

Intelligent Building System With Indoor Temperature Control By Use of ANN

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Abstract- In this paper Intelligent building concept is an implementation of technology developed in the throughout the world. Artificial Neural Network (ANN) based predictive and useful thermal control strategies for buildings designed to advance thermal comfort. For residential buildings, we developed a thermal control concept with Artificial Neural Network (ANN) toolbox in MATLAB Software. After the study we analysis e to be found that application of ANNs in thermal control of residential building has beneficial to developing an indoor temperature control method that can provide comfortable thermal condition by integrating heating system control and the opening condition of building envelopes.

Keywords- Building ,MATLAB Software

I. INTRODUCTION

The Intelligent Building System is one which provides cost effective and productive environment through optimization of its four basic elements, i.e. structure, systems, services and management and inter-relationships between them. IB is designed and managed to meet the changing environmental, business and human needs. IBS around the world are trying to ensure a building that is suitable for it's occupant to work and live safely, comfortably and efficiently.

The application of thermal control systems to residential buildings has been very simple. The thermostat has been the principal control system because, at least prima facie, home owners did not see sophisticated control systems as economical. However, such perceptions have changed. Increasing awareness of quality of life, homeowners are to want thermal conditions in their homes good/helpful to improved comfort and health. In addition, as energy costs increase significantly, home energy efficiency acquires economic important .Hence, In a new residential buildings demand for advanced climatic control strategies providing comfort, health and energy efficiency.

The Intelligent Building concept aims to use smart technology to reduce energy consumption as well as to improve comfort and users satisfaction. It is based on the use

of smart sensors and software to follow both outdoor and indoor condition for the control of comfort and security devices for the optimization of energy consumption. Intelligent building transcend integration to achieve interaction, in which various independent systems work collectively to optimize the building performance and constantly create an environment that is most conducive to the occupant's goals. Additionally, fully interoperable systems in intelligent buildings tend to better performance and communication system. The task that can be efficiently managed by an intelligent building include: power, security, fire alarm, solar power and lighting

1.1 AIM OF PROJECT

Use various technologies and sensor for making smart building which create more comfort for user with lower cost and also determine thermal load and heat load create in building by using Artificial neural networks.(ANN)

II. METHODOLOGY

Following Methodology is adopted for this Work

- Literature review
- Use sensor for intelligent building
- Provide solar roof titles
- Use of MATLAB for heat load calculation.
- Provide rainwater system for building

III. LITRETURE REVIEW

John pockett and martin Belusko (2010): In this papers authors deals with explain how many heat reflective paints function and reviews some of the advertising material and claims in an area hardly covered in the relevant scientific literature. It can concluded that the most cost effective solution for coating roofs of house against the heat from sunlight is to paint the roof with a high build gloss Vivid white paint. Inmany cases, this is not

practical because of the glare. The next best option is to start with as light as possible a colour and then to use one or another type of heat reflective paint with high reflectance in the infra-red to minimize the surface temperature increases.

Ravi Kishore Kodali, vishal jain, Suvadeep Bose and Lakshmi Boppana (2016):

in this paper author shows the provision for sending alert messages to also built into system. On the other hand if the owner identifies that the person entering his house is not an intruder but unexpected guest of his then instead of triggering alarm, the user can make arrangement from his door step such that he enters his house he can make himself at full comfort without manually having to switch on electrical application.

Nivine Attoue, Isam Shahrour: The author concluded that operative temperature could be well estimated by the ANN approach using the indoor temperature, electrical power, outdoor temperature time of day, wall temperature, and ventilation flow rate. To improve comfort condition and user satisfaction use smart technology to reduce energy consumption. The result of this work consist of the methodology proposed for the development of a simplified model for indoor temperature forecasting. This methodology is based on the selection of input parameters such as solar radiation, outdoor temperature history, outdoor humidity.

IV. SCOPE OF THE PROJECT WORK

- Increased energy efficiency can save a sustainable amount of costs by effectively controlling equipment use. In addition, it is far easier to monitor aspects of the system for potential problems or provide preventative maintenance.
- Building management can provide better services to occupant and users. Accessing building systems via remote makes it easier for facilities professionals to assess realtime condition, detect problem and monitor building performance off- site. Data accuracy and report generation. More accurate data monitoring and control of energy.
- Monitoring and control of energy use for the purpose of reducing consumption defines a green building. While it may be possible to have a green building. While it may be possible to have a green building that isn't smart, most green buildings will have some form of a building automation system (SBAS)

V. RESULTS AND DISCUSSIONS

- Intelligent building solve the several problems in building security and safety. This building design is well insulated and make use natural light increasing the amount of thermal insulation is main component of preventing energy loss.
- The fire risk analysis method to check of any safety deficiencies in residential building and to protect that use of modern technology to provide building protection to minimize fire risk.
- IB use smart lighting luminaries that are manufactured with embedded sensor. These sensors are used to reduce the cost of electricity and its helps to energy consumption. The building should have advanced automatic control system to monitor facilities, including air-conditioning, temperature, lighting, Security, fire etc. to provide comfortable working environment.

VI. CONCLUSION

- In this work study is done on advanced technology like thermal control strategies for building is applied for the calculate thermal load for that building for completion of this work we use MATLAB software for determining thermal load.
- After this work its observe that this method is very beneficial for building indoor comfort.
- This is the one of the conventional method which can be provide comfort zone for user and give a best result. The purposed thermal control strategy of thermal load calculation has substantial potential for thermal comfort and also significant energy efficiency provide for building

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