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In this paper thermal comfort is explained using the first law of thermodynamics, and a relationship between exergy consumption of the human body and humidity levels of the built environment is established using 2nd law analysis. Fulfilling these objectives gives for an easier understanding of thermal comfort, and provides greater insight into the environment's effect on thermal sensation. From first law of thermodynamics comes the concept of energy conservation, which is then used to develop man's energy balance equation, and further Fanger's comfort equation, and its corresponding PMV index. Both of which are used to assess, and design the comfort level associated for a given environment. Now, while the comfort equation allows one to measure the amount of energy entering and leaving the human body it fails to define the quality of such energy. However, introduction of the second law allows one to define such quality through the useful concept of entropy, and exergy. By developing an exergy balance equation and expressing it as a function of humidity of ambient air one can determine the effects humidity has on thermal sensation, and provide insight into a better solution to future built environments.