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A REVIEW PAPER ON VENTILATION SYSTEMS FOR A PARKING SPACE

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ABSTRACT

HVAC stands for Heating, Ventilation and Air conditioning is the technology of automotive and inside environmental comfort. HVAC system design is based on thermodynamics, heat transfer and fluid mechanics.

Ventilation is very important for everyone now a days and in our project. When cars move from parking area to outside and outside to parking space they release a toxic gases and fuels like carbon monoxide, this will result the diseases for the people who goes into the parking space. we studied more on how ventilation systems will work in parking areas, In parking spaces there is a problem facing due to circulation of air is not available, we choose to design a ventilation system for a parking space.

KEY WORDS: Carbon monoxide, Multilevel

INTRODUCTION

WHAT IS AN HVAC SYSTEM?

Firstly, HVAC stands for Heating, Ventilation and Air conditioning. Now a days as the population increases the comforts are also increasing day by day. The scientists suggest human body temperature should be more than 22 degree Celsius or less than 25 degree Celsius, otherwise the people will feel uncomfortable. The selection of HVAC systems for a given building will depend on the climate change, the age of the building and the designer of the building, the project budget, the architectural design of the building. These systems can be classified according to the distribution process and necessary process.

IMPORTANCE OF HVAC

HVAC is an main part of residential structures such as single-family homes, apartment buildings, hotels, and senior living facilities, medium to large industrial and office buildings such as skyscrapers and hospitals, onboard vessels, and in marine environments, where safe and healthy building conditions are regulated with respect to temperature and humidity, using fresh air from outdoors. Ventilating or ventilation is the process of exchanging or replacing air in any space to provide high indoor air quality which involves temperature control, oxygen replenishment, and removal of moisture, odours, smoke, heat, dust, airborne bacteria, carbon dioxide, and other gases.

HVAC SYSTEM SELECTION

The HVAC system is selected three main factors including the building configuration, the climate conditions, and the owner desire. The design engineer is responsible for considering various systems and recommending more than one system to meet the goal and satisfy the owner of a building. Some criteria can be considered such as climate change building capacity, spatial requirements, cost such as capital cost, operating cost, and maintenance cost, life cycle analysis, and reliability and flexibility. However, the selection of a system has some constraints that must be determined. These constraints include the available capacity according to standards, building configuration, available space, construction budget, the available utility source, heating and cooling building.

HVAC SYSTEM WORKING

Heating, ventilation and air conditioning is the key to ensuring that the pharmaceutical products manufactured by an industry of good quality. It ensures that there are all the necessary favourable conditions for successful manufacturing. A basic working HVAC system works as explained. First the system collects fresh air from outside the plant from where it is filtered using a filter. Here the cooling coil get rid of excessive humidity and takes it out through the drainage system. The filtered air goes through the supply duct and further filtration is done through the air handing unit. The air handling unit then supplies the filtered air to different rooms within the manufacturing plant. The air supplied to each room is determined by the temperature and humidity that is required in the room. In addition to the air handling unit air is additionally filtered through the high-efficiency particulate air system which guarantee up to 99.995% efficiency.

LITERATURE REVIEW

S.M. Gheji et.al in his paper entitled "Basic Classification of HVAC Systems for Selection Guide", concluded that air conditioning means providing out of air within the atmosphere to sustain the temperature, moisture, air excellence, air gesture and ventilation. Temperature is controlled either by cooling or heating the air. Moisture is controlled either by eliminating or addition of the moisture to air. Air eminence is preserved by purification which avoids admission of dust and particulate substance and provides clean air and ventilation is attained by supply of acceptable renewed outdoor air. Occasionally sound stages are too condensed by acoustic linings or sound attenuators[1].

K.Venkata Chary et.al in his paper entitled "Design of an Air Conditioning system for a Multi-storey Office building" concluded that the Air Conditioning systems are amongst the main fittings in residential, commercial and industry buildings. The persistence of the system comprises relaxed environment in terms of temperature, moisture, airflow, indoor air quality, purification, noise stages and other environmental for the occupants, equipment as well as to save energy. The Development consists of how the wished-for centralizes air conditioning is designed and its criterion for a new-buildings in Hyderabad. It contains of eight floors and two basements taking an area of 30000 sqft per floor. The foremost objective is to produce a thermally measured environment within the space of a building envelope such as office space, BMS room, Hub rooms, entrance lobby etc. The hesitant air conditioning load for the system shall be 1400 TR approx. Air-cooled screw Chillers with secondary variable pumping system are used to make the system energy efficient. The anticipated air conditioning plant shall be situated on the buildings. **[2]**

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CONCLUSION

1. The underground parking space with a large structural span and a public function of the upper building is suitable for early renewal while the cases with a small structural span and low storey height and the upper building for civil use are mainly appropriate for long-term development.

2. The suitable replacement function of most cases is for the exhibition space function, and some cases are suitable for sports venues and training schools; the cases suitable for laboratories are mainly in the short and medium terms.

3. For most underground parking spaces, the main contradiction of sustainable design lies in the lighting and ventilation of underground spaces. The use of recessed squares, lighting, and ventilation shafts can effectively solve design contradictions.