Research on Heating Ventilation and Air Conditioning Engineering Technology

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Abstract. People optimize the engineering technology of heating, ventilation and air conditioning scientifically and reasonably in order to improve the ability to cope with the change of temperature, which can create a better living atmosphere for the residents. With the continuous development of modern society, people have very high expectations on various convenient technologies. People have been constantly thinking of how to optimize the engineering technology of heating, ventilation and air conditioning scientifically and reasonably. Therefore, in the early stage of technical design, people's needs should be taken as the base point to optimize various technical parameters to better improve the quality of subsequent heating, ventilation and air conditioning engineering construction and provide guarantee for improving people's quality of life. This paper mainly discusses the optimization strategy of key technologies of heating, ventilation and air conditioning engineering to provide reference for the following optimization of heating, ventilation and air conditioning engineering technology.

Keywords: Heating Ventilation, Air Conditioning Engineering, Technology, Thinking

1. Introduction
In recent years, with the increasing number of construction projects, people's demand for heating, ventilation and air conditioning is also increasing and the technical requirements are more stringent. Therefore, in order to meet people's expectations, we need to optimize and perfect the original technology so that it can adjust the indoor temperature more appropriately to bring real comfortable experience to people. Heating ventilation and air conditioning engineering is the product of the development of modern science and technology. However, due to the emergence of new technology, many engineering construction personnel do not understand the construction process and technology thoroughly, so it will be difficult for people to control the construction quality comprehensively. Therefore, when carrying out the design and installation of heating, ventilation and air conditioning engineering, relevant staff need to have a detailed understanding and study of relevant technologies to master the key points of work to effectively improve its use quality in the later stage and thus improve people's satisfaction with the use of equipment.

2. Construction status of heating ventilation and air conditioning project
The engineering technology of heating ventilation and air conditioning is to adjust the indoor temperature by means of heating and ventilation. In addition, there is a serious lack of professional technical means in the construction of heating, ventilation and air conditioning projects. In order to reduce labor costs, some enterprises employ construction personnel with low construction skills or even someone without professional qualifications, which seriously reduces the overall construction quality, as shown in figure 1:

![Diagram showing deficiencies in project construction](image)

Figure 1. Deficiencies in project

Secondly, many companies ignore the importance of the construction project supervision. In the construction of heating, ventilation and air conditioning projects, the lack of the corresponding quality supervision link results in the illegal operation of the construction personnel, sometimes even leading to the occurrence of safety accidents, which has a negative impact on heating, ventilation and air conditioning engineering construction. In addition, managers lack the corresponding quality control consciousness while enterprises don’t establish a perfect quality review system, which leads to a large number of safety and quality risks in the heating, ventilation and air conditioning project construction and finally affects the construction quality of the whole project.

3. Key technology analysis on heating ventilation and air conditioning engineering construction

3.1. Prepare for construction

The construction of heating ventilation and air conditioning project is characterized by long construction period and high complexity. At the same time, before the construction and installation, the staff should check the safety of the relevant instruments and equipment and make a detailed analysis of the design drawings. At the same time, in order to improve the accuracy of the design drawings, companies can hire a professional designer to make construction plan of inspection and adjustment. Moreover, according to the design drawing, certain holes should be reserved in the construction position to clarify the pipeline direction of heating, ventilation and air conditioning project to facilitate the placement and planning of subsequent drainage and ventilation pipelines. In addition, we should also do a good job of the corresponding emergency treatment plan to deal with the emergency situation for the delay in the construction period.
3.2. Play the role of indoor temperature

In the process of heating, ventilation and air conditioning engineering construction, in order to better meet people's perception of temperature needs, we should test and record the indoor temperature value to make a good basis for construction. First of all, before the construction, the staff should understand the temperature demand of the residents and collect the temperature value comprehensively to ensure that the subsequent temperature adjustment is more humanized. Secondly, it is necessary to improve the flexibility of temperature setting and set different temperature values in different environments to improve the utilization efficiency of resources and realize the ecological benefits of low carbon and energy saving. When the ventilation volume of heating, ventilation and air conditioning is too large, the workers need to optimize the parameters according to the collected data to reduce energy consumption. Under normal circumstances, workers set up the new air gate to control the air volume to achieve the rapid adjustment of room temperature as well as the purpose of energy saving and emission reduction. Finally, when collecting temperature data, it is also necessary to judge its effectiveness so that it can play a better guiding role and optimize people's living space, as shown in figure 2 below:

![Figure 2. Key technology optimization strategy](image)

3.3. Avoid pipe crossing

In the construction of heating ventilation and air conditioning projects, many pipelines are often needed to meet the needs of ventilation and heat dissipation. Therefore, in this process, the installation position of the pipelines should be accurately marked to avoid the occurrence of pipeline crossing and get rid of the impact on the quality of the project. The construction personnel should carry on the full inspection to the pipeline and conduct the prompt correction to the existence unreasonable phenomenon in order to reduce the probability of accidents. Secondly, in the process of construction, enterprises should strengthen supervision and management and install pipelines in strict accordance with the marked lines on the design drawings to improve the construction quality and avoid the phenomenon of crossing pipelines. Moreover, due to the complexity of the construction process of heating, ventilation and air conditioning projects, once the construction personnel have problems in the operation sequence, it is prone to cause the wrong installation of pipeline lines, causing the phenomenon of pipeline crossing and affecting the economic benefits of the project construction. Pipeline crossing is one of the most frequent phenomena in heating, ventilation and air conditioning projects.
engineering. Therefore, in order to better prevent this kind of phenomenon, construction enterprises should strictly control the engineering quality and install pipelines according to the pipeline line marks on the design drawings to improve the accuracy of pipeline installation.

4. Conclusion
In a word, the most common problem in the whole process of heating, ventilation and air conditioning engineering is the installation of pipeline. Therefore, in the quality control link, the installation and construction technology should be optimized to achieve the key quality control. The heating, ventilation and air conditioning project can adjust the temperature to a greater extent to bring better experience for people's daily life. However, due to the complexity of heating ventilation and air conditioning engineering technology, it is of great possibility to have insufficient control of detail quality in the process of construction. Therefore, we need to conduct professional training for the construction personnel to enable them to master the key technical points and correctly deal with the details in the construction process. At the same time, we should also strengthen the quality supervision in order to timely identify problems and take effective measures to improve the quality of the project and promote the economic benefits of enterprises.

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