

论文题目：江西信宏办公楼建筑结构设计

摘 要

该毕业设计为江西信宏办公大楼建筑结构设计，该建筑占地约4400m²，采用了现浇混凝土框架结构。该办公大楼的主体结构有六层，设计使用年限为50年，该工程的其他信息在工程概况中均有提及。

在此次毕业设计过程中，可以将设计阶段分为建筑设计阶段和结构设计阶段。主要可概括为进行了荷载计算、内力计算、内力组合、截面计算、基础设计等方面工作。在完成了结构平面布置后，要选取一榀框架来进行计算，本文中采取了②轴上的一榀框架。在办公楼结构计算的阶段，考虑了恒荷载作用、活荷载作用、水平荷载的作用等影响。在对框架进行内力计算时，采用了弯矩二次分配法和D值法等方法进行计算。将各种荷载计算完成后，再对它们进行内力组合，在其中选取出最不利荷载。通过计算出的荷载与内力，对梁、柱、板、楼梯进行截面设计与钢筋配置。在本次设计中，板均采用双向板进行设计。最后，进行了基础的选型与设计，并进行了验算。

关键词：框架结构；D值法；弯矩二次分配法；结构设计；办公楼

ABSTRACT

The graduation design is the structural design of Jiangxi Xinhong office building, the structural form is reinforced concrete frame structure. The main structure of the building is six stories. The total area of the building is about 4400 square meters and the building covers an area of 720 square meters. The main structure is designed for a 50-year service life, with a seismic intensity of 7 degrees, a basic wind pressure of 0.40 kN/m² and a basic snow pressure of 0.35 kN/m², and a fire rating of Class II.

The design includes two parts of architectural design and structural design, including load, internal force, combination of internal force, cross-sectional calculation, basic design and other aspects. After determining the calculation sketch, one joist frame was selected for calculation. The frame is a typical rod system, and there are many methods of approximation calculation. In the structural calculation section, a joist frame of the structure is selected for the structural internal force calculation, which takes into account the effects of constant load, live load and wind load, etc. The D-value method and secondary distribution of bending moment method are used in the calculation process. After completing various internal force calculations, the internal forces under different loads were combined and the most unfavorable load combinations were selected to calculate the configuration of the beam and column reinforcement. The plate takes a two-way plate design scheme, which is a bit complicated when calculating the reinforcement. In addition, the design of stairs in the structural scheme was carried out, and the calculation of the internal forces and reinforcement of the platform slab, step slab, platform beam and other components and construction drawings were completed..

Key words: frame structure; D-value method; bending moment quadratic distribution method; structural design; office building

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