法加固混凝土结构的加固方法,采用以全过程分析为基础的计算机模拟试验的研究方法,结合二根柱的试验,对加大截面法加固混凝土轴压中长柱的纵向稳定系数,进行了深入详细的分析研究;同时对加大截面法加固混凝土轴压短柱的承载力问题进行了计算机模拟试验研究和理论推导。

[8] 韩兵康, 林水珍, 朱伯龙. 上海嘉里商务中心幕墙预埋件现场试验[J]. 四川建筑科学研究, 1999(1):54-56.

摘要: 本文针对幕墙各种预埋件形式, 设计了一种通用, 快速, 简单方便, 安全, 可重复使用的试验装置, 实践证明, 该试验装置受力明确, 可以很好地模拟预埋件实际工作状态。

[9] 韩兵康. 加大截面法加固混凝土轴压中长柱纵向稳定系数的试验及理论研究[M].

[10] 韩兵康. 钢筋混凝土柱加大截面加固的试验研究[M].

[11] 韩兵康. 钢筋混凝土柱加大截面加固的试验研究[D]. 同济大学, 1993.

[12] 韩兵康, 张竹庭. 设抗浮桩的大型地下车库不均匀上浮有限元分析及处理[J]. 工业建筑, 2011(s1):441-444.

摘要: 在结构抗浮设计中,常采用抗浮桩作为结构抗浮措施,然而在施工过程中,当地下水位突然升高造成浮力急剧增大时,往往造成抗浮桩的失效甚至结构的开裂破坏。对某一设有抗浮桩的大型地下车库的上浮事故,进行结构有限元分析,了解结构不均匀上浮的变形特征、结构损坏状况以及抗浮桩破坏情况,并进行了应急处理及加固方案分析,可供类似工程参考。

[13] 韩兵康, 徐赞云, 张竹庭. 某地下车库不均匀上浮事故有限元分析[J]. 结构工程师, 2008, 24(6):57-62.

摘要: 单层大型地下车库在施工过程中,由于未及时覆土或突降暴雨而常发生上浮事故。本文根据亲身经历的某一大型地下车库上浮事故,利用有限元分析软件,对该大型地下车库不均匀上浮过程进行整体受力模拟,并将分析结果与现场检测结果进行对比,分析结果与实际情况吻合良好。该方法可以模拟事故发生时结构的内力、变形和构件的受损原因和受力状况,克服以往仅根据规范要求抗浮验算的局限性,从而使后期加固工作更有针对性。

[14] 韩兵康, 张嫣妮. 某高层建筑幕墙玻璃破坏原因分析[J]. 结构工程师, 2011, 27(3):51-56.

摘要: 在玻璃幕墙设计时,设计者都会注意考虑风荷载及地震作用效应,但却经常容易忽略其他因素的影响。幕墙结构上的热应力及其作用效果同样也是玻璃幕墙结构上非常重要的荷载形式,尤其是幕墙玻璃出现瑕疵或被切割时,会对玻璃幕墙结构产生致命的破坏。以某大楼玻璃幕墙破坏工程为例,利用有限元软件 ANSYS 的热应力分析模块对玻璃破坏的原因进行分析。其分析结果能为同类工程的检测提供参考,同时使后期的加固更具有针对性。

[15] 韩兵康, 朱伯龙, 陆小平. 上海船厂船坞改建工程水下爆破及桩基施工对周边民房影响的振动测试与评估[J]. 四川建筑科学研究, 2000, 26(4):25-27.

摘要: 爆破振动和沉桩振动影响是近年来居民极为敏感的问题,现场振动测试方法由于能提供可比的定量数据和定性描述而受到各方普遍的认可。本文介绍了一个重点工程施工影响范围内民房振动测试的全过程和评估方法,并通过测试对施工参数提出了一些合理化建议。

[16] 韩兵康, 李明. 某大型地下车库变形缝渗漏综合治理技术[J]. 施工技术, 2016, 45(3):63-67.

摘要: 地下结构上浮、变形缝渗漏等问题在地下工程中时有发生。地下室底板不均匀上浮、坡道滑移等原因会造成变形缝两侧出现高差、变形缝宽度变大、止水带断裂,导致变形缝处渗漏,在治理过程中存在很大困难。结合某大型地下室变形缝渗漏治理,引进新型变形缝堵漏技术,同时对变形缝宽度进行缩缝修复,采用"自上而下"钢管注浆桩抗浮锚杆控制上浮,取得了比较好的治理效果。

[17] 韩兵康, 朱伯龙, 陈丽燕. 加大截面加固砼轴压中长柱纵向稳定系数的试验研究[J]. 四川建筑科学研究, 1995(4):15-18.

摘要: 本文针对实际工程中经常采用的加大截面加固钢筋混凝土结构的方法,进行了中长柱加大截面加固的试验研究,通过对试验结果的分析,文中认为,加固柱纵向稳定系数采用《混凝土结构规范》G B J 1 0 — 8 9 规

定的一般钢筋混凝土中长柱的纵向稳定系数基本上是可行的。

[18] 韩兵康, 赵文娟. 某剧场混凝土拱形薄板屋架现场荷载试验[J]. 四川建筑科学研究, 2010, 36(6):70-72.

摘要: 在既有房屋的改造中,经常遇到屋面需要增加防水层或保温层而增加荷载,而屋面结构特别是混凝土拱形薄板屋架由于杆件多且细,不易通过现场检测所获取的数据正确计算其结构性能。通过对混凝土拱形薄板屋架进行非破坏性现场荷载试验,可以全面检验其结构性能,是比较可行且可靠的方法。选取某剧场一榀有代表性的混凝土拱形薄板屋架进行加载图式和装置的设计,考虑实际情况确定试验荷载和加载制度,根据试验目的和场地条件确定试验量测内容、选择量测方法和测点布置,通过对试验数据的整理和分析,获得了该屋架在正常使用状态下的结构性能,为改造设计提供了依据,也为今后此类工程问题的解决提供了途径。

Abstract: Through the non—destructive field load testing on the concrete arch thin—sheet roof truss. we call totally inspect its structural performance, it is quite a feasible and reliable method. Selecting a representative concrete arch thin-sheet roof truss of some theater to carry on the loading diagram and equipment design, considering the actual situation to determine the testing load and loading system, according to the target of the testing and the location condition to determine the measuring content, choice measuring method and settlement investigation point, through the analysis and collation of the test date, we can obtain the structural performance of this roof truss under serviceability states, which provides the basis for the transformative design.

[19] 韩兵康, 朱伯龙. 采用喷射钢纤维混凝土对地下室墙板"烂根"现象进行加固施工[J]. 建筑施工, 2001, 23(1):55-56.

摘要: 采用室内双液注浆防水帷幕配合掺加抗渗微晶的喷射钢纤维混凝土加固方法,在居民不搬迁、地面不开挖、不支模情况下,成功地解决了地下室墙板'烂根'问题。

[20] 朱炎兵, 韩兵康, 胡再龙. 顶层空旷多层砌体结构的弹塑性地震反应分析[J]. 振动与冲击, 2004, 23(4):135-138.

摘要: 将顶层空旷多层砌体结构简化为串并联多质点分析模型,利用动力弹塑性时程分析方法对其进行了数值分析.系统地研究了顶层空旷多层砌体结构层数、顶层边墙与中柱刚度比和顶层横墙间距等参数变化时这种结构地震作用的一些变化规律。

[21] 李春祥, 都敏, 韩兵康. 基于 AR 模型模拟超高层建筑的脉动风速时程[J]. 地震工程与工程振动, 2008, 28(3):87-94.

摘要: 风荷载是超高层建筑设计的主要荷载之一,而且通过风振时域分析可以更全面地了解超高层 建筑风振响应特性,更直观地反映超高层建筑风致振动控制的有效性。因此,本文使用线性滤波法 即自噪声滤波法(white noise filtration method, WNFM)中的自回归(auto—regressive, AR)模型模拟 超高层建筑的风速时程。首先,考虑超高层建筑风速时程的时间和空间相关性,导出了四阶 AR 模 型的参数表达式。接着,基于 AR 模型模拟了一幢高度为 200 m 超高层建筑的风速时程。最后,通过 比较模拟风速功率谱、模拟自相关函数和互相关函数与目标风速功率

谱、目标自相关函数和互相关函数的吻合程度，验证基于 AR 模型模拟超高层建筑风速时程的可行性。

Abstract: Wind loading is one of the main loads in the design of super-tall buildings. Likewise, we may gain an insight into the dynamic characteristics of vibrations of super-tall buildings under wind loads via the time history analysis. The effectiveness of wind vibration control of super-tall buildings can be intuitively displayed in the time domain. Therefore, the main objective of the present paper is to simulate the fluctuating wind velocity time series of super-tall buildings with resorting to the auto-regressive(AR)model in the white noise filtration method(WN-FM). Firstly, considering both the time and space correlativity of the wind speed time series of super tall buildings, the parametric expressions of the AR model have been derived with four orders. Subsequently, the simulation of the wind velocity time histories of a super-tall building with 200 m height has been carried out on the basis of the AR model. Eventually, through comparing the simulated values of wind speed spectral density, auto-correlation and CROSS correlation functions with the corresponding targets, the flexibility is then corroborated for simulating the fluctuating wind speed time series of super-tall buildings by using the AR model.

[22]张丽卿, 韩兵康, 李春祥. 基于振动的土木工程结构损伤诊断研究进展[J]. 自然灾害学报, 2004, 13(5):136-143.

摘要: 评估土木工程结构的安全状况已成为当前国际上土木工程师十分关心的问题,也是当前国际上 的研究热点。在综述近几年国内外有关结构损伤诊断研究进展的基础上,重点介绍了基于振动的结构损伤诊断方法的发展,并对相关问题进行了讨论和评述。最后对基于振动的结构损伤诊断的未来 研究提出了几点建议与展望。

Abstract: Evaluation of civil engineering structures safety has become a concerned problem to civil engineers at home and abroad. Likewise, the safety assessment of civil engineering structures is recently being addressed by many researchers as a key issue. On the basis of reviewing the recent researches on the structural damage diagnosis. a comprehensive survey on the vibration-based damage detection of civil engineering structures is given in this paper. Simultaneously, several suggestions for future research are presented.

[23] 李春祥, 韩兵康, 杜冬. 结构的多重双重调谐质量阻尼器控制策略[J]. 振动与冲击, 2007, 26(2):25-28.

摘要: 提出多重双重调谐质量阻尼器(MDTMD)控制策略。MDTMD由任意奇数或偶数的双重调谐质量阻尼器(DTMD)组成。MDTMD参数组合形成十种MDTMD模型即MDTMD(I-1)-MDTMD(I-5)模型和MDTMD(II-1)-MDTMD(II-5)模型。利用定义的优化准则,评价了MDTMD(I-1)的控制性能。数值结果表明MDTMD(I-1)比DTMD和基于任意整数多重调谐质量阻尼器(MTMD)和基于奇数MTMD具有更好的有效性和鲁棒性。但MDTMD冲程大于DTMD冲程;MDTMD小TMD冲程大于MTMD冲程。

[24] 李春祥, 韩兵康, 杜冬. 结构双重调谐质量阻尼器(DTMD)控制策略研究[J]. 土木工程学报, 2005, 38(5):1-9.

摘要: MTMD比TMD具有明显高的鲁棒性.然而,MTMD中各质量块位移不同,总的来说,呈递增或递减趋势,因而各质量块的有效性未得以充分发挥.再者,MTMD比TMD复杂,因而其造价比TMD高.鉴于此,本文提出一种新控制策略--双重调谐质量阻尼器(DTMD).基于定义的二类最优化目标函数,评价了双重调谐质量阻尼器(DTMD)的控制性能.数值结果表明,利用第二类设计准则(新准则)设计的双重调谐质量阻尼器(DTMD)与由5个TMD组成的MTMD具有

近似相同的有效性和鲁棒性.因此,双重调谐质量阻尼器是一种先进的控制策略.

Abstract: The displacement of every mass block in the MTMD is different, and generally assumes either an increasing or decreasing trend, which implies that the maximum effect of every mass block cannot be achieved. Furthermore, the MTMD is more complex and costly than TMD. In view of this, a new control strategy in double tuned mass dampers (DTMD) is for the first time, proposed to attenuate the undesirable oscillations of structures underground acceleration. Based on two objective functions for optimization, parametric studies are performed to assess the control performance of the DTMD. The results indicate that the DTMD can render better effectiveness and robustness than the TMD. More importantly, the DTMD designed using the new design criterion practically provides the same effectiveness and robustness as the MTMD composed of 5 TMTDs. This proves that the DTMD is an advanced control strategy.

[25] 李春祥, 韩兵康, 张丽卿. 地震作用下偏心结构最优 ATMD 控制的冲程评价[J]. 振动与冲击, 2007, 26(6):41-46.

摘要: 评价了偏心结构主动调谐质量阻尼器(ATMD)减震时的冲程。基于建立的地震地面运动模型下偏心结构动力方程及其状态空间方程, ATMD 最优参数的评价准则定义为设置 ATMD 结构的最大位移动力放大系数的最小值的最小化。ATMD 有效性评价准则定义为设置 ATMD 结构的最大位移动力放大系数的最小值的最小化与未设置 ATMD 结构的最大位移动力放大系数之比。ATMD 冲程的评价准则定义为: ATMD 相对位移的最大位移动力放大系数。使用定义的评价准则, 首先获得 ATMD 的最优参数, 进而评价 ATMD 的冲程。

[26] 蒋首超, 李国强, 韩兵康, 等. 某钢结构梯架火灾后的性能分析与鉴定[J]. 结构工程师, 2009, 25(1):124-127.

摘要: 根据钢结构火灾后性能分析与鉴定的一般程序、内容及方法, 针对一个受火钢结构梯架进行了火灾后钢材现场取样拉伸试验以及化学锚栓拉拔试验, 记录了现场结构外观测量结果以及火灾后的结构变形。发现结构焊缝处有多处裂缝以及有部分构件因受火出现局部屈曲。随后采用测得的火灾后结构变形数据, 建模分析了该火灾后的结构受力性能并与火灾前结构受力进行了对比, 结合现场取样拉伸试验和锚栓拉拔试验结果对结构承载能力进行了验算。并对原结构中出现的构件局部屈曲与焊缝裂缝给出了修复意见。最后对火灾后钢结构的分析与鉴定中需注意的问题做了探讨, 强调火灾后钢结构的检测不能忽视节点区域焊缝裂缝的检查。

Abstract: According to general procedures of steel structural appraisal after fire, the tensile tests of steel materials and chemistry anchor bolt tensile tests were carried out. The structural deformations were also measured after fire with records of structural members representative measurements. The welds cracks and local buckling were found at steel joints. With the obtained deformation data, a new analysis modal was been built. The structure carrying capacity was been checked out with the former tests results and new modal analysis results. The appraisal suggestions were given for local buckling members and welding cracks. Some factors affecting the validity of the appraisal, especially the welds cracks inspection, were discussed.

[27] 李春祥, 韩兵康, 杜冬. 结构双层多重调谐质量阻尼器(DMTMD)控制策略的鲁棒性评价[J]. 地震工程与工程振动, 2004, 24(5):97-104.

摘要: 基于定义的二类优化目标函数,评价双层多重调谐质量阻尼器(DMTMD)控制策略对漂移频率系数(DFR)摄动

的鲁棒性.数值研究表明,使用第二类优化准则设计的 DMTMD、双重调谐质量阻尼器(DTMD)和多重调谐质量阻尼器(MTMD)比使用第一类优化准则设计的 DMTMD、DTMD 和 MTMD 具有更高的对 DFR 摄动的鲁棒性.而且,使用第二类优化准则设计的总数为 4 的 DMTMD、DTMD 和总数为 11 的 MTMD 具有近似相同的对 DFR 摄动的鲁棒性.

[28] 李辉, 韩兵康, 吴水根. 外墙真石漆施工质量事故分析[J]. 建筑施工, 2006, 28(7):543-544.

摘要: 真石漆是建筑饰面应用较多的材料之一, 从其组成及对性能的影响入手, 结合工程案例, 分析了外墙真石漆施工质量事故产生的原因, 并根据真石漆施工工艺的特点, 提出了改进措施, 对提高真石漆施工质量具有一定的参考价值。

[29] 董徐奋, 韩兵康, 吴帆. 基于 ANSYS 的木桁架齿连接应力状态分析[J]. 结构工程师, 2010, 26(1):33-36.

摘要: 通过有限元分析了木结构齿连接的工作特性, 目前, 齿连接的设计简化了接触表面的应力分布, 而忽略了压杆与弦杆夹角 α 对接触面应力分布的影响. 这样的假设, 与现实不符, 也不能客观地评估应力应变状况. 因此采用数值模拟的方法以更客观地评估齿连接节点的工作性能, 优化节点的几何形态. 应用 Ansys 软件, 模拟不同的夹角 α , 发现了压杆和弦杆在不同夹角 α 情况下, 压杆端承面和剪力面应力分布的特点, 同时接触表面的摩擦作用也影响弦杆的剪切强度, 揭示了压杆与弦杆夹角是接触面应力分布的决定因素。

[30] 金晨, 韩兵康. 某轻钢结构厂房施工倒塌事故分析[J]. 建筑施工, 2004, 26(4):349-350.

摘要: 通过对某轻钢结构厂房倒塌事故的分析, 强调按建设工程程序和规范施工对安全施工的重要性。

[31] 王梦磊, 韩兵康. 某深基坑施工对周边房屋影响案例分析[J]. 低温建筑技术, 2015, 37(4):107-109.

摘要: 首先从理论层面分析了深基坑施工对土体扰动的机理. 想要准确的了解房屋在深基坑施工影响下的变形情况, 需要考虑房屋土体之间的相互作用, 对基坑-土体-房屋进行整体分析. 对实际工程案例成果进行了概括论述, 为基坑施工对周边房屋的影响提供参考。

[32] 李宏程, 韩兵康. BIM 技术在消防疏散系统中的应用[J]. 建筑技术开发, 2017, 44(1):1-2.

摘要: 以消防疏散系统结构和人员安全疏散判定理论为基础, 介绍 BIM 技术在大型和小型建筑消防疏散中的应用. 以上海市儿童福利院消防疏散演练为例, 分析人员特性和建筑结构子系统, 可知模拟疏散时应考虑人员拥挤、通道宽度、疏散设施成为次生障碍物等因素。

[33] 李宏程, 韩兵康. BIM 技术在房屋运维系统中应用研究[J]. 建筑技术开发, 2016, 43(6):108-110.

摘要: 运用 Autodesk Revit 软件, 建立房屋和设备 BIM, 使用 SQL Server 软件建立运维数据库, 实现与 BIM 信息的集成过程. 以上海市儿童福利院专家决策系统、房屋修缮、设备运维为例, 实现 BIM 技术在房屋运维系统中应用。

[34] 应惠清, 韩兵康. 现代土木工程施工[M]. 清华大学出版社, 2015.

本书总结了国内外近几十年来土木工程施工领域的理论研究成果和工程实践经验，系统地介绍了现代土木工程施工的发展及相关新技术、新工艺和新设备。全书共 6 章，包括深基坑工程的设计与施工、现代混凝土施工技术、工业化模板体系和脚手架、预应力混凝土结构和装配式混凝土结构施工、大跨度钢结构施工以及建筑物的维护与改造加固。本书可作为高等院校土木工程专业的研究生教学参考书，也可供土木工程专业科研、教学及工程技术人员学习和参考。

[35]奥斯卡, 韩兵康.水泥基渗透结晶型材料提高混凝土抗压和抗渗性能的试验研究[D].同济大学,2017.

摘要：水泥基渗透结晶型材料是一种通过自身含有的有效成分在混凝土毛细孔和微裂纹内渗透，与水泥水化产物反应生成不溶于水的结晶体，堵塞毛细孔道和微裂纹，提高混凝土的强度和耐久性。

主要介绍水泥基渗透结晶型材料对既有建筑混凝土强度和耐久性的作用机理，影响钢筋混凝土结构耐久性和强度的因素和目前工程上其他经常采用的混凝土保护材料。描述结晶沉淀剂与水泥石中氢氧化钙的化学反应和结晶沉淀剂对混凝土的促凝作用和解决方法，金属离子络合剂对涂层和混凝土中的钙离子螯合作用和对水泥基渗透结晶材料的缓凝作用机理。

本文根据混凝土的化学组分、孔结构、孔隙分布、水泥水化过程中析出的产物研究，分析出能够作为水泥基渗透结晶型材料活性化学物质。通过做大量的试验，选择出了一个有效的活性化学组合。配制出来 TA 涂料的基本组分为：硅酸盐水泥、精制石英砂、一级粉煤灰、KN、SN、SA、CN、GN 和可再分散性乳胶粉。

由试验结果可知，两种结晶沉淀剂 KN 和 SN 会提高混凝土试件和砂浆试件抗压强度，两种结晶沉淀剂渗入混凝土或砂浆孔隙、裂缝后，与水泥的水化产物氢氧化钙和孔溶液中的钙离子反应生成沉淀物质，如碳酸钙和硅酸钙，堵塞混凝土和砂浆中的孔隙和微裂纹，提高砂浆和混凝土试件的密实度，从而提高其强度和耐久性。

涂刷过 TA 涂料试件的抗渗压力超过了 GB 18445-2012《水泥基渗透结晶型防水材料》的要求，其抗渗性能非常优异；混凝土、砂浆试件 21d 第一次抗渗压力比分别为 400%和 500%，超过了规范要求的 250%。

Abstract: Cement based permeable crystallization type material is a kind of effective component by itself contains a penetration in concrete pores and micro cracks within the crystal and reaction of cement hydration products to form insoluble, block the pores and micro cracks, improve the strength and durability of concrete.

Mainly introduces the cement based capillary crystalline materials on the mechanism construction of both concrete strength and durability, factors affecting the durability of reinforced concrete structure and the strength of the current engineering and other frequently used concrete protective material. Describe the crystallization reaction and crystallization agent and calcium hydroxide in cement paste, precipitant coagulation effect of concrete and solution, metal ion complexing agent on calcium chelation coating and concrete and crystalline materials for cement based penetration retarding mechanism.

According to the chemical composition, pore structure, pore distribution and the products of cement hydration process, the active chemical compounds which can be used as cement-based permeable crystalline materials are analyzed. By doing a lot of experiments, an effective combination of active chemicals was selected. The basic

components of TA material are: Portland cement, refined quartz sand, first grade fly ash, KN, SN, SA, CN, GN and re-dispersible emulsion powder.

The test results show that the two kinds of precipitation agent KN and SN can improve the concrete and mortar compressive strength of two kinds of crystallization agent into concrete or mortar pores and fractures, and the calcium ion reaction of cement hydration products and pore solution of calcium hydroxide precipitate substance, such as calcium carbonate and calcium silicate jam, concrete and mortar in pores and micro cracks, improve the mortar and concrete specimens of compaction, so as to improve its strength and durability.

The concrete with TA material on it impermeability pressure is more than GB 18445-2012 "cement based capillary crystalline waterproof material" requirements, the permeability of excellent performance; concrete, mortar specimens 21d first impermeability pressure ratios were 400% and 500%, more than 250% of the standard requirements, the preparation of cement based visible permeable crystalline material is a kind of excellent waterproof material.

[36]李金星, 韩兵康. 中小学校舍抗震加固中风险控制的应用研究[D]. 同济大学, 2012.

摘要: 汶川地震给国家造成了巨大损失, 房屋震害严重, 特别是灾区中小学校舍建筑, 主要以砖混结构为主, 开间比较大, 横向刚度小, 尤其是单面走廊、双面开大窗、自然采光的纵横墙承重的单排楼, 在地震作用下, 大片墙体出现裂缝, 部分房屋已成为危房。为全面贯彻“预防为主”的抗震指导方针, 需对不满足国家有关抗震规定的大多数继续使用的房屋建筑进行抗震鉴定和对不满足抗震鉴定要求的进行抗震加固。

由于中小学抗震加固工程工期较紧, 在鉴定、设计和施工中存在着许多风险因素。本文通过工程实践总结在加固过程中各个阶段存在的问题, 进行风险识别和分析。为了不影响教学工作正常进行, 抗震加固施工一般在假期内进行, 所以施工工期较紧, 加上施工中结构安全性问题突出和施工现场制约较多, 风险较为集中, 所以本文对抗震加固施工阶段进行重点分析。根据现有试验资料, 本文初步探讨在抗震加固施工中的施工缺陷对加固效果的影响, 并利用风险分析方法初步建立针对抗震加固施工的风险评估系统, 对比各个加固构件的潜在风险损失, 然后采用灵敏度分析法比较加固中的施工工序对承载力的影响, 以便能够在进行施工质量控制时做到有的放矢。

Abstract: In the Wenchuan Earthquake, tremendous losses has been caused to China, and houses in the affected area are badly destroyed, especially the buildings of primary and middle school, majority of which is brick masonry structure. Because these buildings have the bigger standard width, smaller lateral rigidity, especially for the buildings with natural lighting, longitudinal and transverse main wall, corridor at one side, large windows on both surfaces. Under the action of earthquake, lots of cracks appeared in walls. According the guidelines of“focus on prevention”, the project of seismic appraisal and reinforcement must be done to the school buildings which don't qualify the standard of requirements.

Because the project time limit is pressed, lots of risk factors exist in the appraisal, design and construction. This paper summarizes the problems in the reinforcement project stages by project practice. Because the seismic reinforcement construction is carried out in the holiday to avoid affecting the teaching job, the time is limited. And considering there are many problems in the construction stage, so the paper pays more attention in the construction stage. According to the existing data, analysis of the influence of construction defect to the effect of reinforcement is put up. Using the risk analysis method, risk appraisal system of seismic reinforcement construction is set up. In the system,

the potential risk losses of different member are compared and the analysis of influence of different construction process to the structural capacity by sensitivity analysis method is carried out, which can be helpful to the quality control of seismic reinforcement construction.

[37]张璞.砌体房屋钢结构增层抗震分析及构造研究[D].同济大学,2012.

摘要：既有建筑钢结构增层是目前逐步被推广的一种房屋增层改造形式，它具有自重轻、抗震性能好和施工方便等优点；在技术、经济以及安全性等方面较混凝土结构具有明显的优点，在国内逐渐获得广泛的应用，但目前设计方法也不够完善，一般只对增层部分进行设计计算。而采用钢结构增层后，结构的整体质量、刚度、周期、阻尼比等都发生了变化，仅对增层部分结构进行计算分析是不安全的，应对整体结构进行计算分析。

本文在总结国内钢直接增层结构的形式、工程实例和研究现状的基础上，结合增层钢结构与既有砌体结构共同作用的特点，利用有限元软件 MIDAS/GEN 对上海地区三个实例工程分别增加一层钢结构所组成的结构体系进行了基于组阻尼比的抗震性能分析。对增层前、后结构的变形、位移等各项数据进行对比分析，分析结果表明：不同类型砌体结构对钢结构增层后整体结构自振周期及模态的变化有较大的影响；一般增层整体结构楼层剪力、位移比原结构楼层剪力增大，但部分砌体钢结构增层后自振周期大于反应谱曲线特征周期 T_g ，引起整体结构楼层剪力、位移变小；顶层突出屋面房间对增层后整体结构的抗震影响较大，且因位置及刚度大小不同而有较大的不确定性，增层设计前需对增层整体进行抗震分析；砌体层数对增层整体结构地震反应有一定的影响，但影响幅度较小。使用底部剪力法计算钢结构增层后砌体抗震能力是可行的。随着砌体层数的增加，底部剪力法计算结果顶层部位偏大，底层偏小。使用 PKPM 分析软件对增层后砌体结构进行抗震验算时，如果有突出屋面房间，应当把钢结构转换为荷载布置在屋面上，直接布置钢结构层会使突出屋面小房间地震力偏小。增层钢结构一定程度上削弱了顶层砌体的鞭梢效应，钢结构增层后顶层砌体地震作用放大系数可以考虑一定的折减。

Abstract: The technique of adding stories with light-weight steel structures is gradually promoted to be a new type of structural reinforcement for its advantages of light weight, good earthquake-resistant performance and easy construction. Also, it is superior to concrete structure in aspects on technology, economy and safety, therefore this technique is widely used in China. However, the design method is not mature yet, mostly, only the load bearing capacity of adding part is considered. But, significant differences of the whole mass, stiffness, period and damping occur when adding light-weight steel structure on the original building. Therefore, it is no longer suitable of just calculating the adding part, and the analysis of the entire structure ought to be carried out.

At the basic of the form of adding stories with light-weight steel structures, project examples and present research situation, combining the trait of the combined action of the light-weight steel structure and the masonry structure, seismic ability analysis of three projects with adding stories with light-weight steel structure in Shanghai area is carried out at the basic of group damping ratio by using finite element software MIDAS/GEN. Comparison of the deformation and displacement of the primary structure and reconstructed structure is done, which indicates, the natural period of vibration and modal of different type of masonry structure change a lot after reconstructed. The storey shear force increases, which needs seismic checking calculation. But the natural period of vibration of part of the mixed structure is greater than the eigenperiod, which leads to the decrease of the storey shear force. The top apartment of the structure

affects the seismic ability seriously, because the position and rigidity is different, which means seismic analysis of the structure need to be done before the design of the adding story.

[38]张啸辰.软土地基地铁盾构施工对多层混合结构完损性影响的研究[D].同济大学,2013.

摘要：城市地铁经常会从密集的居民建筑群下方通过。软土地区盾构施工几乎不可避免会引起上部房屋的变形损伤，整体性差、建造年代久远的多层混合结构房屋，对地铁盾构施工的影响尤为敏感。随着城市化进程加快，地下轨道交通越来越多投入规划与使用，使该问题逐渐受到科研工程领域及社会各界的关注。本文通过理论分析、数值模拟和实测对比，以房屋完损性为对象，研究了地铁盾构施工对上部混合结构房屋的影响机理、影响程度。主要工作内容和取得的成果如下：

本文首先在理论层面分析了盾构施工对土体扰动的机理以及盾构施工时土体同上部房屋共同作用的机理。由于房屋整体刚度远大于下方土体，当土层因盾构施工发生位移时，房屋与土体势必存在相互作用，对土体应力、位移状态都会产生影响。想要准确评定房屋在地铁施工影响下的完损性状况，需要考虑房屋土体相互作用，对盾构-土体-房屋进行整体的分析。

基于前人的工程实践和理论、数值分析成果，本文提出了基于 abaqus 有限元程序的数值模拟方法，系统研究盾构施工对上部不同类型混合结构房屋完损性评定的影响。模拟方法为对盾构、隧道、土层、上部房屋进行整体建模，考虑盾构施工动态过程，较精细的模拟盾构施工全过程中房屋各构件的受力、损伤情况。本文考虑房屋与盾构隧道的相对位置不同，盾构施工质量优劣，上部房屋层数不同，房屋是否有圈梁构造柱，房屋是否存在初始损伤等情况，研究了地铁盾构施工对多层混合结构房屋的影响，得到了多层混合结构完损性受盾构施工影响的较为通用的结论和规律。文章对比无房屋地层位移情况，得到了分析房屋受力损伤时上部房屋与土体的相互作用不能忽略的结论。

最后文章以上海市某地铁盾构施工影响某多层混合结构住宅的实际工程为例，用数值模拟的方法分析盾构施工对房屋完损性的影响，对比实测结果，论证了本文研究方法的合理性，并对今后相关工程的分析提供借鉴。

Abstract: City Metro will cross beneath concentrated residential buildings in many conditions. It's difficult to avoid these buildings especially masonry-concrete buildings with relatively long history damaging and deforming from shield tunnel construction in soft soil. With a growing number of city metros construction in China's accelerated urbanization, this problem is drawing more and more attention from society. In this paper, theoretical analysis, numerical simulation and engineer practice will be used to research the damaged property of masonry-concrete multistoried buildings during and after tunnel shield construction.

At the beging, this paper analysed the theoretical mechanism of soil disturbance of shield tunneling and building-soil interaction behaviour. As building rigidity is much bigger than soil rigidity, the building-soil interaction behaviour is quite obvious to influence soil stress and ground settlement while shield tunneling disturbing layer. In accurate assignment of building damaged property, it's necessary to take building rigidity and building-soil interaction into account.

This paper has presented a numerical simulation method based on ABAQUS finite element program to investigate how shield tunnel construction influence different buildings above tunnel. The numerical model contains tunnel, soil and

building structure,which could calculate the stress and strain of building structure with satisfactory accuracy,making it possible to assign building's damage property in the whole shield tunneling process. To investigate buileding damage property influnced by shield tunnel construction systematically,a number of factors were taken into account,such us different building location,quality of shield tunnel construction control,number of building storeys ,influence of perimeter beam and tie column,initial structural damage.Compareing with the ground settlement result where has nobuilding nearby,this paper presented a conclusion that building-soil interaction can't be ignored.

By using finite elemental method anlaysing an project case in Shanghai, numercial result and measured result was compared to be satisfactory accordance,and such numerical simulation method was proved to be resonable.

[39]朱晓栋.复杂环境下大型商建项目施工风险控制研究[D].同济大学,2013.

摘要：风险到处存在，风险无时不有。各行各业都有风险，建筑业也不例外。对于建筑工程项目而言，由于建筑层数多、体量大，设计形式具有多样性，且材料、设备、技术更新大，生产流动性强，加上受地理、地质、水文条件，甚至社会、经济、自然灾害等因素的影响，从而决定了建筑产品与其他产品相比具有更大的风险性。

风险管理不是被动消极的接受风险，而是要以积极的态度，去防止和控制风险。它对社会经济的整体发展是起着积极的促进作用。风险管理是研究风险发生规律和风险控制技术的一门新兴管理学科，各经济单位通过风险识别、风险估计、风险评价，并在此基础上优化组合各种风险管理技术，对风险实施有效的控制和妥善处理风险所致损失的后果，期望达到以最小的成本获得最大安全保障的目标。

由于淮海中路3号地块发展项目地处闹市中心的淮海中路，地块北侧为运营中的地铁1号线，尤其是地铁1号线轨行区离北侧基坑地墙外侧最近距离仅7.5米，地铁运营公司要求，我们施工对1号线隧道沉降控制在10mm以内；南侧为在建的地铁10号线，与我工地T2塔楼同时建设，立体交叉施工，安全风险大；东侧为在建的地铁12号线，与我工地T1塔楼同时建设，同样存在立体交叉施工，安全风险大的情况；工程一期T2塔楼与工程二期裙房商场竣工后，已先期开业，而T1塔楼尚未结构封顶，后续建设时，存在安全风险。

工程风险存在于工程建设的各个阶段，而施工风险可防、可控，存在于工程进度、方案、质量、安全、环境卫生等各个方面，是全过程全方位的管理。需要通过风险识别，风险评价，风险控制及应对，风险控制后评价等步骤对风险或危险源进行控制，避免让重大风险或危险源处于失控状态，而在过程中又未采取有效控制措施，造成重大隐患。

Abstract: Risk exists everywhere at any time. Risk lie in all kinds of works, include the construction industry. The construction products have multiple layers, large size, and various forms, meanwhile, they are influenced by coupled with the geographical, geological, hydrological conditions, and even the social, economic, natural disasters, so the construction products have greater risk than other products.

Risk management is not receiving risk, but preventing and controlling the risk with a positive attitude. It can promote the the social and economic development. Risk management is a new subject to study the law of risk occurrence and technology of risk control. Based on risk identification, risk estimation, and risk evaluation, the economic units optimize and combine various risk management techniques, and they can control risks effectively and handle the loss caused by risk properly. At end, they hope to obtain the maximum security goals with the minimum cost.

The Central Huaihai Road 3#project locates in the downtown area. North of the 3#project is Metro Line 1, the minimum distance is only 7.5 meters between Metro Line 1 and the 3#project. The MTR operator requires that the settlement of Metro Line 1 be controlled within 10mm during the construction of the 3#project. South of the 3#Project is Metro Line 10. Metro Line 10 will be constructed when Tower 2 of the 3#Project come into operation, which has interchange construction and security risks. East of the 3#Project is Metro line 12, which is constructed now during the construction of Tower 1. The shopping mall and Tower 2 have already been opened, while Tower 1 has not been completed yet, the security risks still exist.

Risk exists at each stage of the project. The construction risk is preventable and controllable, it exists in the whole progress of the project, which includes plan, quality, safety, environment health and so on. We need to take steps to control risk, and to avoid significant risk or hazard out of control through risk identification, risk assessment, risk control and risk evaluation.

[40]章文磊.钢混桁架整体提升施工综合控制研究[D].同济大学,2017.

摘要：目前，大跨度钢桁架施工广泛采用整体提升法工艺。在施工过程中，结构的各工况的受力与就位合拢后不同，结构单元也要历经刚体平动和变形。

本文以依托实例为背景，基于已有的国内大跨度钢桁架提升施工研究，分析关键工况结构施工阶段力学特性，通过 Midas/Gen 进行有限元模拟，分析施工过程的次结构内力及位移等特性。主要内容为：

简述大跨度桁架施工力学的基础理论，总结现有类似工程中相关的案例。

采取有限元分析，建立模型，进行数值计算，模拟并输出各控制工况下桁架的内力、位移情况，进行了分析。对某项目的钢混桁架整体提升施工完整流程中的关键技术点的控制成果进行总结。

最后，关于进一步工作的方向进行了简要的计划。

Abstract: At present, integral lifting-up method in the construction of large-span steel trusses is widely used. In the course of construction, the loads of structure are very different from the finished situation of installation. Moreover, structural elements have displacements of rigid body and deformation.

This paper is based on the existing case of engineering of and the domestic researches to analyze the mechanical properties during phases of construction through Midas/Gen as follows.

To describe the mechanics theory relate to steel truss construction and to summarize existing similar project-related cases.

To establish some calculated models of subject of study. Then to analyze the features of stress and displacement when the structures were enforced constant load or various load under different installation stages by using finite element software.

To summarize the key technologies about the integral lifting-up method relate to steel-concrete truss.

Lastly, there is a brief on further work plan.

[41]高瑾.受地铁运营影响周边受损房屋修复与加固技术的振动响应研究[D].同济大学,2015.

摘要：城市地铁的建设解决了长期困扰各地区居民的“出行难”问题，但也对周围环境带来了不利影响。地铁列车的振动会通过隧道及土体介质最终传递到周边的建筑物内，对室内人员的工作和生活的舒适性造成影响。特别是上海，地处软土地区，又受到线路规划和施工条件限制，部分区段地铁线路必将会从密集的居民建筑群下方直接穿过，而且地铁隧道埋深也相对较浅，由地铁运营所带来的环境振动与噪声问题比较普遍和严重，对于上部整体性差、建造年代久远的多层混合结构房屋，对地铁运营的振动响应尤为敏感，引起居民的强烈不满，影响了社会的安定团结，与和谐发展的主题不符。本文通过理论分析、数值模拟和实测对比，以房屋楼板竖向振动为对象，研究了地铁运营对上部混合结构房屋的振动影响机理及采用不同修复与加固技术后，在地铁运营激励下房屋的振动响应。主要工作及取得的成果如下：

本文首先系统归纳了国内外地铁环境振动研究概况以及振动分析的有关理论与分析方法，详细阐述了地铁运营对周边房屋产生振动响应的机理和地铁周边混合结构房屋的特点，全面总结了受损房屋能采用的修复与加固方法。

基于前人的工程实践和理论、数值分析成果，本文提出了基于 abaqus 有限元程序的数值模拟方法，系统研究地铁运营对上部混合结构房屋的振动响应。模拟方法为建立典型混合结构的三维有限元刚性地基模型，利用现场实测的地面振动加速度作为激励，根据既有房屋的实际情况，较精细的模拟分析地铁运营过程中房屋的振动响应。建立了 10 个有限元分析模型，计算分析了房屋局部受损墙体修复前后、房屋不同楼板形式、不同基础形式以及是否设置圈梁构造柱、是否采用钢筋网片加固墙体在地铁激励下的振动响应。分析发现由于刚度退化，受损房屋对竖向振级略有放大作用，但修复后房屋的最大竖向振级能恢复至初始状态；由于楼板形式直接决定楼板刚度，故对振动大小有直接联系；钢筋网水泥砂浆面层加固墙体能提高结构阻尼比，故对抑制振动有较大作用；新增圈梁构造柱能提高房屋整体性，但对振动的衰减在高楼层才能体现；基础形式的不同，对地铁激励下的房屋振动几乎没有影响。

最后文章以上海市某地铁运营引起的上部多层混合结构住宅振动的实际工程为例，用数值模拟的方法分析地铁运营对上部受损房屋修复与加固前的振动响应，对比实测结果，论证了本文研究方法的合理性，并对修复与加固后房屋的振动响应做出预测，为今后相关工程的分析提供借鉴。

Abstract: Construction of the city subway solves the long-standing residents of the region "travel difficult" problem, but also brings adverse impact on the surrounding environment. Vibration of metro trains through the tunnel and soil media finally passed to the buildings, and impact on the comfort of indoor workers work and live. Especially in Shanghai, located in the soft soil area, and is limited by line planning and construction conditions, some sections of subway lines will be directly across from beneath dense residential buildings, and also relatively shallow subway tunnel buried depth, vibration and noise to the environment by the subway operation is common and seriously, for the upper integrity is poor, the construction of a multi-layer hybrid structure of the ancient houses, the vibration response of subway operation is particularly sensitive, cause people's strong dissatisfaction,, affected the social stability and unity, not in conformity with the theme of harmonious development. In this paper, Through theoretical analysis, numerical simulation and measured contrast, to the house floor vertical vibration as the object, studies the impact of subway operation mechanism of the upper mixed structure building and after adopt different repair and reinforcement technology, under the subway operation excitation vibration response of the building. The main contents and results are as follows:

This paper summarizes the theory and systems analysis study about the subway environmental vibration at home and abroad, and in detail elaborated on the mechanism of the vibration response characteristics on the surrounding buildings under subway operation and the characteristics of mixed structure, comprehensive summary the repair and reinforcement methods of the damaged buildings.

Based on previous engineering practice and theory, numerical analysis results, this paper presents a numerical simulation method based on finite element program of abaqus, systematic study the vibration response of the upper mixing buildings which affected by subway. Simulation methods is to establish a three-dimensional finite element model of a rigid foundation for typical hybrid structure, using the field measurement of ground vibration acceleration as incentives, according to the actual situation of both buildings, the finer simulation of subway during vibration response of buildings. Established eight finite element analysis model, calculate the vibration response under the Subway excitation about different floor forms ,the different basis forms and is set ring beams and constructional columns, whether to adopt reinforcing steel mesh wall .Analysis found that because of the floor form directly determine the stiffness of the floor, it is directly linked to the size of the vibration; Steel mesh cement mortar layer could improve the structural damping ratio, it has a greater role to suppress the vibration; New ring beams and constructional columns can increase building integrity, but the attenuation of vibration in high floor reflected; The different basic forms, almost no effect on the building vibration Subway excitation.

Finally the article take a actual vibration engineering of a multilayer hybrid structure building caused by Shanghai subway for example, using numerical simulation method to analyze the vibration response of the damaged structure before repair and reinforcement due to subway , compared to measured results ,then demonstrated the method in this paper is rationality. And predict the vibration response of the structure after repair and reinforcement, to provide a reference for related projects in the future analysis.

[42]崔学忠.软土地基排桩围护下基坑顺逆作协同施工关键技术研究[D].同济大学,2013.

摘要：排桩围护下的顺逆作协同施工技术已在一定**范围内**应用于工程实践，并取得了良好的社会效益和经济效益。该技术在加快工程进度、推广绿色施工工艺、减小基坑和周边环境变形、解决场地狭小的问题上具有一定的技术优势，是一种安全环保的基坑工程施工新技术。

本论文以徐汇区 156 号地块项目（二期）基坑工程为工程背景，针对该工程的建筑结构形式、水文地质状况、工期紧张、周边环境复杂及场地狭小等难点，提出了一整套排桩围护下的基坑顺逆作协同的施工关键技术。基于前人的工程实践和理论、数值分析成果，利用 Midas/GTS 有限元程序的数值模拟方法，系统的对该基坑进行理论建模分析，结合顺逆作协同施工工况，就基坑对周边环境的影响得出分析结果。

其次，从施工技术研究的角度的角度，重点阐明顺逆作协同施工关键技术。包括：施工部署、施工流程、顺逆作协同施工工况、关键细节节点深化、井点降水及减压、土方开挖、支撑体系的施工技术、基坑换撑及顺逆作区间的换撑转换技术、顺作施工技术、逆作施工技术。

再次，在本工程实际监测结果的基础上，就环境和基坑本体主要变形指标的实测值和理论分析结果进行对比分析、得出结论并就二者间存在的一致性和差异性的原因进行分析。

结合以上内容对排桩围护下的基坑顺逆作协同施工关键技术的进行总结，并结合当前基坑工程发展前景和 BIM 技术的运用推广对该技术的进一步研究工作进行了展望。同时对同类工程进行方案性建议，提供可供借鉴的新思路。

Abstract: Collaborative construction technology of Bottom-Up method and Top-Down method in the row piles support foundation pit have been applied to engineering practice on a certain **range**, and have achieved good social and economic benefits. The technology to accelerate the progress of the project to promote green construction technology, reduce deformation of the surrounding environment and the pit itself, with certain technical advantages to solve problems on the small site, is a safe and environmentally friendly new technology of pit construction.

Firstly, this dissertation project, Xuhui District, Lot No. 156 (two) excavation engineering background for the project in the form of building structure, hydrogeological conditions, tight deadlines, complex surroundings and small venues and other difficulties, proposed a set of key technologies based on collaborative construction key technology of Bottom-Up method and Top-Down method in the row piles support foundation pit. Based on previous engineering practice and theory, numerical analysis results, I use numerical simulation Midas / GTS finite element program, the pit system theoretical modeling and analysis, combined with Bottom-Up and Top-Down working conditions for collaborative construction, the impact of the pit on the surrounding environment analysis results obtained.

Secondly, from the point of view of construction technology research, focusing on the clarification of collaborative construction key technologies of Bottom-Up method and Top-Down method. Include: construction deployment, construction process, collaborative construction conditions of Bottom-Up method and Top-Down method, the key detail node deepen, well point dewatering and decompression, excavations, construction technology of support systems, conversion of excavation support and the interval exchange of Bottom-Up method region and Top-Down method region for support technology, construction technology of Bottom-Up method and Top-Down method, etc.

Again, on the basis of this project on the actual monitoring results, the measured values and theoretical analysis values of environment and pit main body deformation indices were comparative analyzed, draw conclusions and reasons of consistency and differences exist between the two were analyzed.

Finally, on the basis of the combination of the above, collaborative construction key technologies of Bottom-Up method and Top-Down method in the row piles support foundation pit were summarized, combined with further study of the current use of the promotion of excavation and BIM technology development, the prospects of the technology work were discussed. While similar works program proposals, to provide new ideas for reference.

[43]张竹庭.大型地下车库抗浮设计及施工关键技术研究[D].同济大学,2011.

摘要：近年来，国民经济的发展及城市空间的需求促使了城市地下空间的大规模建设，作为地下车库、下沉式广场等功能的纯地下结构的开发和利用也越来越多，且这些纯地下车库有往“大面积、大深度”发展的趋势。然而，在工程实践中，由于设计及施工的问题，以及各种突发自然状况，此类地下建筑发生上浮并造成结构开裂破坏的事故屡屡发生。由此，对于大型地下车库抗浮设计及施工的关键技术进行研究，有重要的理论意义和实际应用价值。

本文在借鉴现有理论研究及工程经验的基础上，对大型地下车库的抗浮设计和施工关键技术进行了研究。主要包括：地下水对大型地下车库的作用分析及对比、大型地下车库抗浮设计关键参数取值的研究、抗浮设计方法

及抗浮施工技术探讨、大型地下车库上浮事故实例分析及处理。

如何准确得到水浮力对地下结构的作用是地下车库抗浮设计中的重中之重。本文在渗流理论及有限元理论的基础上，建立了不同地下水赋存状态及边界条件下地下车库的有限元模型，通过对渗流计算结果的分析，详细研究了地下水对地下建筑的作用及孔隙水压力对地下建筑的影响，对抗浮设计中的水浮力计算提出了建议。

在我国现行的规范中，对于如何进行抗浮验算并没有做出严格的规定，抗浮设计及施工的相关规范或标准也不齐全。本文对地下室抗浮设计的关键参数（包括抗浮设防水位、浮力折减系数、水浮力分项系数、抗浮稳定安全系数等）进行了探讨及分析，并提出相应建议。同时，探讨了设计中常用的地下建筑的抗浮方法的原理、特点和注意事项，以及抗浮施工的关键技术和注意事项。

此外，本文以某一设有抗浮桩的大型地下车库的上浮事故为案例，进行了结构有限元计算分析，了解了结构不均匀上浮时的变形、损坏状况，提供了处理措施及加固方案，并作出相关总结及建议，对类似工程参考有参考意义。

最后，对研究工作进行总结并展望了进一步的工作。

Abstract: In recent years, large-scale construction of underground spaces is prompted by the national economic development and the needs of urban space. More and more total embedded underground structure such as underground garages and descended squares are exploited, with the tendency of greater area and depth. However, floating accidents which cause structural cracking and damage of such underground structures occur frequently, because of design and construction problems and some unexpected nature condition. Thus, the importance of theoretical and practical value of research on key technique of anti-floating design and construction about large-scale underground garage emerges.

This paper concludes such parts as analysis and contrast of the roles on underground garage of groundwater, reasearch on key parameters of anti-floating design, discussion on anti-floating design method and construction technology, and, project analysis and treatment measures of a large-scale underground garage.

Finite element models of underground garages under different groundwater and boundary conditions are builden, based on the seepage theory and finite element theory. Through comparison on the results of seepage analysis, a detailed study of the role of groundwater and pore water pressure on the underground structure. And suggestions on calculation of water buoyancy in anti-floating design are raised as well.

Discussion and analysis are made and suggestions are given about the key parameters (including alternative of anti-floating fortification water line, buoyancy reduction factor, subentry factor of water buoyancy, Santi-floating stability factor, etc.). The anti-floating methods and key anti-floating construction technique are discussed, along with their principles, characteristics and matters and attentions.

The finit element of a large floating underground garage with uplift piles illuminates the deformation characteristics and damage status of uneven floating structure. By this, strengthening treatments could be more targeted.

Finally, summary of the research and prospects for further work are reaised.

[44]李明.大型复杂钢结构屋面防水设计与施工相关技术研究[D].同济大学,2016.

摘要：大型复杂钢结构形式多样，造型优美，广泛应用于体育场馆、文化中心、机场航站楼、车站和工业建筑，与人们的工作生活息息相关。然而屋面渗漏频发，渗漏率居高不下，严重影响了建筑的使用功能。为了提高大型复杂钢结构屋面防水的质量，解决屋面渗漏问题，本文从几个方面分别对大型复杂钢结构屋面防水设计与施工相关技术进行研究，并提出了相关建议。主要内容如下：

(1) 分别从大型钢结构的结构体系、屋面体系和屋面防水系统三个方面展开论述，并结合典型的大型钢结构体系和大型钢结构新型屋面防水系统，对大型钢结构屋面防水的相关理论进行了研究。

(2) 分别从材料、设计、施工和使用维护等方面对大型复杂钢结构屋面渗漏原因展开分析，并对屋面渗漏情况最为严重的节点部位单独进行了研究分析。此外，还对严重影响大型钢结构屋面防水性能的屋面风揭破坏、卷材起鼓开裂等问题进行了研究。

(3) 采用数值风洞方法对几类典型屋面的风压系数和屋面周边风场进行分析，根据分析结果分别提出不同类型屋面风荷载分区建议。借助有限元软件研究在风荷载、温度荷载作用下，不同檩距、屋面板厚度和下部结构体系对屋面防水系统的影响。根据分析结果，对大型钢结构屋面防水设计提出一些建议。

(4) 结合某大型复杂钢结构屋面防水实例，对屋面渗漏原因进行分析。采用数值风洞模拟，研究了原厂房屋面风压系数和屋面周边风场。建立屋面系统和下部结构整体有限元模型，研究了屋面风揭效应和温度效应对防水层的影响。

通过对大型钢结构屋面渗漏情况的研究发现，材料、设计、施工和使用维护是影响屋面防水性能的主要因素，出现渗漏的屋面都与这四个因素有关。通过对不同类型屋面的数值风洞模拟发现，屋面角部、边区均为高负压区。屋脊、檐沟、天窗边缘及角部等部位面积较小，设计人员不予重视，风荷载取值偏小，是导致屋面板局部松动，甚至大面积风揭破坏，屋面防水系统失效的重要原因。通过对不同檩距、板厚和下部结构体系的屋面防水系统的风揭效应和温度效应的研究发现，减小檩距、增大板厚和提高下部结构刚度均可以增加金属屋面板的抗风揭性能，且调整檩距比改变板厚的影响更加明显。增加檩距、加大板厚会使屋面板的温度效应更加明显，但调整下部结构却对屋面板的温度效应影响不大。

Abstract: The large and complex steel structures are important to people's work and life, which are widely used in sports stadiums, cultural centers, airport terminals, railway stations and industrial buildings because of various and beautiful forms. However, roof leakage often occurs, and leakage rate remains high, which is seriously affecting buildings' function. In order to improve large and complex steel structures' roof waterproofing, and solve the problem of roof leakage, this paper study the related technology of roof waterproofing design and construction from several aspects, respectively. The present paper's contributions are as follows:

(1) The study of this paper begins from three aspects, large steel structure system, roof system and roof waterproofing system, respectively. Then the related theories of roof waterproofing about large steel structures are studied combined with some typical large steel structures and new roofing systems.

(2) The reasons for roof leakage are studied from material, design, construction and maintenance and other aspects, respectively. The roof nodes, the worst parts of roof leakage, have been studied alone. What's more, the serious impact on roof waterproof of large steel structures, wind uplift pressures and waterproof membrane blistering, have been studied.

(3) Several typical kinds of roof pressure coefficient and roof surrounding wind field analysis have been studied by the numerical wind tunnel method. The suggestion about roof partition for different types of wind load has been recommended based on the result. The impact of different purlin spacing、plate thickness and substructure on roof waterproof under wind and temperature has been studied by means of the finite element method. Some suggestions for design of large steel roof waterproof have been made based on the analysis result.

(4) The reasons of roof leakage have been studied, combined with a large and complex steel structure roofing instance. The roof pressure coefficient and roof surrounding wind field analysis have been studied by the numerical wind tunnel method. The whole finite element model of roof system and substructure has been established, in order to analyze the effect of wind and temperature on roof waterproof.

Some results have been discovered, though the study of large and complex steel structure roof waterproof's leakage. Material、design、construction and maintenance are the main factors, resulting in roof leakage, which almost all leaking roofs have. The angle and boundary of roof is high negative pressure region under wind, which is discovered though the numerical wind tunnel simulation of different roofs. The wind load of roof ridge、gutter、skylight edge and roof angle are less than the actual requirement, due to designers' careless, because these regions are too small. The lap joint of roof boards is loosening even damage owing to the insufficient design wind load value, which is one of the most important reasons for the roof leakage. Though the study of impact of different purlin spacing、plate thickness and substructure on roof waterproof under wind and temperature, the wind load resistance of the metal roof waterproof can be improve by reducing purlin spacing, increasing roof plate thickness and the stiffness of substructure. The effect by reducing the purlin spacing is more obvious than increasing the plate thickness. The temperature of metal roof waterproof is more obvious by reducing purlin distance and increasing plate thickness, but adjusting the stiffness of substructure is of small effect on it.

[45]成源.地下建筑物截水止渗抗浮技术研究[D].同济大学,2015.

摘要：同样的地下水位情况下，单一的砂土环境，地下某一深度的水头压力（或孔隙水压力）就类似于静水压力，随深度线性增加；同样条件的单一黏性土（隔水层或弱透水层）环境，同样深度情况下，水头压力即孔隙水压力却小于静水压力，和静水压力的线性关系不同，这种现象就是黏性土对地下水头的折减。截水止渗抗浮技术的核心是利用了这种隔水层或弱透水层对于地下水水头（或孔隙水压力）的折减，即黏土（隔水层或弱透水层）对地下水渗流的的止渗作用。这种折减作用利用得好，就可以带来地下建筑物抗浮设计的节约。

截水止渗抗浮系统构成有四部分，截水帷幕、隔水层地基、密实且低渗透的回填土和监测系统。如果拟建地下建筑物下卧层存在一个连续、有一定深度且均匀的黏性的隔水层或弱透水层，就可以应用截水止渗抗浮技术。这种抗浮设计，第一通过水泥搅拌桩形成的筒状截水帷幕实现了水平向渗透水的隔断，第二通过地基下卧层黏性土对下部水的止渗作用，使得建筑物底部所受的水头压力（孔隙水压力）小于静水压力水头，甚至是没有。

截水止渗抗浮技术不仅有其局限性，而且也有一定风险性，这反映了事物的两面性。为了控制风险，有必要建立全寿命期的监测系统。

最后将这次案例的工程施工技术做一个简单总结，以备相似工程参考之用。

Abstract: Underground water levels in the same case, single sand environment, at a depth of underground pressure head (or pore water pressure) is similar to hydrostatic pressure, increases linearly with depth; also conditions of single cohesive soil (separated aquifer or aquitard) environment, the same depth, pressure head of pore water pressure is less than the hydrostatic pressure, and hydrostatic pressure of the linear relationship between different, this phenomenon is cohesive soil to groundwater head fold. Core of section water stop osmosis and anti floating technology is using the aquitard or weak aquifers for groundwater head (or pore water pressure) fold reduction, namely clay (separated aquifer or aquitard) of groundwater seepage of infiltration. This kind of discount can be used well, it can bring about the saving of anti - floating design of underground buildings.

There are four parts in the anti - floating system of intercepting water - stop - resisting system, the water - cut curtain, the foundation, the dense and low - permeable backfill and the monitoring system. If there is a continuous, certain depth, and even a weak permeable layer in the underground building, it can be applied to the anti - floating technology of the water cut and thrust. Through the cement mixing pile formed by vertical sectional water curtain to achieve a level to the osmotic water partition, through the construction of foundation under horizontal layer of clay on the lower part of the water infiltration and the building anti floating design.

The anti - floating technology of water cut is not only limited, but also has certain risk, which reflects the two sides of things. In order to control the risk, it is necessary to establish the whole life cycle of the monitoring system.

In the end, the engineering construction technology of this case is a simple summary, which can be used for reference of similar projects.

[46]徐赞云.多层房屋改造锚杆静压方桩地基加固设计理论及施工工艺研究[D].同济大学,2009

摘要：多层建筑地基处理方案优选与设计优化是一项涉及面广、综合性强的工作。需要多方面的知识和设计经验。本文以系统工程、知识工程、综合评价、模糊数学、决策分析、计算机技术等为理论基础，结合岩土工程、土质学和土力学等学科知识，初步研究了这一问题。建立了多层建筑地基处理方案优选与设计优化的基本框架，给出了具有一定普遍意义的分析方法。

仿照人工决策的过程，地基处理设计首先要考虑的是是否处理、浅层处理还是深层处理的问题，本文在对多层建筑软基处理决策问题进行系统分析的基础上，在众多因素中找出关键因素，构造已选因素的隶属函数，建立基于 MATLAB-FIS Toolbox 的多层建筑软基处理模糊决策系统模型结构，将地基处理决策由主观性转化为数学形式，使决策更具科学性、高效性。

在此基础上讨论了深层处理方案优选问题，本问题的影响因素有些可以定量分析，有些具有模糊性质，只能定性分析。这些因素之间相互关联，相互制约，构成了复杂系统。模糊矩阵理论和层次分析法是系统工程理论中对非定量问题分析的有效决策方法，本研究将二者相结合构造了多层次模糊决策模型。利用此模型分析了上海崇明某多层建筑软基处理工程，得到了较满意的结果。

对优选方案进行优化设计是地基处理设计较重要的一个环节，优化的目的是使优选的方案在满足规范要求的前提下造价最小。本文以水泥搅拌桩复合地基为例，采用复形调优法，按沉降控制设计原则，讨论水泥土搅拌桩复合地基优化设计问题。并用 MATLAB 语言，编写了优化程序，对两个多层建筑软基处理工程进行优化，得到了

较理想的分析结果。

Abstract: How to choose the schemes and optimize the design of multi-story building soft ground treatment is a complex work. It needs various kinds of knowledge and professional experience. Based on some theories such as system engineering, knowledge engineering, comprehensive evaluation, fuzzy mathematics, decision analysis and computer technology and combined with the knowledge of geo-technique and soil mechanics, this thesis studies preliminary this problem. Establishing the basic framework for the schemes of choosing and optimizing the design of multi-story building soft ground treatment, and provide some analyzable methods of general significance.

Referring to the process of the policies made by man, the first problem that we considered is whether the ground should be handled or not, or shallow treatments, or deep treatments. This thesis gives a systematic analysis on the problem of the soft ground treatment in multi-story building, tries to find out the key factors and their membership functions are formed, and finally established the model structure of the multi-story building soft ground treatment decision based on a MATLAB-FIS toolbox. Changing the decision for the soft ground treatment from subjectivity to mathematical makes the decision more scientific and effective.

The problem of choosing scheme about deep treatment is further discussed. Some of its influential factors can be quantitatively analyzed, however, some have fuzzy characteristic and have to be done by qualitative analysis. These factors are related to mutually, restrain mutually and constitute a complicated system. Fuzzy matrix theory and analytic hierarchy process are effective decision methods to non-quantitative analysis in system theory. This research integrates those two and sets up a multi-layer fuzzy decision model. By using this model, the study of multi-story

building soft ground treatment project of Congming (a city in Shanghai) is done and the analytic result is satisfying.

Optimizing the design of the optimized schemes is a very important process in the design of soft ground treatment. The aim of optimization is to make the design project not only meet with the need of design codes, but also has the lowest cost. This thesis will take the cement deep mixing composite ground as example, use the method of optimizing by plural modality, discuss the problem of optimizing design of cement deep mixing composite ground according to the design rules for settlement control method. Optimized programs are compiled by MATLAB language and two multi-story building soft ground treatment projects are optimized by this program. The result is satisfying.

[47]叶青荣.风险控制华夏东站深基坑施工中的应用[D].同济大学,2010.

摘要：地下工程建设是高风险的行业，无论国内还是国外，每年都会发生一些重大工程事故，对工程建设和社会生活产生严重影响。随着轨道交通建设的进一步发展，各类基坑朝着“深、宽、大”演变，风险控制要求越来越详细，难度大为增加。深基坑工程施工阶段是工程风险管理过程的核心，也是工程风险能否得到有效控制的关键。

本文的研究与在建的地铁华夏东站深基坑施工建设同步进行，详细剖析地铁华夏东站深基坑的现场工况，运用风险控制理论，识别出其中所存在的风险因素，估计这些风险因素发生的可能性和一旦发生会造成的损失大小，采取确实有效的措施防范和规避施工过程中各类风险事件的发生，保障工程建设的安全、质量与进度，达到以较低成本获得最大安全的目标。

通过本文的研究可知：应用风险管理理论，系统化建立深基坑施工过程中的风险控制、风险应对等相关环节，优化深基坑施工工艺、加强风险监测，能有效控制地下工程建设风险、减少各类风险事故的发生，降低工程经济损失、人员伤亡和社会、环境影响。

本课题研究成果可作为建筑施工总承包企业在轨道交通建设深基坑工程施工风险控制中的参考，引导各项目管理部将风险管理作为整个项目管理的重要组成部分。

Abstract: The engineering constructions underground are high-risk. No matter at home or abroad, some heavy engineering accidents always happen every year, which have strong impact on engineering construction and social life. With the great development of the track traffic projects, various foundation pits are evolving to be deeper, wider and bigger, so the requirements on risk control become more and more specific and difficult. The construction phase of deep foundation pit project is not only the core of risk management, but also the key to effective control.

This thesis researched into the deep foundation pit project of East Huaxia Road which is under construction. It analyzed constructing conditions in details, applied risk control theory, identified the existent risk elements, and estimated the possibilities of risk elements and the possible losses if some accidents happened. In addition, this thesis provided effective measures to prevent and avoid all kinds of risks in the process of construction, which can ensure the engineering construction of safety, quality and progress, so that we can obtain the maximized safety at a lower cost.

According to the research of this thesis, we can know: apply the risk management theory to systemize the risk control, risk response and the related links in the process of deep foundation pit construction, to optimize the construction technology of deep foundation pit, to strengthen the risk monitoring, which can control the risks of subsurface project effectively, reduce various accidents and the casualties, lower the losses of project, and lessen the social and the environmental influence.

The general contractors of construction enterprises, they can regard the research findings of my thesis as a reference to risk control of deep foundation pit construction. They can guide the project managers and let them value the risk management in the process of whole project management.

[48]刘新.建筑工程安全效益分析[D].同济大学,2013.

摘要：本论文采用安全经济学基本原理，具体研究了建筑工程施工安全的投入、产出和效益。具体研究工作包括以下内容：

在建筑工程安全投资研究部分，论文分别定义了建筑工程安全投资与安全成本的概念，分别研究了建筑安全投资与建筑安全成本的分类组成，比较了建筑工程安全投资与安全成本的区别与联系。然后，论文分析了建筑工程安全投资的来源。在对长春市部分建设项目的安全投资状况进行问卷调查后，进行了定量分析，得出建筑工程安全投资大都不足的结论；就安全投资不足的情况，论文运用博弈论方法，对建筑工程安全投资决策进行了博弈分析，得出了施工企业在市场竞争条件下，如果没有安全效益的意识，是不会主动增加安全投入的结论。

在建筑工程安全投资的产出分析部分，论文研究了各类安全投资所能产生的效益，并提出采用有无对比的原则，将很难直接计算的“本质增益”内化到施工企业的日常管理中，只将安全产出的“减损效益”即事故损失的减少作为建筑工程安全投资的产出。并通过研究国外事故费用及经济损失的计算方法，提出将机会损失、项目周

边建筑物的损失列入事故损失中，完善了基于企业相关利益损失与事故损失交叉关系的二维建筑工程事故损失分类体系，这样就使建筑工程事故损失分类更加全面明晰。在此分类基础上，本论文设计了新的建筑工程事故损失统计方法，按统计方法给出了建筑工程事故损失的计算方法，解决了以前计算方法中的重复计算和漏算问题，为建筑施工企业准确、全面、便捷的计算事故经济损失提供了指导。

论文还研究了建筑工程施工安全效益的计算方法，运用投入产出分析方法对建筑工程安全生产的投入产出进行了分析，并举例计算加以说明。论文中设计了建筑施工企业安全效益计算表并进行了实例计算，为建筑工程施工企业计算安全效益提供了方法，最后论述了提高安全效益的基本途径和领域。

Abstract: Based on the theory of safety economics, this paper studies on safety inputs, safety outputs and safety benefits in construction projects. The detailed work is as follows.

In the part of safety investment in construction projects, both of the definitions of safety investment and safety cost are defined, and all kinds of composing parts in construction projects of them are given. Then the differences and relations of them are compared. In addition, the sources of safety investments in construction projects are analyzed. According to the results of the questionnaire about the safety investment in construction projects in Habrin, the paper makes a quantitative analysis. About the situation of inadequate safety investment, this paper plays chess to analyze the safety investment decision-making of the construction projects using game theory method. The conclusion is obtained that under the market competition if there is no restriction of legal documents, the construction enterprises wouldn't increase the amount of safety inputs voluntarily for keeping the competition advantages.

In the part of outputs of safety investment in construction projects, the paper has studied the benefit which each kind of safety investment could produce, and proposes to use the principle of comparing between having the safety investment and not. For doing so, the paper makes "the essence to increase" which is difficult to calculate directly internalize into enterprises' daily management and makes "decrease the benefit" which means the reduction of accident loss of safety outputs as the construction projects' outputs of safety investment. Through the research of computational methods in accident cost and the economic loss overseas, the paper proposes to put the opportunity loss into accident loss. And the paper also establishes the two-dimensional classified system of accident loss in construction projects which is based on the intersectional relationship of correlative benefit loss and accident loss of the enterprises. This makes the classification of construction projects' accident loss more comprehensive and clearer. In this classification foundation, the paper designs the new statistical system of accident loss of construction projects. According to the calculation method of construction projects' accident loss given by the system, the problem of repeated computation and the miss is solved and provides the instruction for construction enterprises in computing the economic loss of accidents accurately, comprehensively and conveniently.

In the part of safety benefits in construction projects, the paper has studied the computational method of safety benefit of construction projects. The analysis of input-output of the construction projects' safety in production has been carried on. And the computational example is given to explain. In the paper, the computation chart of safety benefit of construction enterprises is designed. This provides the method of computing safety benefits for construction enterprises.

[49]杨俊.基于历史建筑鄂达克别墅的保护性修复工艺研究[D].同济大学,2013.

[50]姜巍.公租房项目装配式住宅关键技术研究[D].同济大学,2017.

摘要：随着中国城镇化进程的不断加速，人们对住宅的数量及房屋的质量需求近年逐步攀升，同时工地用工成本也与日俱增，而且传统的住宅建设方式已存在诸多的弊病，传统建筑施工带来对周边道路、建筑噪声、扬尘、废水严重影响周边环境，这些问题都严重滞后于百姓对住宅的需要。政府为了有效应对目前的状况，大力推动装配式住宅的建设，住宅的工业化革命正在悄然发生。本文通过对预制装配式混凝土住宅建筑设计以及施工组织及成本造价中的问题进行分析，给出对住宅工业化发展的几点建议，希望给相关的住宅建设同仁有所启示。

建筑与结构设计、构件生产、施工是房屋建设的重要环节。与传统住宅设计不同，装配式住宅的最大特点是设计标准化、生产工业化、施工机械化，当前装配式建筑已进入快车道，在新形势下，如何促进住宅产业现代化的发展，确保装配整体式住宅施工安全，提高工业化住宅性能，提升装配整体式住宅建设水平和工程质量，已成为新的课题。目前虽然在设计、构件生产、施工已形成了成套的相关技术，但是整体水平还不高：设计单位仍然在按现浇混凝土结构的设计方法进行进行装配式住宅设计，容易造成设计质量问题并增加施工难度；而施工阶段由现浇到装配式的转化，施工单位在技术、人才储备以及设备、机具配制、施工经验等方面均存在较大差距；监理单位和建设单位在施工质量验收等方面经验不足，由此给装配式住宅工程质量和安全带来一定的隐患。本文主要针对装配整体式混凝土住宅的特点，以临港奉贤公共租赁住房为例，对装配式混凝土住宅的建筑设计、构件生产、施工技术组织、质量控制进行研究，提高装配式住宅设计和施工质量，控制建设成本，从而达到低碳环保、节约资源的目的。本文研究的主要内容如下：1.通过作者对临港奉贤公租房项目装配式住宅设计的管理，对装配式住宅技术体系选择及设计要点进行分析和总结，为其他混凝土预制装配式住宅设计提供借鉴。2.以临港奉贤公租房的装配式住宅施工技术为例，对预制构件的生产过程、成品保护、运输方式、堆放场地、吊装连接、等施工关键技术进行分析和总结，为其他混凝土预制装配式住宅施工提供参考。3.以临港奉贤公租房装配式住宅预制构件验收及施工安装过程为基础，作者在施工过程中采取高效施工质量控制措施、符合相应的国家混凝土施工质量验收规范，为其他预制装配式混凝土住宅施工质量的控制提供依据。

Abstract: With the accelerating process of urbanization in China, the demand for house quantity and quality of people has been rising gradually in recent years. At the same time, with labor costs on construction site growing with each passing day, and the existence of many problems in the traditional housing construction mode, such as construction noise, dust, waste water seriously affect the surrounding environment, combined with the traditional construction, these problems are seriously lagging behind the demand for house of people. In order to deal with the current situation effectively, the government is promoting the construction of pre-cast concrete housing structure vigorously, accompanied by the quietly happening of residential industrialization revolution. In order to give some enlightenments to related residential construction colleagues, the article analyzes the problem of prefabricated housing architectural design and construction organization and the cost of the cost and gives some suggestions for the development of housing industrialization.

The architectural and structural design, component production and construction is an important part of housing construction. The biggest characteristic of the assembly house is the design standardization, the industrialization and the

construction mechanization. The prefabricated construction has entered the fast lane, under the new situation, how to promote the development of housing industry modernization, to ensure that the assembly overall residential construction safety and improve the performance of the residential industrialization, to enhance the quality of the assembled integral type residential construction level and engineering has become a new topic. At present, although the design, component production, construction has formed a complete set of related technologies, but the overall level is not high. Design units are still in the design of the cast in place concrete structure design method in the assembly of residential design, easy to cause design quality problems and increase the difficulty of construction. The construction stage from the cast to the assembly of the transformation, construction units in the technology, talent pool and equipment, equipment preparation, construction experience, there is a big gap. Supervision units and construction units in the construction quality acceptance and other aspects of lack of experience, thus to the assembly of residential construction quality and safety of a certain risk. This article mainly in view of the assembled monolithic concrete residential characteristics, Lingang Fengxian public rental housing, for example, the prefabricated concrete residential building design, component production, construction technology, quality control study, improve the assembly residential design and construction quality, construction cost control, so as to achieve the low carbon environmental protection, conservation of resources. In this paper, the main contents are as follows: 1. The assembly residential design of Lingang Fengxian public housing project management, of assembly type residential building system selection and design elements for analysis and summary, provide a reference for the design of other concrete prefabricated housing. 2. Taking the construction technology of the pre-cast concrete housing structure in Lingang Fengxian public rental housing project, this paper analyzes and summarizes the construction key technology of prefabricated members including the production process, the mode of transport, stacking area, hoisting connection and finished products protection to provide a reference for other pre-cast concrete housing structure construction method. 3. Basing on prefabricated members approval and construction and installation process of Lingang Fengxian public rental housing project, author adopts high efficient construction quality control measures in line with the corresponding country code for quality acceptance standard of concrete in the construction process to provide a reference for construction quality control of other pre-cast concrete housing structure.

[51]金俊杰.混凝土结构烂尾楼修复技术研究[D].同济大学,2014.

摘要：混凝土结构烂尾楼是经济危机的产物，随着世界经济的发展，经济危机出现的频率变得越来越高，每一次经济动荡都会给建筑产业带来巨大影响，形成一批烂尾楼建筑。目前对烂尾楼的修复加固技术不够完善，一般仅参照现行混凝土结构设计规范中的指标、构造要求进行比对，在 PKPM 中作为新建建筑进行建模分析，未考虑烂尾楼空置多年产生的一系列耐久性问题，此种分析对结构是不安全的，应对整体结构进行综合考虑耐久性的承载力验算。

本文在总结国内混凝土碳化和钢筋锈蚀耐久性研究的结论、工程实例和研究现状的基础上，结合混凝土结构烂尾楼的特点，利用 PKPM/SATWE 和 ABAQUS/CAE 对苏州地区一工程实例进行整体分析和单独构件分析。对不同锈蚀程度的构件进行有限元建模分析，对比其支座下部受压区、支座上部受拉区、跨中下部受拉区混凝土、钢筋

的应变、MISES 应力和主应力；对比 SATWE 和 ABAQUS 整体建模分析的各层位移等。根据计算结果，对 40 年后混凝土碳化及钢筋锈蚀率进行预测，采用增大截面法及外粘型钢加固法对构件进行加固，分析其混凝土、钢筋的应变、MISES 应力和主应力变化。最后根据工程实例的特点，提出了相应的耐久性修复及承载力加固方法，为今后类似混凝土结构烂尾楼修复提供了技术依据和参考。

Abstract: Unfinished concrete structure building is a product of the economic crisis. With the development of world economy, the frequency of the economic crisis is becoming higher, every economic turmoil enormous implications to the construction industry, forming a batch of unfinished buildings. At present for the imperfection of the repair and reinforcement technology, only in reference to the design code of concrete structure, it is analysed in PKPM as new buildings, which create many problems, not considering the durability for many years. This kind of analysis to the structure is unsafe. The load-bearing capacity considering durability must be checked.

Based on the summary of the domestic steel bar corrosion and durability of concrete carbonation conclusion, engineering examples and the research status, combined with the characteristics of the concrete structure buildings, analysis of overall performance of individual components of a engineering example of Suzhou area is made by using PKPM/SATWE and ABAQUS/CAE. Finite element modeling analysis is carried out on the corrosion degree of different components, compared to the concrete and steel bar's strain, MISES stress and principal stress in compressive area of support, the tensile area of support and the tensile area of midspan; Comparison of the floor displacements in SATWE and ABAQUS is also carried out. According to the forecast of concrete carbonation and steel corrosion rate in forty years, the components are reinforced by section enlargement and bonding steel plates externally, then analyze the changing of concrete and steel bar's concrete and steel bar's strain, MISES stress and principal stress. Finally according to the characteristics of the engineering example, this paper puts forward the corresponding repair of durability and strengthening methods to bearing capacity, which provides repair technical basis and reference for similar concrete structure buildings in future.

[52] 朱臻阶. 近代文物保护建筑圣三一教堂保护与修缮施工关键技术研究[D].同济大学,2014

摘要：历史文物建筑的保护日益得到广大社会的认同。如何切实保护好这些历史建筑，使其宝贵的历史文化资源得以延续和流传，是一个值得长期研究的课题。

上海在中国近代史上具有特殊的地位，上海的近代建筑也具有十分独特的一面，近代建筑作为历史文化名城的一个重要组成部分，上海划定了以优秀近代建筑保护为主的 11 处历史风貌保护区，在这些风貌保护区中选择几个具有代表性的保护修缮案例：圣三一教堂保护性拆除与修缮工程作为工程案例背景，对历时保护建筑的后加建保护性拆除，复原历时保护建筑的原结构体系所采用的各类修缮加固施工工艺进行研究探讨。

本课题将通过对圣三一教堂保护修缮案例所采用的保护性加固、保护性拆除、综合修缮等的施工工艺进行比较研究，探讨历史保护建筑加固修缮的难点特点及其相应对策。探讨加固修缮施工工艺的选择和实际效果，总结一些历史保护建筑加固修缮的经验和成果，从而为今后的历史保护建筑修缮研究提供一个基础。

Abstract: The protection of historical and cultural relic buildings has been social identity increasingly broad. How to protect the historic buildings, the valuable historical and cultural resources to continue and spread, it is a long-term

research topic

Shanghai has a special status in the modern history of Chinese. Modern architecture in Shanghai also has a very unique. Modern architecture is an important part of the historical and cultural city. Shanghai designated to protect outstanding modern buildings of the 11 historiclandscape conservation area. Choose a few protection repair case representative in the conservation area.

The protection of cultural relics such as Jiangwan stadium renovation project, the Bund No. six renovation project, Holy Trinity Cathedral (Shanghai) renovation project, Union Church renovation project, Waitan yuan 174 Kaifong,comprehensive restoration project as theproject background, As the engineering background of case,research on construction technology of building by various types,different ages, using various repair metods.

Comparative study on the construction technology of this topic will be protected by the above cases of reinforcement, transformation of the expansion, the comprehensive repair, to investigate the protection of historical buildings repair reinforcement difficulties and corresponding countermeasures. Discussion on the reinforcement of repair the choice of construction technology and the actual effect, summarizes some historical building protection reinforcement repair experience and results, which provides a basis for the protection of historical buildings repair research.

[53]李宏程.基于 BIM 技术的公益类房屋运维系统研究[D].同济大学,2015.

摘要：在建设项目的后时代，公益类房屋涉及大量房屋修缮、设备运维和安全管理，传统方式是由各参与方分别记录相关信息，管理者需要分别查询各方信息、二维图纸、文件等大堆资料，耗费大量时间且难以有效管理。本文以BIM（Building Information Modeling,建筑信息模型）技术和SQL数据库为基础，研究基于BIM的公益类房屋运维系统，构建新型运维系统解决传统运维系统存在的问题。利用BIM技术（运用Autodesk Revit和Autodesk Navisworks软件实现）可以对相关信息进行快速查询与统计，对运维状态、合同状态、成本超支状态、消防疏散等信息进行可视化表达，实现BIM的信息共享及操作平台。研究SQL数据库技术，从BIM导出房屋信息，加入到房屋运维数据库中，实现对房屋基本信息、设备运维、合同、成本、供应商、部门、员工等信息的综合管理。基于BIM技术与SQL数据库的运维系统，BIM与SQL数据库之间信息交互和持续更新，有利于管理者对房屋形态、设备空间位置等理解，提高管理效率,使房屋和设备信息更加丰富，实现对房屋运维信息完整储存和综合管理。通过儿童福利院的房屋运维案例，研究BIM技术在专家决策、房屋修缮和安全疏散中应用。

运用Autodesk Revit软件,通过不同颜色、图案等方式进行设备状态表达,实现各信息分类统计;使用SQL Server软件建立运维数据库,实现与BIM信息的集成过程。以儿童福利院更新维修策略、专家决策系统、卫生间和屋顶修漏、空调设备管理等为例,研究BIM技术在修缮系统和资产系统中运维应用。以消防疏散系统结构和人员安全疏散判定理论为基础,研究BIM技术(运用Autodesk Revit和Autodesk Navisworks软件实现)在建筑消防疏散中应用。以上海市儿童福利院消防疏散演练为例,运用Autodesk Navisworks软件漫游功能,模拟疏散所需时间与实际演练时间比较,重点分析人员特性和建筑结构子系统对消防疏散的影响,得出消防疏散模拟时应考虑通道宽度和人员拥挤的影响、当移动救援设备成为次生障碍物对疏散影响。

BIM技术在房屋运维系统还处于摸索阶段,随着云技术、物联网等信息技术发展,一个真正意义上基于BIM的

房屋运维系统必将给未来公益类房屋带来翻天覆地变化，更能将人文关怀和安全运维发挥极致，将智能房屋提升到智慧房屋新高度，开创智慧房屋新时代。

Abstract: In the construction phase of the project operation, involving a large number of housing repairs and equipment operation and maintenance management, the traditional management way is by the parties involved in recording related information , managers need to query information of all parties, 2D drawings, documents, etc. lots of material, consuming a lot of time and difficult to effective management.

In this paper, the application of BIM (building information modeling, building information model) technology and SQL database, Basing on BIM housing maintenance visualization management ,has solved many problems of traditional operation and maintenance management . Using BIM Technology (using Autodesk Revit and NavisWorks software implementation) fast query and statistics of relevant information and Research on operation and maintenance of the state, contract, cost overruns status information visualization, realize information sharing of BIM and visual operation platform. At the same time, the application of SQL database technology, from BIM export Housing information, adding to the housing

maintenance database , to achieve integrated management of housing basic information , equipment operation and maintenance information , contract , cost, suppliers, department information, employee information, such as function. From the point of view of operations management is proposed based on BIM building visualization management . Finally, through the operation and maintenance case of Shanghai children's welfare and implementation process , clear in each party's responsibilities and manag home, the BIM technology is demonstrated in the application of expert decision-making, building repair and safe evacuation.

Using Revit Autodesk software, through different colors, patterns and other ways to carry out the status of the device, to achieve the information classification statistics; using Server SQL software to establish operation and maintenance database, and BIM information integration process. Taking Shanghai children's Welfare Institute to update the maintenance strategy, the expert decision-making system, the toilet and roof repair leakage, the air conditioning equipment management and so on as an example, demonstrated the BIM technology in the operation and maintenance system in the asset management and the maintenance management application.

Based on the theory of fire evacuation system structure and personnel safety evacuation, the application of BIM Technology (Revit Autodesk and Navisworks Autodesk) in building fire evacuation is introduced in this paper. Taking Shanghai children's welfare home fire evacuation drill as an example, the use of Navisworks Autodesk software roaming function, simulation of evacuation time and the actual exercise time comparison, focusing on the analysis of personnel characteristics and the impact of building structure subsystem on fire evacuation simulation should take into account the impact of channel width and personnel congestion, when mobile rescue equipment to be secondary barriers to the evacuation. BIM technology in building operation and maintenance management is still in the exploratory stage, with the development of “cloud ” technology, networking and other information technology, A real sense of the housing and maintenance system based on BIM will bring great changes to the future work, the smart home will be upgraded to a new height of wisdom, open new era of innovative wisdom.

[54]林慧.基于构件损伤的砌体结构完损性综合评价方法研究[D].同济大学,2013.

摘要:房屋完损等级的评定是确定修缮项目、编制修缮计划、安排修缮资金的依据。建设部 1984 年颁布了《房屋完损等级评定标准》[试行],然而该标准对房屋完损评判标准的界定十分模糊,仅给出了定性评判的标准。本文通过调查分析、数值模拟等方法,结合现有的房屋结构评价标准,研究了砌体结构构件及结构整体完损性评价方法。主要工作内容在结构构件和结构整体两个层面展开,取得的成果如下:

考虑到裂缝是砌体结构构件主要的损伤形态,本文通过对实际工程项目的调查、分析、总结,阐述了裂缝产生的原因及不同原因导致的裂缝在结构中出现的位置及形态等特征,结合工程经验及现有的针对裂缝评级的规范标准,给出基于裂缝原因分析的带裂缝砌体结构构件完损性评价指标,并将之用于工程实际。

考虑到既有结构构件发生损伤时,往往不再满足设计时的计算假定,本文提出了将数值模拟及可靠度指标引入结构完损性评价的思想。首先将既有构件的可靠度指标与其完损程度建立联系,在研究了既有建筑荷载、抗力的特点的基础上,利用 ANSYS 数值模拟的结果,采用极限状态曲面上的样本点,通过 MATLAB 数值拟合获得既有结构的功能函数,进而求得既有砌体墙构件在不同目标使用期下的可靠度指标。本文利用上述方法获得了不同倾斜率受压砌体墙在不同目标使用期下的可靠度指标,并根据对这一系列的可靠度指标的分析获得倾斜砌体墙的可靠度评级,进而得到了倾斜砌体墙的完损性评级指标,并将该通过数值分析及可靠度指标计算得到的倾斜评级指标运用于砌体结构的砌体墙构件完损等级评定的工程实例。

在结构整体层面,本文针对现有层次分析法进行了两个方面的改进。以构件受力类型划分评级层次,对砌体结构,根据其构件特点,将结构构件划分为墙、柱、梁、板四个层次分别进行评级;对于每一个层次内部的构件重要性指标不再使用主观判断、两两比较的方法,而是在对房屋结构进行建模分析的基础上,以层次内构件分担的荷载作为构件的重要性指标,并编制 MATLAB 程序计算权重向量。这种方法能够比较客观的考虑构件的重要性,避免了主观评判的干扰。

Abstract: China City Metro will be at the peak of construction and operation in next several years. The seepage of the shield tunnel in soft soil is a key problem which will be a great threat to the safety of the tunnel. In this paper, analytical solution and numerical solution will be used to research the tunnel's long-term behavior such as seepage field, the settlement of the ground, the force of the tunnel and so on. The main work of this paper is as:

Although the numerical method is widely used in solving the seepage field and the long-term behavior of the shield tunnel, as the analytical can be more accurate to reveal the mechanism of seepage of the tunnel, it is still very desirable to do research on analytical solution of the seepage field and the settlement of the ground. In this paper, an assumption is adopted which is that the total water head on the external circumference of the tunnel is an unknown variable, and the equality of the water inflow into the tunnel from the soil and through the tunnel lining is used. Based on this, the analytical solution of the seepage field and the settlement of the ground is derived. And the influence of the relative permeability of the lining and the soil as well as the depth of the tunnel on tunnel's long-term behavior is revealed.

In fact, the seepage of the tunnel is not uniformity, but concentrates on the joints of the tunnel. Base on the field data, a numerical model is established to study the influence of the side seepage of the tunnel on the tunnel's long-term behavior. And the result show the pore water pressure near the joint seepage will decrease greatly and the settlement of

the ground will increase.

The permeability of the soft soil is always not uniformity. Its permeability of the horizontal direction is large than the vertical direction. In this paper, the permeability of the tunnel is assumed to be orthotropy. The influence of the orthotropy of the permeability of the ground on the long-term behavior is studied. The coupling of the orthotropy of the permeability of the ground and the joints seepage of the tunnel is studied as well. It is revealed that for the tunnel under the ground of orthotropy permeability, its pore pressure around the tunnel and the maximum settlement of the ground will decrease, but the wide of the settlement trough will increase.

[55] 娄中波. 天津地下交通空间开发关键技术研究[D]. 同济大学, 2014.

摘要：本文通过广泛研读相关地下交通空间工程、城市中心区地下工程的边坡支护、结构施工、防水工程等文献，并对国际国内的一些相关工程实例进行调研，同时密切结合自己参建的泰达 MSD 地下交通空间工程、天津站综合交通枢纽工程、天津西站综合交通枢纽等地下交通空间工程，对其关键技术问题进行总结，以期为今后类似工程建设提供理论依据和设计指导。

天津地下空间规划在平面上形成“一环、一轴、一主、两副、多点”的布局结构，至规划期末，将完成地下公共服务空间超过 200 万平方米，地下停车场 600 万平方米，容纳车位数达到约 15 万辆。天津现阶段的地下交通空间建设呈现出“集约化、综合化、大型化”等特点，地下交通空间正由单一隧道向复杂网络进行转变。

本文通过研究地下交通空间布局模式，整理出地下交通空间总体布局的确定流程：第一步是进行交通量预测及分析，全面把握拟建项目的交通运行情况。第二步是确定地下主隧道的布局形式，主隧道是整个地下交通空间的核心和灵魂。第三步是确定地面出入口的设置形式，要合理布置出入口，减少到发交通绕行。第四步是布局方案的检验，通过交通仿真，直观的把握建成后的交通效果，规避投资失败。

本文通过对天津泰达 MSD 地下交通工程施工过程中采用的施工方法、专项方案以及相关理论计算进行介绍，同时对施工过程中发现的问题进行探讨，期望为未来城市中心区修建复杂地下交通空间工程提供参考，加速和推进天津地下交通空间的建设步伐。

防灾减灾具有多学科交叉特性，防灾措施研究应贯穿地下交通空间工程建设的全过程。本文结合天津地下交通空间建设经验，创造性的提出了多学科灾害综合防治措施，并提供了天津地下交通空间的有关建设案例，为地下交通空间灾害综合防治开辟了新的思路。

Abstract: In this paper, through extensive reading of underground engineering in the center of the city underground space engineering, slope support, structure construction, waterproof engineering and related engineering literature on international and domestic research, combined with the TEDA MSD underground space engineering, TianJin Railway Station comprehensive underground traffic space of comprehensive transportation hub project, TianJin West Railway Station integrated transport hub project and summarizes the key technology problems of underground space engineering, in order to provide theoretical basis and guidance for the design and construction of similar projects in the future.

The layout structure of Tianjin underground space planning is referred to as "a ring, a shaft, a principal, two deputy

and multiple points", the planning period, the public service will be built underground space of more than 2 million square meters, underground parking lot of 6 million square meters, the number of parking spaces to accommodate about 150 thousand cars. At present, the construction of underground traffic space in Tianjin is characterized by intensive, comprehensive and large-scale, and the underground traffic space is changing from single tunnel to complex network.

In this paper, through the study of the underground traffic space layout mode, sorting out the overall layout of the underground traffic space: the first step is to make the traffic volume forecast and analysis, a comprehensive grasp of the traffic operation of the proposed project. The second step is to determine the layout of the main tunnel, the main tunnel is the core and soul of the whole underground transportation space. The third step is to determine the ground entrance layout form, reasonable layout of entrance, to reduce traffic detour. The fourth step is the layout of the program, through the traffic simulation, intuitive grasp of the traffic effect after the completion of the investment to avoid failure.

Based on the construction method, the construction process of Tianjin TEDA MSD underground traffic engineering in special programs and related theoretical calculation are introduced, at the same time to find the problems in construction process are discussed, hoping to provide some reference for the future of the city center area to build complex underground space engineering, accelerate and promote the pace of construction of the Tianjin underground traffic space.

Disaster prevention and mitigation has the characteristics of multi discipline, and the research of disaster prevention measures should be carried out through the whole process of underground traffic space engineering construction. This combination of Tianjin underground space construction experience, creatively put forward the multi discipline comprehensive disaster prevention and control measures, and provides relevant examples of the construction of Tianjin underground traffic space, opens up a new way for the comprehensive prevention and control of underground traffic space disaster.

[57]董徐奋.基于历史文物建筑邬达克别墅的结构体系及其施工工艺研究[D].同济大学,2011.

摘要：文物建筑是历史文化的载体，那些老建筑、老住宅、老街区留下了过去历史的痕迹，是传统的文化脉络，在中国建筑史上有重要一笔。保护不同时代、不同风格、不同形式、不同民族的建筑，就是保存历代劳动人民在建筑、工程、艺术方面的成就，作为今天的借鉴，向人民进行历史唯物主义和爱国主义的教育，为今天所“用”。

在我国众多文物建筑中，绝大部分建筑都属于砖木结构。我国最近对砖木结构房屋研究越来越多，但在材料的应用技术、房屋的设计技术和建筑技术方面还没有作详细的介绍。

本论文探讨砖木结构建筑的结构体系及其施工工艺，加深对砖木结构建筑的认识。通过对上海邬达克别墅(Hudec's Residence)的分析研究，进一步深化对砖木结构的保护，其主要内容如下：

- 1.提出了文物建筑的保护，对文物建筑的保护对象，保护内容，保护方式进行了说明。
- 2.讨论了邬达克别墅的建筑特点，包括建筑风格和外立面现状分析。对邬达克别墅的结构体系作了详尽的研

究，包括基础工程、楼盖工程、墙体工程、屋盖工程等四大部分作了论述。

3.研究了鄂达克别墅的施工工艺，包括基础工程、楼盖工程、屋盖工程、装饰工程等四大部分作了论述。

4.利用 MIDAS/GEN 软件建立三维模型，通过对结构在恒、活荷载、风荷载、静力地震荷载作用下的计算，得到了结构在静力作用下的内力和变形。

5.在对结构进行模态分析后，得到了结构的自振特性以及结构在各个方向的主振型，并结合模态分析的结果对结构进行了振型分解反应谱分析，得到了结构的抗震特性。

6.对结构进行动力时程分析，得出结构在地震作用下的动力响应。

结果表明，利用 MIDAS/GEN 软件建立三维模型，通过对计算结果的处理，较为直观地反映了该结构的受力和变形情况，进行风荷载和地震作用下的响应分析是完全可行的而且能得到较高的精度，完全可以满足工程需求。

Abstract: Historical and cultural relics are the carrier of history and culture. Those old buildings, old residential area, old streets in the city are past historical vestiges. They have traditional cultural contexts, which have left important brushstroke in Chinese architecture. Protect different times and different style, different forms, different nationalities buildings, is preserved in the laboring people in construction, engineering, artistic achievement. As to today's reference, protecting historical and cultural relics is behalf of the people's historical materialism and patriotism education for today uses.

In our country, most of cultural relic buildings belong to brick-wood structures. In China recent researches are increasing in brick-wood structures, but the application of material technology, housing design technology and construction technology is not be introduced in detail.

This paper discusses the structure and construction of brick-wood structure, and deepens the understanding of brick-wood structure. Through the research of Hudec's Residence, further deepens the protecting brick-wood structure, its main contents are as follows:

1. Has discussed the historical building protection, illustrated protection of cultural relics in contents, objects, protection method;

2. Has discussed architectural features of Hudec's Residence, including the architectural style and current situation on facade. The paper also has made a thorough research in structure style, including foundation engineering, floor engineering, wall engineering, and roof engineering and so on;

3. Has studied the construction process of Hudec's Residence, including foundation engineering, floor engineering, roof engineering, decoration engineering and so on;

4. Through calculation and analysis of static modal under dead load, live load and wind load, seismic load, we derived the seismic character of the structure;

5. After the modal analysis of dynamic modal, the paper derived the self-sustained oscillation character and the main modes of structure. It is derived the anti-seismic character of structure combining the seismic accelerate response plectrum analysis;

6. Based on the calculating results of dynamic time-history analysis, dynamic responses of the structure under seismic ware are obtained and compared it with the spectrum results.

According to calculating and analysis results of the structure by MIDAS/GEN software , internal force and deformation of the structure are obtained. They show that the calculation results are more intuitive to reflect the structure of the force and deformation conditions under wind loads and seismic response analysis. They are entirely feasible and higher precision and fully meet the needs of project.

[58] 聂文高. 周边既有多层砌体房屋现状对基坑施工报警值取值的影响研究[D]. 同济大学, 2016.

摘要：随着中国城市建设的快速发展,在城市建设中遇到了大量的基坑工程。在基坑施工过程中,基坑降水、土体开挖和支撑结构横向的变形都将引起基坑周围土体的变形、沉降。当土体变形量过大时,将会危及到附近的地下管线、道路和建筑物的安全与使用。由于许多基坑工程周边建筑建造年代不同,结构的完损状况也有所不同,建筑的保护等级也有所不同,如何因地制宜确定基坑工程周边房屋报警值就成为工程实践迫切需要解决的问题。本课题主要就周边既有多层砌体房屋现状对基坑施工周边房屋报警值取值的影响进行研究。主要工作内容和取得的成果如下:

本文首先在理论层面分析了基坑施工引起周边土体变形的机理以及土体扰动对周边建筑物基础的影响,对基坑-土体-房屋进行整体的分析。调研了工程实践中常用房屋报警值的确定方法与不足。

其次在理论层面分析了既有多层砌体房屋抵抗变形能力。通过引进模糊数学理论量化评估房屋完损等级,以完损等级的变化为控制标准,进一步分析多层砌体房屋抵抗附加变形能力,从而确定基于房屋保护策略的砌体房屋报警值。

基于前人的工程实践和理论、数值分析成果,本文提出了基于 ABAQUS 有限元程序的数值模拟方法,系统研究基坑施工对周边既有砌体房屋完损性评定的影响。模拟方法为对基坑、土层、房屋基础、上部房屋进行整体建模,考虑基坑施工动态过程,较精细的模拟基坑施工全过程中既有房屋各构件的受力、损伤情况。本文考虑基坑边砌体房屋初始损伤不同,研究了基坑施工对既有多层砌体结构房屋的影响,得到了既有多层砌体房屋完损性受基坑施工影响的较为通用的结论和规律。

最后文章以上海市某基坑施工影响某既有多层砌体房屋的实际工程为例,用数值模拟的方法分析基坑施工对房屋完损性的影响,确定了该砌体房屋监测报警值,对比实测结果,论证了本文研究方法的合理性,并对今后相关工程的分析提供借鉴。

Abstract: With the rapid development of China urban construction, a lot of foundation pit project in urban construction have sprung up. In the process of foundation pit construction, due to the extraction of groundwater, the lateral deformation of the retaining structure is leading to soil deformation and subsidence around the foundation pit. If the deformation is too big, it will threaten the safety of the underground pipelines, roads and building in the surroundings. Because of many different constructions surrounding the foundation pit, condition of the damaged buildings are different, building protection levels are also different. The way to adjust measures of local conditions determines the alarm value and becomes the foundation pit construction engineering problem solution. This topic is mainly about the present situation of multi-story masonry buildings alarm value under the influence of the constructing foundation pit. Main work contents and achievements are written below:

At the beginning, this paper analyzed the theoretical mechanism of the deformation of surrounding buildings and the soil disturbance caused by foundation pit construction. In accurate assignment of building damaged property, it's necessary to take building rigidity and building-soil interaction into account. And also analyzing the deficiency of the traditional method of determination of alarm value.

Secondly, this paper analyses the capacity of the existing multi-story masonry buildings deformation resistance. In order to determine the different requirements of surrounding buildings alarm levels, on the basis of the change of the damage level, by further analysis of multi-story masonry buildings evaluate the damage of the building using fuzzy mathematics theory and then calculate additional deformation resistance ability.

Finally based on a certain foundation pit construction which affects surrounding multi-story masonry buildings in Shanghai's actual project as an example, use method of numerical simulation analysis analyze the influence of the foundation pit construction to the surrounded damaged buildings, comparing the measured results, demonstrate the rationality of the method in this paper, in order to study and analyze this kind of cases in the future.

[59]陈国祥.浦东大道 K4 标段地下快速路与轨交隧道施工对邻近建筑物附加变形影响的分析及控制研究[D].同济大学,2017.

摘要：鉴于城市地下交通发展的趋势，城市轨交隧道网络与地下快速路网络在地下空间使用上的冲突日益明显，轨交隧道与地下快速路一体化的集约布置方案已经越来越多的被用于工程实践。在地下快速路基坑开挖和轨交隧道盾构双重复杂施工工况的影响下，软土地区上部建筑不可避免的产生变形损伤，整体性差、建造年代久远的多层混合结构房屋，受地下快速路基坑开挖和轨交隧道盾构施工的影响尤为敏感。随着城市化进程加快，地下快速路和轨交隧道越来越多投入规划与使用，使得该问题的解决变得更加迫切。由于地下快速路基坑和轨交隧道盾构及上部既有建筑在空间联系上的紧密性，采用常规的弹性地基梁法或平面有限元法已难以分析地下快速路基坑-轨交隧道-土体的复杂变形性状及上部结构在复杂施工工况下的动态响应，因此本文采用三维有限元分析方法对地下快速路基坑和轨交隧道施工影响下地层变形性状及上部结构动态响应进行了系统的研究，主要内容包括如下几个方面：

1.在理论层面分析了地下快速路基坑开挖和轨交隧道盾构施工对土体扰动的机理以及基坑和盾构施工时土体同上部房屋共同作用的机理。由于房屋整体刚度远大于下方土体，当土层因基坑和盾构施工发生位移时，房屋与土体存在着复杂的相互作用，对土体应力、位移状态都会产生影响。想要准确评定房屋在地下快速路基坑和轨交隧道盾构施工影响下的附加变形及损伤状况，需要考虑土体与结构相互作用，对基坑-隧道-土体-上部结构进行整体的分析。

2.建立土-基坑-隧道-上部结构共同作用的三维有限元模型；采用弹塑性的摩尔库伦模型模拟地下快速路基坑开挖和轨交隧道盾构过程中土体的非线性特性；基于面-面接触模型实现了桩与土体之间的接触算法，用以真实的模拟桩与土体的相互作用，采用 ABAQUS 生死单元法模拟基坑开挖和隧道盾构施工全过程，进而实现了对上部结构动态响应的全过程仿真模拟。系统地分析了地下快速路基坑开挖和轨交隧道盾构引起的地层变形性状，上部结构变形性状和应力应变性状及其空间效应。

3.在上海地区典型土层条件下,采用前面提出的三维有限元模型,在初始地应力平衡的基础上,通过 ABAQUS 生死单元法,逐步逐层激活上部结构,从而真实地模拟上部结构施工过程,以此引入上部结构载荷及刚度。随着上部结构施工的推进,下部土体产生变形,上部结构随之动态地产生响应,上部结构施工过程即结构与土相互作用的过程,从而引入上部结构初始变形及损伤,后续分析步在此初始变形及损伤的基础上进行分析。

4.在上述分析步的基础上,采用三维有限元模型模拟地下快速路基坑开挖过程,系统地分析了土体开挖过程中地层变形性状及上部结构附加变形性状和应力应变性状。考虑到地下快速路箱涵结构的重力和刚度作用在后期隧道盾构施工中对土体变形的调节作用,增加地下快速路箱涵结构回筑施工步,以此引入了地下快速路箱涵结构载荷和刚度,更符合工程实际。

5.轨交隧道盾构施工采用目前应用最广泛的模拟方法,采用精细的三维有限元模型,考虑盾构开挖,衬砌激活,注浆及浆体硬化过程,在盾构机推进过程中考虑盾构机工作面支护压力、注浆压力的变化对土体位移场的影响,通过对盾壳的单元生死,实现盾构机的推进过程,较为真实地模拟了盾构施工全过程。

6.采用锚杆静压桩及地基处理的方式对既有建筑地基进行加固,采用三维有限元模型对加固效果进行分析,提出合理的加固方案。此外本文还分析了隔离墙对建筑物附加变形的控制作用。

最后文章以上海市某地下快速路基坑和轨交隧道盾构施工影响某多层混合结构住宅的实际工程为例,用三维有限元模拟的方法分析轨交隧道盾构施工对房屋附加变形的影响分析,论证了本文研究方法的合理性,并对今后相关工程的分析提供借鉴。

Abstract: In view of the trend of the development of city underground traffic, city rail transit network and underground rapid channel network conflict in the underground space use is becoming more and more obvious, consequently, intensive layout of rail transit and underground expressway integration has been more and more used in engineering practice.

Under the influence of excavation and shield dual complex construction conditions, the upper structures in the soft soil area are inevitably damaged. In these structures, the multi-story structure houses with poor integrity and long construction time are particularly sensitive to excavation of the foundation pit and subway shield construction.

What's more, with the rapid development of urbanization, more and more underground expressway and rail transit are involved in the planning and use of the subway, which makes the solution of the problem more urgent.

Because of the close connection between channel excavation, underground rapid rail transit shield and the upper part of the existing building, it is difficult to analyze the complex deformation characteristics of foundation pit-tunnel-soil and the dynamic response of upper structure under complicated construction conditions by using

conventional elastic foundation beam method or plane finite element method. Therefore, the three-dimensional finite element analysis method is used in the paper to study the deformation characteristics of foundation pit-tunnel-soil and dynamic response of upper structure. The main contents are as follows:

1.The mechanism of excavation and shield construction to the soil disturbance is analyzed, and the mechanism of the interaction between the soil and the upper building is also discussed, on the theoretical level. As the overall stiffness of the building is much larger than the lower soil mass, when the soil layer is displaced by the foundation pit and the shield construction, the interaction between the building and the soil will be inevitable, and the stress and displacement

state of the soil will be affected. In order to evaluate the damage situation of the building under the influence of the foundation pit and the subway construction, it is necessary to consider the interaction between the soil and the structure, and to analyze the whole structure of the foundation pit-tunnel-soil-upper structure.

2.A three-dimensional finite element model of soil foundation pit- tunnel-upper structure is established which concludes their interaction; plastoelastic Mohr Kulun model is used to simulate the excavation of a foundation pit and the nonlinear characteristics of the soil during the subway shield; Based on the surface to surface model, the contact algorithm between the pile and the soil is realized to simulate the interaction between the pile and the soil, and then the simulation of the excavation process of the foundation pit and the subway is realized. And a systematic analysis of the deformation behavior of deep foundation pit excavation and tunnel, stress and strain behavior, and space effect is put forward.

3.In the typical soil conditions in Shanghai region, using the three-dimensional finite element model proposed above, based on the initial stress equilibrium, through birth and death element method, activate upper structure step by step, which is able to simulate the real construction process, in order to introduce the upper structure load and stiffness.

4.Based on the above analysis steps, using the three-dimensional finite element model which simulate the excavation process of underground expressway, systematic analyzes the soil displacement of diaphragm wall construction and the excavation of soil, as well as the deformation of upper structure. Taking into account the regulation of soil deformation in the later tunnel shield construction, which caused by the gravity and stiffness of the box culvert structure of the underground expressway structure, the combination of the supporting structure of the foundation pit and the structure of the underground structure, not only simplifies the supporting structure of the foundation pit, but also introduces the box culvert structure of the underground expressway, which is more in line with the actual engineering.

5.Tunnel shield construction adopts the most widely used simulation method at present, which is the use of the fine three-dimensional finite element model to consider the shield excavation, lining activation, grouting and the hardening process of the slurry. The influence of the support pressure and the grouting pressure on the displacement field of the shield machine is considered in the process of advancing the shield machine, and through the life and death of shield shell, the process of shield machine is realized, which makes the whole process of shield construction is simulated.

6.Anchor pile and foundation treatment method is adopted to reinforce the existing building foundations. And reinforce effect is analyses by a three-dimensional finite element model. In addition, the control effect of the wall and soil reinforcement on the additional deformation of the building is also analyzed.

Finally, the paper takes the actual project of a certain multi-story residential structure as an example of the foundation pit and subway shield construction of an underground expressway in Shanghai. The influence of foundation pit excavation and shield construction on the additional deformation of building is analyzed by three-dimensional finite element method. They demonstrate the rationality of the research method and provides reference for the analysis of related projects in the future.

摘要：房屋增层改造、房屋内部功能荷载变化、房屋周边环境变化等等，这些因素都会引起既有房屋基础和地基土原先受力情况的变化，这必然引起对既有基础的鉴定和加固，本文选定多层砖混结构下条形基础为研究对象，用筏基础加固该条形基础，通过理论分析，数值模拟和实例分析，研究筏基础加固既有条形基础后受力分布、竖向位移以及主要施工流程对于基础受力和位移的影响。主要内容包括如下几个方面：

(1) 查阅大量相关文献，从理论上分析了筏基础加固既有条形基础后基础受力及竖向位移情况。充分考虑实际情况，选取合理的材料参数，对模型进行全过程有限元模拟分析，从最初的固结沉降到基础加固，最后再进行固结沉降。

(2) 改变基础加固后新增加荷载的大小，分析后期新增加荷载的不同对于基础加固后基础受力及沉降的影响。

(3) 通过模型计算结果对比，分析上部结构对筏基础加固既有条形基础后基础受力情况和竖向位移情况的影响；新增加筏基础肋梁的设置对基础加固后受力情况的影响；施工过程中覆土开挖顺序对基础加固后基础受力和沉降情况的影响。

(4) 最后文章以上海市某多层混合结构的筏基础加固既有条形基础实际工程为例，用数值模拟的方法分析基础加固后，在新增加荷载的作用下基础受力情况及沉降，并手算复核既有条形基础的承载力。最后，关于进一步工作的方向进行了简要的讨论。

Abstract: Housing reconstruction increasing layers, load changes, environmental changes around the house, etc. These factors will lead to the changes the force in the existing foundation and soil, which would inevitably lead to the identification and reinforcement for the existing foundation. This paper election the strip foundation of the masonry-concrete structure for the study. Using raft fountdation reinforce the strip foundation. Through theoretical analysis, numerical simulation and case studies, the research about the force of the foundation which is reinforced, vertical displacement and the effects that the main construction process give to the force and displacement of foundation. The main contributions of this thesis are described in the following:

(1) Through reading large literature, the paper analyze theoretically the force and vertical displacement of the foundation which is reinforced with the raft foundation. Fully consider the actual situtation, selecting appropriate material parameters, the whole process of the finite element analysis will be done. The process will start from the initial consolidation, the foundation reinforcement to the second consolidation.

(2) Through changing the size of the additional load to the foundation which is reinforced, the analysis of the impact that the force and vertical displacement of the foundation will be given from the different load.

(3) By comparing the calculation results of the different models, the paper will analyze the impact that superstructure, beam that setted in the raft foundation and overburden excavation sequence give to the force and vertical displacement of the foundation which is reinforced with the raft foundation.

(4) By using finite elemental method anlaysing an project case which is a masonry-concrete structure in Shanghai, the force and vertical displacement of the foundation which is reinforced under the new load will be researched, and the carrying capacity of the existing strip foundation will be reviewed.

[61]王亮亮.预制桩施工与土方开挖[D].同济大学,2014.

摘要：随着工程建设规模的扩大，对基坑支护技术的要求越来越高。由于基坑支护的失效引起的工程事故越来越多。重力式挡墙是一种常见的基坑支护形式，施工时振动和噪音小，工期较短，无支撑，既可挡土又可防水，而且造价低廉。近年来，国内已较广泛用于软土地基的基坑支护工程，在上海地区应用广泛，多用于深度不超过6m的基坑。而桩基础的存在以及土方的开挖方法不同，对其稳定性及变形的影响这方面的分析很少。

本文首先主要研究了重力式挡墙的设计与施工，对其支护机理及失效模式进行分析。总结了预制桩施工的常见方法，以及常见的几种土方开挖方式。

其次利用 MIDAS/GTS 软件进行了有限元分析，模拟实际基坑施工。对比不同的开挖方式对基坑和重力式支护结构的影响，考虑到实用性，选择中心式开挖和盆式开挖，主要对基坑变形、挡墙变形和应力进行对比；分析有桩基础的存在条件下，土方开挖对基坑和重力式支护结构的影响，主要考虑重力式支护结构的变形和应力情况。

最后以上海某基坑工程为例，对采用重力式支护结构进行方案设计和提出具体施工工艺。

Abstract: With the expansion of the scale construction , foundation pit techniques have become increasingly demanding. As the failure of foundation pit due to engineering accidents is increasing. Gravity retaining wall is a common form of foundation pit, the vibration and noise of construction is small, short duration, no support, either retaining can also waterproof, and inexpensive. In recent years, China has been more widely used in soft soil of the foundation pit project, widely used in the Shanghai area, used for no more than 6m deep foundation pit. The presence of pile foundation and different soil excavation methods, its stability and deformation analysis of the impact with this area is few.

This paper firstly studies the design and construction method of gravity retaining wall ,and its supporting mechanism and failure mode. Then the paper summarizes the common method of construction of precast pile, as well as several common soil excavation methods.

Secondly, the MIDAS/GTS software is used to simulate the actual foundation pit construction. Compare different methods of excavation pit and the gravity of the supporting structure of the impact, taking into account practicality, Choice, and basin-style-type excavating excavation, the main deformation of the foundation pit, retaining wall deformation and stress comparison; analysis has the existence of pile foundation under the conditions of earth excavation pit and the gravity of the supporting structure of the main supporting structure of gravity to consider the deformation and stress conditions.

Finally an excavation in Shanghai, for example, on the use of gravity-type retaining structure design and propose concrete construction technology.

[62]王梦磊.考虑周边环境房屋初始变形的基坑工程设计与施工优化研究[D].同济大学,2015.

摘要：近年来，随着我国经济的蓬勃发展，越来越多高楼大厦逐步普及到全国，深基坑工程成为首要解决的

问题。目前深基坑工程已经形成一套完整的体系，具备安全妥善处理深基坑工程的能力和技术，并且积累了多年来成功案例的工程经验。基坑开挖必然对周围环境产生影响，进而影响周围房屋的沉降、倾斜等。本文通过实际的基坑工程项目模型，来探讨基坑施工全过程中挡墙及防渗帷幕施工阶段、降水阶段、支撑施工及土方开挖阶段、换撑及地下结构施工阶段对周围土体及既有房屋变形与受力的影响分析，进而研究了考虑周边房屋初始变形的基坑围护结构设计方案优化研究、基坑土方开挖顺序的优化研究、基坑岛式、盆式开挖方案的优化研究。主要工作有以下几点：

(1)研究了目前基坑开挖采用的主要开挖方式，并对每种开挖方式的优点和缺点做了说明，同时简单介绍了每种开挖方式抑制变形的原理。基坑开挖具有明显的时空效应，探索了如何通过选择恰当的开挖方式来降低时空效应的影响。

(2)研究了上海地区软土地基有限元参数的选取，进而分析了围护结构施工、基坑降水、支撑施工及挖土阶段、换撑及地下结构施工等整个基坑施工过程对周围土体及既有变形的框架结构沉降及内力变化的影响。

(3)首先，研究了房屋损坏的五个等级及相应的沉降、倾斜判定依据，从而阐述了不同的优化目标。然后结合基坑工程项目的工程特点，对主要设计与施工开挖方式做对比分析，对比了不同开挖顺序的影响，最后，通过有限元软件 MIDAS GTS 分别取中心开挖面积为基坑总面积 0.55、0.6、0.7 倍建立 3 个基坑岛盆式开挖模型模拟开挖工况，最终对比周围土体及既有房屋变形与受力情况确定出最理想的开挖比例。

(4)依据有限元软件 MIDAS GTS 对实际工程进行模型计算，其结果与实际监测数据基本吻合，从而证明有限元参数选取的合理性，在此匹配模型的基础上，按着第四章所得设计与施工工艺的优化结论对模型进行调整，重新对模型进行运算得出模型优化后周围土体变形及周边既有变形框架结构内力及位移变形数据，拿该数据与实际的监测数据、优化前匹配模型的计算数据对比，来证明设计与施工方法优化的合理性。

Abstract: In recent years, with the vigorous development of our economy, more and more high-rise buildings gradually spread to the country, deep foundation pit engineering becomes the primary problem. The deep foundation pit engineering has formed a complete system, has the security to properly handle the ability of deep foundation pit engineering and technology, and accumulated the successful cases of engineering experience for many years. Excavation inevitably has the influence on the surrounding environment, and thus influence the settlement of surrounding houses, tilt, and so on. In this article, through the actual model of foundation pit engineering project, to discuss the whole process of construction of foundation pit retaining wall and anti-seepage curtain in construction stage, precipitation phase, support construction and earth excavation, in supporting and underground structure construction phase on the surrounding soil and the analysis of the influence of both the deformation and stress distribution house, then studied considering the surrounding houses initial deformation of foundation pit retaining structure design optimization research, earthwork excavation sequence optimization research, the excavation of foundation pit island type, basin excavation scheme optimization research. The main work is the following:

(1) study of the current main excavation method used in foundation pit excavation, and the advantages and disadvantages of each excavation way did show that the deformation of each excavation method was introduced at the same time suppress principle. Excavation has obvious effect of time and space, and explores how to through selecting proper excavation method to reduce the effect of time and space.

(2) the finite element parameters selection of soft soil foundation in Shanghai, and then analyzes the palisade structure construction, foundation pit precipitation, support construction and digging stages, in supporting and underground structure construction, the whole process of foundation pit construction on the surrounding soil and both the settlement and deformation of the frame structure of the influence of the internal force change.

(3) first, studies the five houses damaged level and the corresponding settlement, tilt to determine the basis, and expounds the different optimization objectives. And combining with the engineering characteristics of foundation pit engineering project, the main design and construction of excavation method do contrast analysis, comparing the effect of different excavation sequence, and finally, through the finite element software MIDAS GTS respectively take center excavation area of foundation pit with a total area of 0.55, 0.6, 0.7 times the three island tub excavation model simulation working condition of excavation, eventually contrast and both the building deformation and stress distribution of surrounding soils to determine the optimal proportion of excavation.

(4) based on the finite element software MIDAS GTS model for the actual project is calculated, the result was consistent with actual monitoring data, so as to prove the rationality of the finite element parameters selection, on the basis of the matching model, according to the fourth chapter to optimize the design and construction technology of conclusion to adjust model, optimizing model is obtained for arithmetic model again after the deformation of soil around and around both the deformation of frame structure internal force and displacement deformation data, the data with the actual monitoring data, the calculation model of optimizing matching before data comparison, to prove the rationality of the design and construction method optimization.

[63]张嫣妮.高层建筑幕墙结构安全性评估体系研究[D].同济大学,2012.

摘要：改革开放以来，建筑业的高速发展，城市内的高层和超高层建筑犹如雨后春笋。国外 50 年代新兴的幕墙建筑技术及产品迅速进入我国建筑市场并在大中等城市得到广泛的应用。但在 20 世纪 90 年代之前，我国工程界对幕墙建筑的技术储备少，致使玻璃幕墙市场在那时一度出现混乱状况。这些带隐患的玻璃幕墙已形成了城市上空，特别是闹市区的“定时炸弹”。玻璃幕墙在我国发展至今正好有二十年左右，很多幕墙都陆续出现了各种问题。

正是基于此环境，本文旨在对高层建筑幕墙结构安全性评估体系进行研究。结合试验、数值模拟及工程实例，完善《玻璃幕墙安全性能检测评估技术规程》(DG/TJ08-803-2005)规范中幕墙的评估方法，首次系统分析空间位置对幕墙安全性的影响，提出利用空间修正因子对幕墙安全等级进行修正。并对原规范三大评估子项（承载力、结构和构件、构件和节点变形）的基础上对各子项进行了细分，并确定了整体目标函数、子项、根项及最底层的四个评估层次。对不同重要程度的构件采用了权重的思想考虑其在整个评估体系中的重要性程度，使评定结果更加科学。

Abstract: The swift growth of the national economy promotes the rapid development of the whole construction industry since the reform and opening-up. Urban high-rise and ultra-high-rise buildings spring up like mushrooms. In such a situation, the new raising curtain wall architecture technique from other countries is bound to enter the construction

market in our country. However, before 1990s, our engineering construction of the curtain wall was short of technical reserves. As a result the glass curtain wall market was a chaotic at that time. These curtain walls with hidden dangers have been formed over the city as "a time bomb." The glass curtain wall has been developed in China for two decades so far and there were various problems emerged in succession.

It is based on this situation that we conduct a study on the safety assessment system of curtain wall in high-rise buildings with test, numerical simulation and engineering project to complete the old assessment way. The affect of spatial allocation to curtain wall security is first proposed in this thesis, and take the space modifying factor into considering while estimate the security level of curtain wall. The sub key (load carrying capacity, member and structure, deformation of component) are subdivided into more parts to make a more scientific result.

[64]赵传凯. 复合土钉墙支护风险分析与控制研究[D]. 同济大学, 2009.

摘要：复合土钉支护作为一种新型的支护形式，因其经济可靠且施工简便快捷，已在我国基坑工程中得到较为广泛的应用。但是，由于基坑工程本身的复杂性和实际的勘察、设计、施工过程中存在着许多的不确定因素，使得每一个不确定因素都有可能成为导致基坑工程失败的因素。因此，事先对支护进行合理、客观的风险分析，对于确保基坑工程的顺利实施具有重要意义。

本文主要进行了以下几方面的工作：

1、通过大量资料的查阅和实地调研，从基坑事故原因和围护类型两方面对基坑事故的发生进行统计，在此基础上通过工程实例分析了勘察、设计、施工过程中事故发生的原因；

2、简要阐述了风险管理的概念和基本方法，结合对工程的调研和资料分析，对复合土钉支护从勘察、设计到施工的整个实施过程进行了风险分析，识别出了各阶段的主要风险因素，为采取合理的措施进行风险控制提供了依据；

3、鉴于一般的风险评估方法受主观因素影响较大的不足，本文尝试采用可靠度的方法进行风险分析，利用 ANSYS 有限元软件，通过建立模型进行力学分析和蒙特卡罗随机抽样，得到了土钉支护在施工阶段的失效概率；

4、参考许多学者的研究成果，初步提出了土钉支护施工队周边环境影响的计算方法；

5、对应于前述内容中识别出的风险因素，提出了风险控制的具体措施和方法。

Abstract: As a new type of retaining wall, Compound soil-nailing has been wildly used in bracing deep foundation pit because of its advantages, such as economical, reliable and convenient. But for the complexity of excavation itself and uncertainties in site investigation, design and construction, any unfixed factor can lead to project failure. So, a reasonable and objective risk analysis in advance is needed. It has great importance of ensuring smooth implementation of excavation construction.

The paper did research in the following aspects:

1. Based on huge amounts of data and fieldwork, statistics for pit accident from both pit accident cause and retaining type are made. Then the cause of pit accident in the site investigation, design and construction are analyzed with the engineering example.

2. The concept and method of risk management is discussed briefly, and risk analysis is made to show the main risk factors in the site investigation, design and construction. It provides basis for taking measures to risk control.

3. Since subjective factors affect risk assessment greatly, this paper applies reliable method to make risk analysis. The general finite element software ANSYS was utilized to modeling, mechanic analysis and Monte-Carlo stochastic sampling. Then the failure probability of soil nailing support in the construction is given.

4. Based on previous study results made by other researchers, computational methods of soil nailing support affecting surrounding environment are proposed.

5. According to risk factors showed in preceding paper, concrete measures and methods of risk control are proposed.