

吴兴征老师指导的 2019 级土木工程毕业设计列表（2023 年）

NO	毕设论文题目	学号	姓名	备注
1	海上光伏发电桩基础设计与方案比选	20191603213	吴群	G1901
2	山区桥梁桩基础设计与方案比选	20191603189	牛钰炎	G1902
3	海上风电独立桩基础设计与方案比选	20191603119	赵子川	G1903
4	浅埋式双层钢筋混凝土框架结构（地铁站）设计	20191603011	宋爱青	G1904
5	轻型高填方路堤加筋设计与选型	20191603149	朱中帅	G1905
6	高层建筑物桩筏基础的设计方案比选与造价分析	20191603163	何荣航	G1906
7	高层住宅楼的复合桩基设计与方案比选	20191603228	杨鹏博	G1907
8	强风地区太阳能面板支撑体系及毗连基础设计	20191603185	李佳骏	G1908
9	防波堤的稳定分析与设计	20191603160	翟相颐	G1909

NO	Title	Student number	Name	Note
1	Pile foundation design for the offshore photovoltaic power generation and scheme comparison	20191603213	Qun Wu	G1901
2	Design and comparison of bridge pile foundation and scheme in mountainous area	20191603189	Yuyan Niu	G1902
3	Design and scheme comparison of independent pile foundation for offshore wind power	20191603119	Zichuan Zhao	G1903
4	Design of shallow buried double-layer reinforced concrete frame structure (subway station)	20191603011	Aiqing Song	G1904
5	Reinforcement design and selection of light high fill embankment	20191603149	Zhongshuai Zhu	G1905
6	Design scheme comparison and cost analysis of pile raft foundation in high-rise buildings	20191603163	Ronghang He	G1906
7	Design and scheme comparison of composite pile foundation of high-rise residential buildings	20191603228	Pengbo Yang	G1907
8	Design of solar panel support system and adjacent foundation in strong wind areas	20191603185	Jiajun Li	G1908
9	Stability analysis and design of the breakwater	20191603160	Xiangyi Zhai	G1909

No	毕设论文题目	学号	姓名	备注
1	海上光伏发电桩基础设计与方案比选	20191603213	吴群	G1901
<p>随着海上光伏发电项目的迅速发展,工程实践中出现了许多必须解决的工程技术挑战。其中,基础是工程的重要组成部分。由于海上光伏发电项目的特殊性,设计必须考虑许多因素,如海底深度、海洋流动、波浪和风等。工程建设方案的选择直接影响基础设计的合理性。目前,已有很多学者对此进行了研究。本文以某海上光伏发电项目为背景,对桩基础的设计要点及关键技术进行了分析总结。研究结果表明:桩基础设计时需考虑波浪、海流等因素,应结合设计场地条件,进行桩基选型;对桩径、桩长、桩底入土深度等参数进行综合考虑;需考虑桩身材料的选用及特殊环境下的耐久性设计;对桩基础方案进行比选。</p> <p>关键词: 单桩基础; 荷载组合; 线性波浪理论; 钢管桩设计</p> <p>With the rapid development of offshore photovoltaic power projects, many engineering challenges arise in engineering practice that must be addressed. Among them, the foundation is an important part of the project. Due to the unique nature of offshore PV projects, the design must take into account many factors, such as subsea depth, ocean flow, waves and wind. The choice of engineering and construction solutions directly affects the rationality of foundation design. At present, many scholars have conducted research on this. In this study, the design points and key technologies of pile foundation are analyzed and summarized in the context of an offshore photovoltaic power generation project. The research results show that: the pile foundation design needs to consider the wave and sea current factors, and should be combined with the design site conditions, pile foundation selection; the pile diameter, pile length, pile bottom depth into the soil and other parameters for comprehensive consideration; need to consider the selection of pile body materials and durability design under special environment;the pile foundation scheme for comparison.</p> <p>Keywords: monopile foundation; load combination; linear wave theory; steel pipe pile design</p>				
No	毕设论文题目	学号	姓名	备注
2	山区桥梁桩基础设计与方案比选	20191603189	牛钰炎	G1902
<p>近几十年来我国交通运输业大力发展,桩基础在山区桥梁工程中的应用更加普及,在桥梁中应用的桩基础通常是由基桩和承台两大部分组成。本文</p>				

	<p>针对山区公路桥梁的设计要点及比较方案进行了研究，本项目结合北京市玉带河大街桥梁拟建工程，查阅相关设计规范，对山区路桥工程设计的基本原则和关键部分进行了综合分析。最后再通过造价分析，制定出符合山地地形特点的桥梁结构设计方案。</p> <p>关键字：山区桥梁；水文地质；桩基础；综合分析</p> <p>In recent decades, China's transportation industry has developed vigorously, and the application of pile foundation in bridge engineering in mountainous areas has become more and more popular. The pile foundation used in bridges is usually composed of two parts: foundation pile and cap. In this paper, the design points and comparison schemes of highway bridges in mountainous areas are studied. Based on the proposed bridge project of Yudaihe Street in Beijing, the basic principles and key parts of highway and bridge engineering design in mountainous areas are comprehensively analyzed by consulting relevant design specifications. Finally, through the cost analysis, the bridge structure design scheme which conforms to the mountainous terrain characteristics is worked out.</p> <p>Key words: Mountain bridges; Hydrogeology; Pile foundation; comprehensive analysis</p>			
No	毕设论文题目	学号	姓名	备注
3	海上风电独立桩基础设计与方案比选	20191603119	赵子川	G1903
	<p>随着科技发展的日新月异，人们的生活质量越来越高，国家与社会发展逐渐安定，但科技永远是把双刃剑。碳的排放量也越来越高，对于地球环境的保护显得迫在眉睫，而我们此次的设计就可以有效地利用可再生资源减少碳排放量。</p> <p>海上风电的设计极大地利用了海上强而有力的风力资源，这样不仅降低了环境污染，而且有效的利用了风力资源。海上风电不仅结构简单，技术也极为成熟。本次设计对于单桩的海上风电进行了设计，并利用土力学相关知识出荷载与变形，并根据这些数据进行内力、刚度、强度的验算。</p> <p>关键词：海上风电；桩基础；风力资源</p> <p>With the rapid development of science and technology, people's quality of life is getting higher and higher, and the national and social development is gradually stable, but science and technology is always a double-edged sword. Carbon emissions are also increasing, and it is urgent to protect the global environment, and our design can effectively use renewable resources to reduce</p>			

	<p>carbon emissions.</p> <p>The design of offshore wind power greatly utilizes the strong wind resources at sea, which not only reduces environmental pollution, but also makes effective use of wind resources. Offshore wind power is not only simple in structure, but also extremely mature in technology. In this design, the offshore wind power of the monopile is designed, and the load and deformation are calculated by using the R language, and the internal force, stiffness and strength are verified according to these data.</p> <p>Keywords: offshore wind power; pile foundations; wind resources</p>			
No	毕设论文题目	学号	姓名	备注
4	浅埋式双层钢筋混凝土框架结构（地铁站）设计	20191603011	宋爱青	G1904
	<p>近年来，由于我国经济的发展，以及市民的日渐提高的需要，各种建筑物及市政基础设施的普及，尤以浅埋式构造为主，它的特点在于：由于覆盖土层的厚度低，无法达到预期的拱形需求，因此，它在当今的建筑设计应用领域占有着举足轻重的地位。经过系统的分析，本次研究旨在探索浅埋式双层钢筋混凝土框架结构（如地铁站）的最佳设计，以及根据其特殊的使命、埋深以及岩土特征，选择出能够抵抗各种负荷的最佳组合。此次设计参照《建筑结构荷载规范》（GB50009-2001）计算了其各方向弹性地基梁的受力，参照《混凝土结构设计规范》（GB50010-2002）确定了框架钢筋的布置，并估算了工程量与工程造价。</p> <p>关键词：浅埋式；双层钢筋混凝土框架；框架钢筋；设计方案</p> <p>In recent years, due to China's economic development and the increasing needs of citizens, all kinds of buildings and municipal infrastructure have been popularized, especially shallow-buried structures. Its characteristics are: due to the low thickness of covering soil, it cannot meet the expected arch demand, so it plays a decisive role in today's architectural design and application field. Through systematic analysis, the purpose of this study is to explore the optimal design of shallow-buried double-layer reinforced concrete frame structure (such as subway station), and to select the best combination that can resist various loads according to its special mission, buried depth and geotechnical characteristics. In this design, the forces acting on the beams of elastic foundation in all directions are calculated with reference to the Code for Load of Building Structures (GB50009-2001), the arrangement of frame reinforcement is</p>			

	determined with reference to the Code for Design of Concrete Structures (GB50010-2002), and the quantities and project cost are estimated. Key words: Shallow-buried; double-layer reinforced concrete frame; Frame reinforcement; design scheme			
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5	轻型高填方路堤加筋设计与选型	20191603149	朱中帅	G1905
<p>相比传统的重力式挡土墙，加筋土挡土墙有很多优点是其所不具备的。加筋土挡土墙作为柔性结构，较强的适应性是其最突出的特点。随着工程环境以及地质条件趋向多样化，加筋土挡土墙凭借其优点，在工程中被广泛使用。本设计以双线公路土质路堤为背景，详细的介绍了包裹式加筋土挡土墙的设计思路以及方法。设计主要分为外部稳定性验算、内部稳定性检算、墙面板设计三部分。设计之初，根据现行规范进行纵断面设计，力争达到经济合理的要求；而后进行挡土墙的横断面设计，为后面的检算提供数据。再进行包括拉筋极限抗拉强度检算，单板全墙抗拔内部稳定性检算以及包括抗倾覆、抗滑移、地基承载力的外部稳定性验算；最后完成墙面板的设计。至此，完成包裹式加筋土挡土墙的全部设计。</p> <p>关键词:包裹式；加筋土挡土墙；设计</p> <p>Compared with the traditional gravity retaining wall, the reinforced soil retaining wall has many advantages that it does not have. As a flexible structure, the reinforced soil retaining wall is characterized by its strong adaptability. With the development, the engineering environment and geological conditions tend to diversify. Reinforced soil retaining wall is widely used in engineering with its advantages. With the background of double-line railway soil embankment, this study introduces the design idea and method of parcel reinforced soil retaining wall in detail. The design is mainly divided into three parts: external stability checking, internal stability checking and wall panel design. At the beginning of the design, the longitudinal section is designed according to the current specifications to meet the economical requirements; then the cross section of the retaining wall is designed to provide data for the subsequent calculation. Conduct the internal stability calculation including the ultimate tensile strength of single plate and whole wall resistance and the external stability calculation including overturning resistance, slip resistance and foundation bearing capacity; finally complete the design of the wall panel. So far, all the design of the wrapped</p>				

	reinforced soil retaining wall is completed. Key words: Wrapped; Reinforced earth retaining wall; Design			
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6	高层建筑物桩筏基础的设计方案比选与造价分析	20191603163	何荣航	G1906
<p>随着基础建设的发展，工程地质条件较差的土地也开始被当作建设用地来使用，同时在城市建设中高层建筑和有特殊要求的建筑的数量也逐渐增多。这样一来，对于基础的要求也就变得越来越高。如果地基的上部被较厚的软土层覆盖时，对于承载力和沉降的要求，浅基础往往满足不了。为了能够满足这一要求，我们便需要采用深基础来满足工程要求，比如桩基础，桩基可穿过软土层，以力学性能良好的土层作为建筑物的持力层，这样便能满足设计要求。为了解决因为地质情况带来的问题，我的设计方案就是根据地质情况来进行设计，根据计算来选出基础选型，结构的设计接着就是桩基的布置以及筏板的结构稳定性的各类计算和验算。接下来就是根据桩筏基础进行参数变动分析，改变筏板厚度和桩长，然后进行冲切、受剪、沉降等计算验算。最后在根据计算得出的各种方案来进行其造价估算，优选出设计方案以及其造价。</p> <p>关键词: 桩基础；筏板基础；桩筏设计；方案选对；造价估算</p> <p>With the development of infrastructure construction, the land with poor engineering geological condition has been used as construction land, and the number of high-rise buildings and buildings with special requirements in urban construction has gradually increased. As a result, the requirements for the foundation become higher and higher. If the upper part of the foundation is covered by a thick soft soil layer, the shallow foundation often can not meet the requirements of bearing capacity and settlement. In order to meet this requirement, we need to use deep foundation to meet the engineering requirements, such as pile foundation, which can pass through the soft soil layer, with good mechanical properties of the soil layer as the buildings bearing layer, this will satisfy the design requirements. So in order to solve these problems, my design plan is to design according to geological conditions, to select the basic type according to the computed results, the design of the structure is followed by various calculations and verifications of the layout of the deep foundation and the structural stability of the raft. The next step is to analyze the variation of</p>				

	<p>parameters according to the pile-raft foundation, change the thickness of raft and pile length, and then check the calculation of punching, shear, settlement and so on. Finally, according to the calculation of the various plans to carry out its cost estimates, the design and optimization of its cost.</p> <p>Keywords: pile Foundation; raft Foundation; pile raft design; scheme selection; cost estimation</p>			
No	毕设论文题目	学号	姓名	备注
7	高层住宅楼的复合桩基设计与方案比选	20191603228	杨鹏博	G1907
	<p>地质勘测作为地基设计中重要的一部分，可以让土木工程师在进行具体的设计之前了解到施工区域内不同土层的物理性质等。如今地基基础建设的发展已经允许工程师在土质存在软弱地基或特殊性的问题时，可以通过不同的地基设计方案来解决并避免这些问题带来的不良影响。挤密砂桩作为处理土体中存在液化层的主要方法，可以有效防止地基液化，可以有效固结土体，增强地基承载力。混凝土灌注桩作为地基基础设计中常用的技术之一，适用性强，能有效减少沉降，增强抗震能力。本文将根据施工现场区域的地质勘测报告，结合设计规范，设计拟建工程的桩基础。</p> <p>关键词: 挤密砂桩；灌注桩；地基设计；承台设计</p> <p>As an important part of foundation design, geological survey can enable civil engineer to understand the physical properties of different soil layers in the construction area before carrying out specific design. Nowadays, the development of foundation construction has allowed engineers to solve and avoid the adverse effects of soft or special soil problems through different foundation design schemes. As the main method for treating liquefied layers in soil, compacted sand piles can effectively prevent foundation liquefaction, consolidate the soil, and enhance the bearing capacity of the foundation. Concrete pouring pile, as one of the commonly used techniques in foundation design, has strong applicability and can effectively reduce settlement and enhance seismic resistance. This study will design the pile foundation of the proposed project according to the geological survey report of the construction site area and the design specifications.</p> <p>Key Words: Sand compaction pile; Cast-in-place piles; Foundation design; Cushion cap design</p>			

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8	强风地区太阳能面板支撑体系及毗连基础设计	20191603185	李佳骏	G1908
<p>太阳能光伏系统是一种可再生、清洁的能源来源。支撑框架和毗连基础是太阳能光伏系统中的重要组成部分，其结构设计直接影响太阳能光伏系统的稳定性和发电效率。本设计提出采用槽钢制造太阳能光伏面板支撑框架，预制混凝土桩作为基础的方案。太阳能光伏面板的支撑框架选用槽钢结构形式，此支撑框架受力特性符合槽钢材料的受力特性。同时，该设计使用可调节螺栓进行安装，使得施工更加便捷。当荷载达到最大时，对预制桩的内力进行分析，保证在最危险情况下预制桩的结构和承载力仍然满足要求；这个设计方案不仅满足了对太阳能光伏系统支撑结构的机械性能要求，同时还考虑到了太阳能光伏系统在不同环境下的适应性，具有实际应用价值。</p> <p>关键词：太阳能光伏面板；支撑框架；混凝土预制桩；桩基内力；排桩设计</p> <p>Solar photovoltaic systems are a renewable and clean source of energy. The support frame and the adjacent foundation are an important part of the solar photovoltaic system, and their structural design directly affects the stability and power generation efficiency of the solar photovoltaic system. This design proposes the scheme of using trough steel to make solar photovoltaic panel support frame and precast concrete pile as the foundation. The support frame of solar photovoltaic panel is in the form of trough steel structure, and the stress characteristics of this support frame are in line with the stress characteristics of groove steel material. At the same time, the design uses adjustable bolts for installation, making the construction more convenient. When the load reaches the maximum, the internal force of the precast pile is analyzed to ensure that the structure and bearing capacity of the precast pile still meet the requirements in the most dangerous circumstances. This design scheme not only meets the mechanical performance requirements of the supporting structure of the solar photovoltaic system, but also considers the adaptability of the solar photovoltaic system in different environments, which has practical application value.</p> <p>Key Words: Solar photovoltaic panels; supporting frame; precast concrete piles; internal force of pile foundation; pile group design</p>				
No	毕设论文题目	学号	姓名	备注
9	防波堤的稳定分析与设计	20191603160	翟相颐	G1909

防波堤是指为避免河水泛滥所修建的水坝。几百年前，人们就开始利用泥土堆积来阻挡河流的洪水，这些泥土堆积的形状多种多样，有的呈长条状，有的沿着河流、湖泊或者海洋绵延数公里，这就是所谓的防波堤。本文主要重点以温岭中心渔港若山港区工程为例子，通过当地基本条件以及水文进行分析，来进行防波堤的设计，进行了斜波堤的整体稳定性验算，以及地基沉降计算。

关键词：水文要素；结构设计；防波堤

A breakwater refers to a dam built to prevent river flooding. Hundreds of years ago, people began to use soil deposits to block floods in rivers. These soil deposits come in various shapes, some in long strips, and some extend for several kilometers along rivers, lakes, or oceans, known as breakwaters. This study mainly focuses on the Ruoshan Port area project of Wenling Central Fishing Port as an example. Through the analysis of local basic conditions and hydrology, the design of the breakwater is carried out, and the overall stability of the inclined wave breakwater is checked, as well as the calculation of foundation settlement.

keyword: hydrographic characteristics; structural design; groyne