

After a cultural center has been developed and built, lowering monthly energy expenditures is challenging. When it comes to energy efficiency, it's critical to consider where air comes from and where it's needed in the structure.

Moisture saturation or retention can occur as a result of incorrect sealing and insulating material usage or installation, creating a major health concern.

Energy cost, availability, long-term affordability, comfort, efficiency, health, and safety are all considerations to consider when it comes to energy efficiency in a cultural center.

4.2.1 Ways of achieving energy efficiency in the building

White roof surface

1. The white roof surface reflects the sun's heat, keeping the roof much cooler than a traditional roof.
2. Light or white roof tops help to reduce the amount of heat absorbed through the exposed roof surface from solar radiation.

Ridge vents

1. Ridge vents are crucial for roofs because they assist to reduce the temperature in the roof structure and, as a result, in the attic and the living area below.
2. Ridge vents aid in air circulation and help to minimize moisture problems.

Insulation

Insulation creates a barrier between the inside and the outside world. It can aid in the comfort of the inhabitants.

4.3 Efficient use of space

The sustainable architect understands the importance of indoor environmental quality in influencing how people feel in a room and concentrates on elements such as healthy internal spaces with proper ventilation, temperature regulation, and the use of non-toxic materials. Earth shelters, roof gardens (green roofs), and abundant vegetation are also urged to be used throughout

and around structures. In the United Kingdom, a study of five new academic buildings and campuses by CABE (Commission for Architecture and the Built Environment, now Design Council Caba) found that more than 70% of staff and students thought the facilities and functions of the buildings they work in improved how they felt and behaved.

5. Conclusion and Recommendations

The adoption of sustainability architecture principles and basics, as well as resorting to sustainable building trends, is considered the most successful way to get rid of the increasing energy problems, as well as the problem of depletion. These principles also sustain on achieving comfort for building users by guaranteeing thermal comfort, natural ventilation, and natural lighting. Not only that, but it can save and will provide the building with its energy needs by fully utilizing natural energies such as: (solar energy, wind energy, and water energy), which helps to reduce energy consumption and also helps to benefit from rain water, gray water, and wastes of buildings rather than leaving it to pollute the environment.

The fundamentals of eco-friendly architecture demand reprocessing for all of these elements and using it to maintain a clean surrounding and fully benefit from new and renewable energies by studying global and local buildings that use green architecture and have obtained certificates for energy consumption rationalization such as LEED. The required goals have been extracted via the use of green natural ways and contemporary procedures that are unamortized of energy in order to achieve a commercial building that is also environmentally friendly.

Contemporary difficulties, such as the advancement of technology, lifestyle, a lack of time to spend in nature, and worldwide trends, have resulted in a new way of life. Because sustainable development is a global issue, it cannot be addressed just locally. Furthermore, national and global activities are irreplaceable and critical. The present condition of environmental and urban planning necessitates certain duties and efforts, particularly when this status is closely related to quality of life and public health. As a result, we favor natural ventilation in an urban layout where those natural procedures are preferable and may be applied, according to the conceptual findings of this study.

Furthermore, in order to implement a sustainable plan, it may be necessary to examine the use of passive cooling and ventilation, which give shade and humidity to dwelling units. According to the conceptual conclusions, human comfort can be more successful than it is now under typical yearly climate circumstances with adequate implementation of passive bioclimatic principles.

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