

Overview of cost-saving solutions for house

[Life](#), [Home](#)



Monocrystalline panels

Monocrystalline panels have the highest marketed energy efficiency around 15%-21%, meaning they convert 15%-21% of the absorbed solar energy into useable electricity. Designed to absorb sunlight, the solar panels create a DC (Direct Current) flow of energy from the sun's rays. The DC electricity then converts to useable AC (Alternate Current) electricity. Electricity from solar panels is fed back to the house to run appliances, heating and hot water production and excess electricity is stored in a solar battery. Thus, solar panels keep the electricity bills to a minimum.

Triple Glazing Windows

Windows are generally considered an energy drain, because heat travels straight through a single pane of glass. Triple glazing, however, is made of three panes of glass each having an air gap between, stopping the heat flow, reflecting it back inside in winter, and back outside in summer. Effective for cold and hot climates, triple glazing has the highest thermal performance, best noise reduction, security, comfortable interior, weather resistance, condensation free, energy efficiency and safety components when compared to a standard single glazing. It is also almost twice as insulative as double glazing. The inside pane of a triple-glazed unit is much closer to room temperature than either a double-glazed or single-glazed unit. This helps to prevent 'cold spots', making the room feel warmer and more comfortable. Triple glazing reduces the likelihood that condensation forming on the inside surface of the glass. This helps prevent mold growth and other building damage due to moisture. For instance, whilst replacing single-glazing with

triple-glazing reduces solar heat gains by around 50%, it will also reduce heat losses through the window by a massive 85%. This gives an overall improvement in energy performance when compared to single or double glazing. Triple glazing is also great for ventilation as it sucks the moist air out of rooms such as the kitchen and blowing fresh, cool air into the rooms. Hence, triple glazing will save overall cost as there will be no need of heaters, air conditioners and more. Built of Concrete The house is designed to be built of insulated concrete to retain heat, maintaining an even temperature year-round the house. It will only lose one degree of heat per day when the heating is off. Thus, this will make a significant impact of overall cost overtime.

Reflective Paint

Applying reflective coating to the roof can decrease the amount of heat coming into the home, making the house cool. It will also keep the roof lasting longer as it prevents expansion and contraction of the roof. Therefore, applying reflective paint onto the rood will save money on electricity bills and repairment of the roof. Height of the Rooms The ground floor rooms are extremely tall, so warm air will rise to the top, giving warmth to the first floor because it is less dense. This pushes cool air down the ground floor. The air will later diffuse evenly through temperature, resulting to a cozy house. Hence, the height of the rooms do have an impact as it will save money on energy and cost.

Geothermal Heat Pump

Geothermal heat pump (GHP) heats and cools the house by concentrating the naturally existing heat within the earth. The GHP exchanges heat with the earth placed underground near the house. Although the installation price of a GHP greatly exceeds that of any other systems, this cost is returned to you in energy savings. System life of a GHP is estimated at 25 years. PART C

The house is extremely energy efficient as through its representation, it is designed with the goal of illustrating a two storey house that is energy efficient for a particular family. The house uses several efficient features such as solar panels, reflective paint, whole house insulation, triple glazed windows, a geothermal heat pump, house built of concrete, ground floor rooms are tall, insulation around windows and LED lights. These features benefit the economy and environment through conserving and restoring natural resources, improving greenhouse gas emissions, water quality, reducing wastes and more. For instance, an LED light, it is considered energy efficient as it uses less electrical energy to produce the same amount of light. Thus, this reduces carbon emissions.