

## PASSIVE SOLAR DESIGN FOR BUILDING

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# ABSTRACT

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In this report, the body consisted of the introduction of the passive solar design for a building which explains the basic concept of the passive solar design, what is the different between the active and passive design. Besides that, explain all the principle of the designs which is the orientation, window, shading, insulation and the thermal mass, how to apply the principles in the design and how the principle works on the passive-designed building. Each and every principle play different role in heating and cooling the living space. For cooling the living space during summer, there are some principle needed like the proper orientation, shading, window's ventilation and insulation. For the heating during winter, a proper orientation also needed and the south facing glass, thermal mass and the insulation materials needed to collect, store and prevent heat losses of the building. For heating system, there are three approaches to gain the solar heat which are the direct gain, indirect gain and the isolated gain. The passive design and gain system also explains with the rules of thumb. After that, study of the advantage and disadvantage of the passive-designed buildings. Finally, conclude the study with carry out some study on the principles and the approaches that may applicable on the buildings in Malaysia mainly for cooling the building since Malaysia is summer hot all around the year.