

# SICK BUILDING SYNDROMES: A CASE STUDY OF ADMINISTRATION BUILDING OF MEHRAN UNIVERSITY, JAMSHORO

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**Abstract:** The Term “Sick Building Syndromes SBS” is used to describe situations in which building occupants experience acute health and comfort effects that appear to be linked to time spent in a building, so Indoor Air Quality (IAQ) has a huge impact on the building as well as to its users. So, in this regard a research namely; “Sick building Syndromes: A Case Study of administration building of Mehran UET Jamshoro Sindh Pakistan” is carried out by me to give awareness to the employees and let them know about the environment in which they are working. The research paper relied upon the data collected through questionnaire based on the responses of respondent of the administration building. According to WHO (World Health Organization), health is not only the disease to be absent or not being sick; but also totally being well physically, psychologically and socially. Referring to this description, the effects of the environment and also the effects of the building, as an artificial environment, on the conservation and the continuity of this well-being status are subjects to researches and discussions while trying to find the solutions, this is because Indoor Air Quality (IAQ) is in very compromised situation and that is the main cause the people working inside office are being affected in Health as well as lack in efficiency, also no productivity in working condition be achieved. Furthermore, while conducting case study and questionnaire from administration building employees, I realized that there was number of issues regarding Indoor Air Quality that need to be highlighted. However, issues like sudden change in inside temperature increases and reflection of light in the form of Glare, Humidity, lack in environment quality, no proper air movement or crossing through windows, Highest amount of dust, noisy and loudness in the environment and work load, creates health problems as well, these kind of disturbances creates lack of interest in working and mostly depending on non-renewable resources building as well as employee’s health and comfort is in danger, therefore start increasing ventilation rates, removing pollutant sources, cleaning the air and the amount of flow of Air should be in highly considerations to create a best Indoor Environment that increases the efficiency and the interests of employees to work well during office hours.

**Keywords:** Administration Building, Sick Building Syndromes (SBS), Indoor Air Quality (IAQ), Awareness to Employees, Health, Working Efficiency.

## 1. Introduction

Sick Building Syndromes (SBS) is a state of building and structural sickness that has an influence on its inhabitants; people get unwell or their productivity drops as office employees or people find themselves sick and inefficient while working in office buildings. Furthermore, employees spending long hours in diverse buildings, particularly in university administration, are sensitive to Sick

A syndrome is a grouping of signs and symptoms that indicate a health problem. A structure is a built enclosure that includes walls, a roof, doors and windows. A structure is

Building Syndromes (SBS). The major defining circumstance is to know about the people working efficiency in which there is a large proportion of objections regarding the Sick Building Syndromes SBS, because of that the employees are suffering the challenges like headaches, eye strain, Stress, Anxiety etc. Sick Building Syndromes (SBS) can also be utilized in conjunction with "building related symptoms," which confirms the user's condition while working in that environment.

built to keep people and/or objects safe from the elements. Many people work in buildings or live in them. A sick person is a sick individual. Buildings are unable to Withstand the

elements have serious health problems, yet the enclosed indoor atmosphere can cause several diseases and reduces work efficiencies.

## 2. Problem Statement

Jamshoro is Famous for its Identical wind Direction and continuous Air flow along with Potential light and Sun. However, it is observed that most of the office buildings are having Sick Building Syndromes (SBS), affects due to continuous closing of windows and having blinds in those.

Today the majority of the people spend most of their time working in indoor environments. Occupational health includes studies to maintain and improve well-being of people working in all kinds of professions in terms of physical, mental and social aspects. It is possible to talk about mainly two groups of factors determining the health status of a working individual. These are avoidable environmental factors found in workplace environment and personal characteristics of an individual.

Therefore, the office environment has a great impact on the efficiency of the worker and economy of the university, thus office shall be more human friendly to help out in workability of the employee. Mehran University has large number of office workers working in various offices, therefore they need a cozy, calm and an economical working environment. In order to meet standards, Mehran office environment need a huge swing in its working environment.

### 2.1 Objectives

For achieving the aim of the following objectives is in main consideration:

- Identifying the Sick Building Syndromes in MUET administration building.
- To explore the causes of Sick Building Syndromes in administration Building.

## 3. Methodology

This chapter aims to provide the materials and methods used for the collection of data and analyzing the data to provide overall image of the research. The methodology adopted will be fulfilled to achieve research objectives. As this research is a case study, the methodology applied was more on gathering information through surveys, questioner, interviews and physical visits, Case study of Administration Building.

### There were mainly three types of methods being used for collecting primary data:

- Collecting primary data through questioner's surveys.
- Collecting primary data through site visits.

- Collecting primary data through interviews conducted from employees of the administration building.

Case Studies were carried out for collecting secondary Data.

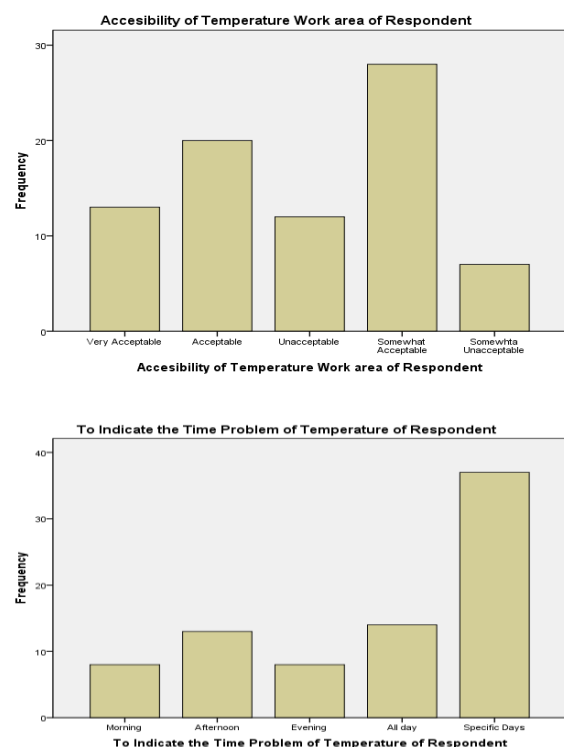
### 3.1 Data Analysis

Data collected through questionnaire and then examine by using SPSS software. To analysis the Sick Building Syndromes (SBS) for existing conditions of working environment, the analysis of Indoor Air Quality (IAQ) and its impacts on building's interior as well as on working officials, in this regard research is carried out by me on the topic namely: Sick Building Syndromes (SBS): A case study of administration building of MUET, Jamshoro, and Sindh, Pakistan. The questionnaires arrange in series and data was put in the SPS software to data analyses. It was categorized according to the research question and accurate result of the research was drawn accordingly. For analyzing the data, descriptive statics and correlation method used to summarize the photographs. The data is definite, the frequencies or correlation procedure was used and data is on its scale levels review or description descriptive method used.

## 4. Survey Analysis and Results

Acceptability of Sick Building Syndromes Factors in a form of questionnaire, asked from the employees working in the administration building:

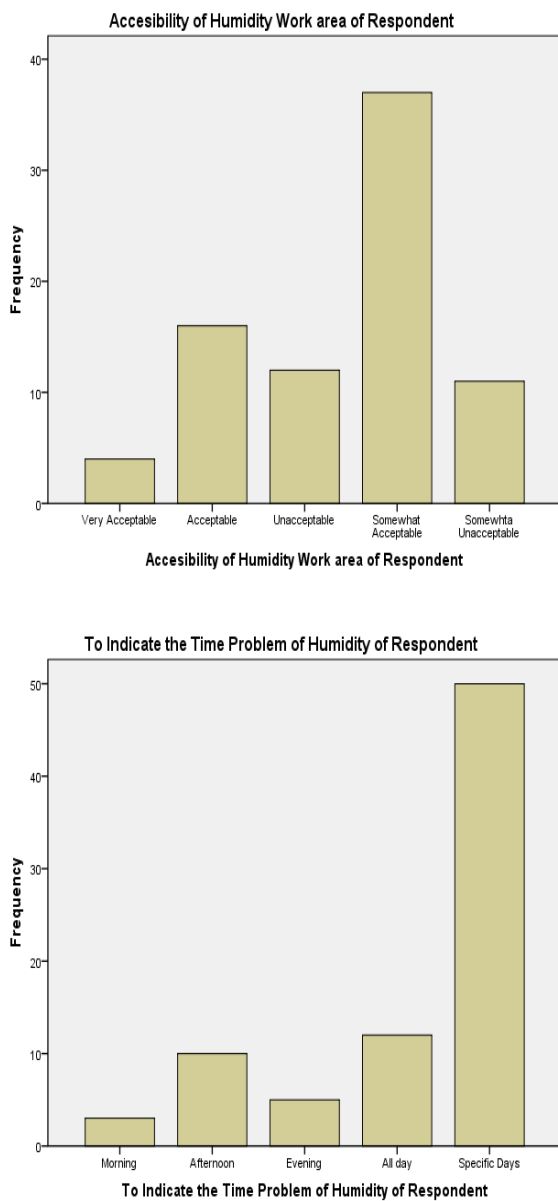
### 1. Temperature



**Figure.1:** Shows the temperature percentage acceptability with respect to Tim

Figure No.1 illustrate the participation of different age groups while conducting a questionnaire from the officials of the administration building regarding temperature issues. Furthermore, in which they have not 100% satisfaction regarding temperature, most of the people said the temperature was satisfied for specific days, it means other days and different time span they have to compromise on the condition, that's why there working efficiency reduced and there health get affected. 41% were little bit satisfied from the environment and the other majority of the employees 59% seemed compromising in nature with respect to temperature with respect to Day time.

**2. Humidity**

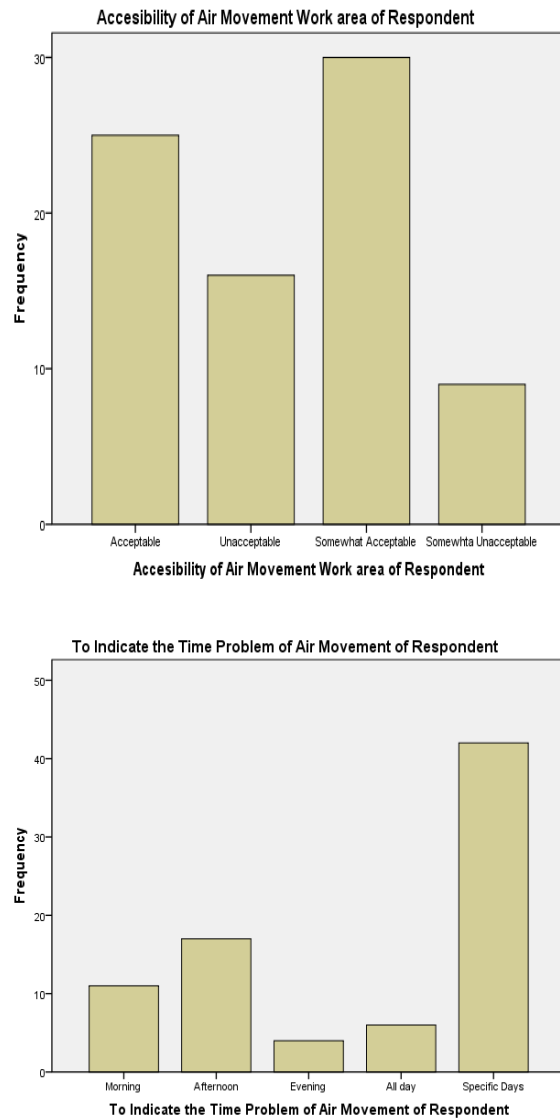


**Figure.2:** Shows the Humidity percentage acceptability with respect to Time

Figure No.2 illustrates on the problems regarding Humidity issues with respect to time spend on the office hours. Furthermore, in which 20% were little bit satisfied from the

environment with respect to humidity and the other 20% employees were totally not satisfied with the environment and remaining 60% were in middle sometimes acceptable as well as unacceptable with respect to Humidity.

**3. Air Movement**



**Figure.3:** Shows the Air Movement percentage acceptability with respect to Time

Figure No.3 shows the participation of different age groups while conducting a questionnaire from the officials of the administration building regarding Air crossing, Air flow and Air movement issues. Furthermore, 30% of the people said the Air movement was acceptable mostly for specific days, it means other days and different time span they have to compromise on the condition, 30% was unacceptable because no proper cross ventilation, that's why there working efficiency reduced and there health get affected. 40% were in middle that's why they said that condition was sometimes acceptable and sometimes unacceptable.

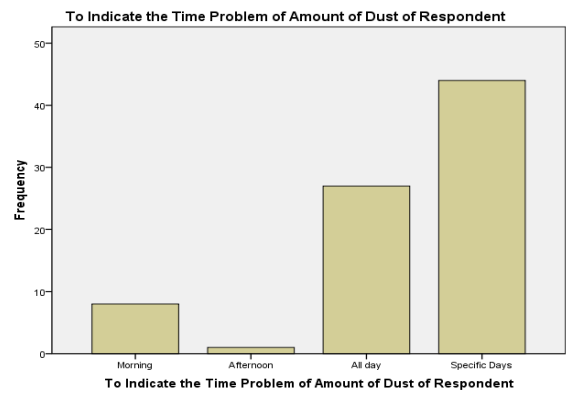
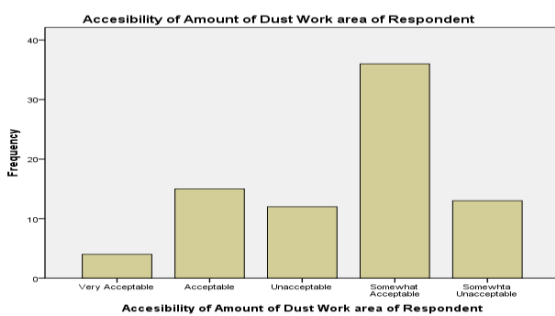
**4. Odor Issues**



**Figure.4:** Shows the Odor percentage acceptability with respect to Time

Figure No.4 illustrates issues regarding odor problems. Furthermore, in which 25% of the people said the Odor was acceptable mostly for specific days, it means other days and different time span they have to compromise on the condition with respect to odor, 35% was unacceptable because no proper cross ventilation, that’s why there working efficiency reduced and there health get affected. Remaining 40% were in middle that’s why they said that condition was sometimes acceptable and sometimes unacceptable.

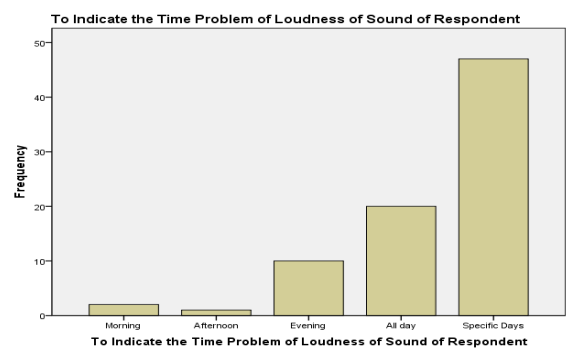
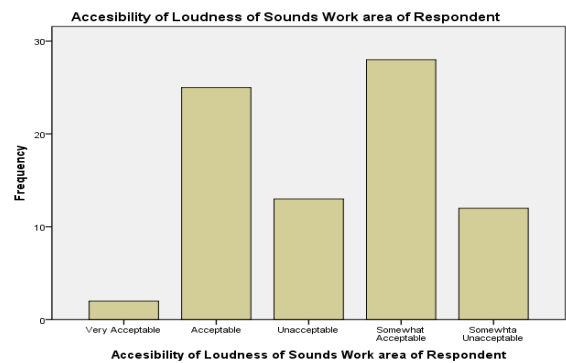
**5. Amount of Dust**



**Figure.5:** Shows the Amount of Dust percentage acceptability with respect to Time

Figure No.5 illustrates on the problems regarding Amount of Dust issues. Furthermore, in which 25% of the people said the Amount of Dust was acceptable mostly for specific days, it means other days and different time span they have to compromise on the condition with respect to Amount of Dust, 35% was unacceptable because no proper cross ventilation and no proper management of files, that’s why there working efficiency reduced and there health get affected. Remaining 40% were in middle that’s why they said that condition was sometimes acceptable and sometimes unacceptable.

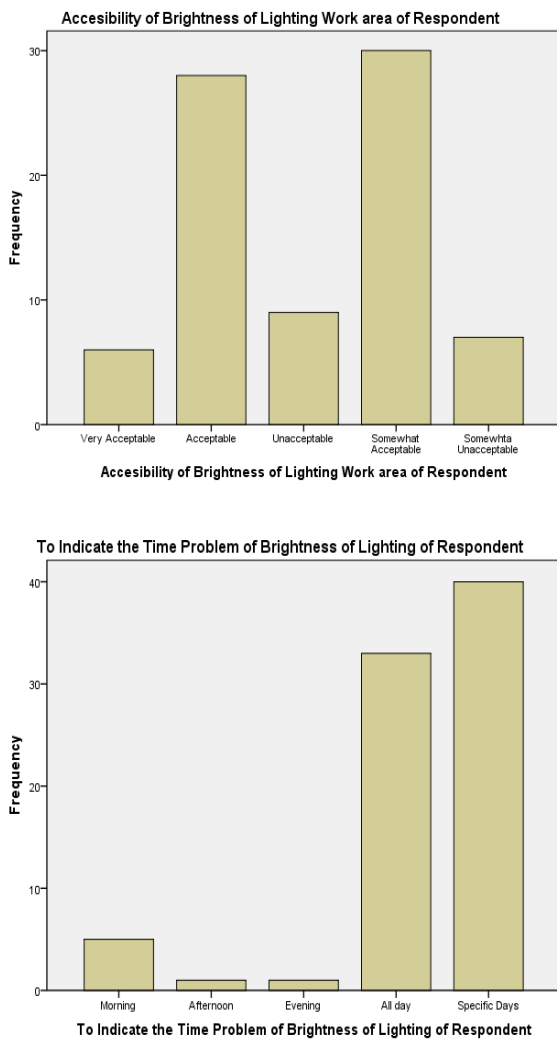
**6. Noise Issue**



**Figure.6:** Shows the Loudness of Sound percentage acceptability with respect to Time

Figure No.6 shows Loudness of sound issues. Furthermore, in which 25% of the people said the loudness of sound was acceptable mostly for specific days, it means other days and different time span they have to compromise on the condition with respect to loudness of sound, 35% was unacceptable because of the building is near to highway and traffic flow is very high, that's why there working efficiency reduced and there health get affected. Remaining 40% were in middle that's why they said that condition was sometimes acceptable and sometimes unacceptable.

**7. Lighting Issue**

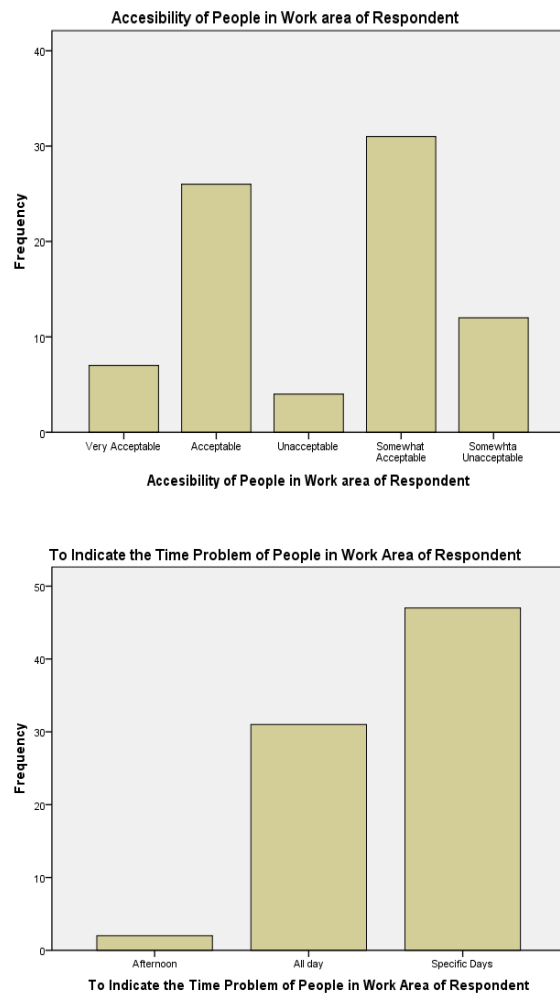


**Figure.7: Shows Brightness of Light percentage acceptability with respect to Time**

Figure No.7 illustrates on lighting problems faced by the employees working in the administration Building regarding Glare or no proper lighting issues. Furthermore, in the concluded data 45% of the people said the brightness of lighting was acceptable mostly for specific days, 20% was unacceptable because of no option on opening of windows and electric lighting is mostly used, that's why there working efficiency reduced and there health get affected. Remaining

35% were in middle that's why they said that condition was sometimes acceptable and sometimes unacceptable.

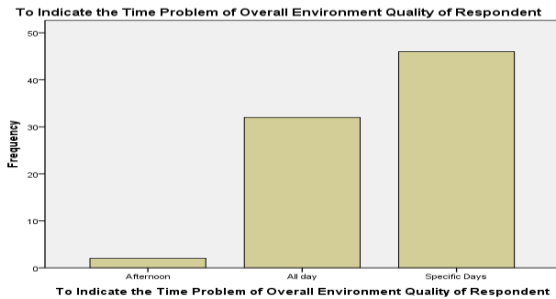
**8. People in Work Area**



**Figure.8: Shows People in Work Area percentage of acceptability/unacceptability with respect to Time**

Figure No.8 illustrates the mutual contribution of employees while facing the issues either they cooperate to each other or no longer interested to cooperate with other colleagues while facing different issues in the working environment. Furthermore, in which 41% of the people said the People in Work Area was acceptable mostly for specific days, 20% was unacceptable for sometimes and remaining 39% were in middle that's why they said that condition was sometimes acceptable and sometimes unacceptable.

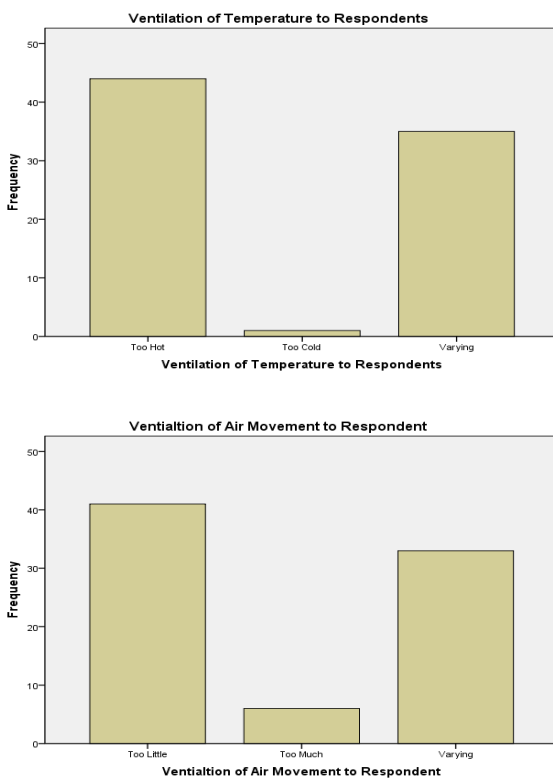
**9. Overall Environment Quality**



**Figure.9:** Shows Overall Environment Quality percentage of acceptability/unacceptability with respect to Time

Figure No.9 illustrates on the Overall Environment Quality and their issues which are being faced by the office employees while working inside office building. Furthermore, in which 40% of the people said the Overall Environment Quality was acceptable mostly for specific days, 20% was unacceptable because of number of harshness of the environment and work load to other colleagues, due to this working efficiency reduced and there health get affected. Remaining 40% were in middle that's why they said that condition was sometimes acceptable and sometimes unacceptable.

## 10. Ventilation



**Figure.10:** Shows variability of Ventilation with respect to Air Movement and Temperature

Figure No.10 illustrates the participation of different age groups while conducting a questionnaire from the officials of the administration building regarding variability of Air Movement with respect to ventilation. Furthermore, in which 51.3% of the people said the Air movement was too little mostly for specific days, 7.5% said too much of air pressure to sometimes creates issues, that's why there working efficiency reduced and there health get affected and 41.3% were saying the air movement was varying sometimes slow and sometimes fast, like imbalance in the air creates health and work problems, no proper focus can be given to work, hence efficiency is being compromised.

## 5. Conclusion

We are confronted with indoor air contamination and its effects on human health as a problem threatening public health more and more. Though the sick building syndrome does not threaten life, it is uncomfortable. It causes loss of labor force and efficiency and may cause serious health concerns. In the whole world, the importance attached to the indoor air quality is increasing day by day. Indoor air quality has gradually become the basic criterion for healthy comfort and standards have been developed regarding this issue.

Therefore, Indoor air problems in the workplaces are among the issues that should be considered frequently by occupational health specialists when evaluating the health risks in a work environment. A good quality of indoor air has an important effect on the health of the employees and on ensuring positive social atmosphere in the workplace and an increase in production in the offices.

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