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Survey Based Building Design Renewable Energy Affected By Passive Solar Systems

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Abstract

Today, an increasingly large proportion of the world's population live in cities, The survival of people in the cities where they live Wide circulation of natural resources, including energy dependent. In most cases the energy used in cities to be supplied by fossil fuels With increasing energy consumption and increasing loss reserves of non-renewable energy and Also the problems caused by reckless use of fossil fuels, The necessity of using new sources of natural energy is felt more than ever before, One of the sources of our country due to the different systems of solar energy is the sun rise. Sun can be considered one of the greatest sources of energy that can be converted into other forms of energy of energy. This article is based on descriptive and analytical methodology and To explain the methods of using solar energy: - Active systems - inactive systems - complex systems and In addition, it describes the main types of inactive solar systems and introduce a variety of systems and how they have been studied due to the climatic conditions of designers and engineers, environmental, economic and ... clean energy are the right way for the first time the design phase of use.

Keywords: energy efficiency, renewable energy, solar energy, inactive systems.

Introduction

Current society's energy is driven development and given the importance of economic growth and development, addressing the issue of energy is inevitable. Sustainable energy, Sustainable and economic, economic growth is a prerequisite for any development. After the Industrial Revolution, energy gradually into one of the main factors of national production and the industrialized countries and then, other developing countries has become. (Gharavolbashi, Saharkhiz, Karami) The current civilization is partly dependent energy economy nowadays even a moment to imagine life without energy is not possible. Disorder or stop delivery of the economic machine will be disabled and even can be said that a society stops (Naghizadeh rokni et al 2016). Therefore, all countries seek in every possible way the ongoing energy and have stability. So due to the finite Abnormal resources necessary Much more serious than in the past to consider the use of renewable natural energy in this regard, the most unique solar renewable energy source in the world and is the main source of all energy on Earth. Iran with about 330 days of sunshine per year, one of the best countries in the world on the capability of the exploitation of solar energy in the world. since the heating and cooling needs by solar energy is one of the objectives of stability an important step towards solar building design in order to protect the environment and the accumulation of fossil fuels for future generations and the dependence on fossil fuels that we are. Now research question it is proposed that the optimal use of solar energy in building what methods, Materials and functional elements can be used? methods of using solar energy is of three types: Active systems, inactive systems, complex systems here are the criteria for action and introduce a variety of systems for solar systems And how they are for optimum use of solar energy can be facilities and building elements used. given the potential of designers and engineers design such as: Use a sunny window, wall Trump, greenhouse, and double glass and same in the main area on the southern side and in addition, the effect of color, texture, heat capacity and building materials and details of the roof, taking advantage of the shade canopy vertical and horizontal at noon and in the evening, Use color to suit the climatic conditions of the environment, economy and appropriate methods of providing clean energy for buildings from the moment of initial design stage use.

The new energies, the clean blue sky

The rapid growth of energy consumption in advanced industrial societies, has caused alarm to be sounded completion of fossil fuels on the planet. Speed production of fossil fuel consumption can not be compared with the speed and the resources that have been developed over many years in recent decades with unreasonable speed, human consumption is extracted. But the limited resources of fossil fuels is only one side, More important environmental damage caused by the extraction and consumption of fuel and Continue this process is facing the planet from irreversible changes. Thus, in recent years much attention to developing programs and policies worldwide and utilizing renewable energy sources and international in outlook programs, renewable energy sources have claimed a special role in sustainable development.(Sadegh saberi, Zareie, Hematti, Kameli, 2013)

The familiar term renewable energy will include a wide range of energy that is not used in the production process of carbon sources or fossil. Solar, wind, geothermal energy is one of the most well-known ones. The disadvantages of this type of energy, such as fossil fuels, carbon dioxide concentration and as a result of increasing global temperatures and climate change and environmental pollution does. in addition to the sources of all impossible without restrictions. Since renewable energy in common, other than using fossil fuels for energy production In some sources it is mentioned as alternative energies and Because of compatibility with the environment and damage to natural resources as well as for their green energy used. Many energies that today are known as renewable energy has long been used by humans were loaded and in fact, today, with a new approach and with the benefit of knowledge and technology, has a high yield.(Same)

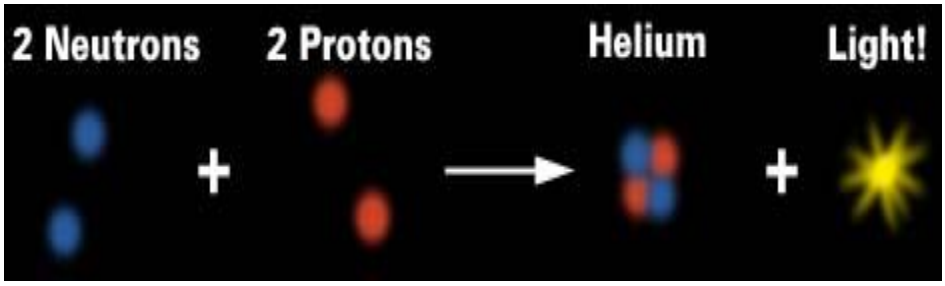
Nature of the Sun

Sun shining giant ball in the middle of the solar system and the provision of light, heat and other energy Earth. Almost all energy resources on land provided by the sun. Only nuclear energy, tidal energy inside the earth and it is part of the energy produced by the gravitational attraction of the moon is not provided by the sun. The sun's energy through fusion reactions deep in its core supplied.

In a mixed reaction two atomic nuclei together and create a new core. Fusion in the sun due to the extremely high temperature and density can be made. as a positive charge, they tend to repel one another. But the sun's core temperature and density is so high that they can be kept together.

The most common fusion process in the sun is a proton chain. This process is done when the simplest form of hydrogen nuclei, protons together with a fall. First, there will be a core consisting of two particles, the core of three nuclear particles, and finally four particles are formed. in this process, as well as an electrically neutral particle called a neutrino.

The final nucleus consisting of two protons and two neutrons in helium nucleus is located. The mass of the nucleus is slightly less than the mass of the four protons that form the core of it, and lost mass is converted into energy. The amount of energy famous equation German physicist, Albert Einstein, E = mc2 is calculated. in this equation, E represents energy, m the mass and c is the speed of light means. (Shun bakli)



Korean Sun is composed entirely of gas and the more this is the type of gas that is sensitive to magnetism plasma scientists say.

Sun's radius is the distance between the center up to approximately 695.500 km, about 109 times the radius of Earth.

Surface temperature of 5800 degrees Kelvin and the temperature of the sun's core is 15 million degrees Kelvin.

99.8 percent of the total mass of the Sun and 333,000 times the mass of Earth's solar system.

The average density of about 90 pounds per cubic foot and is 1.4 grams per cubic centimeter. This is about 1.4 times the density of water and less than one-third of Earth's average density.

More atoms of the Sun, like most stars, atoms of a chemical element hydrogen. After hydrogen, helium element can be found in the sun and the other element is composed of atoms of seven solar masses. For every 1 million hydrogen atoms in the sun, 98.000 helium atom, 850 oxygen atoms, 360 carbon atoms, 120 neon atoms, 110 nitrogen atoms, 40 magnesium atoms, 35 iron atoms and 35 silicon atoms are. So about 94 percent of the atoms, hydrogen, and 0.1 percent are elements other than hydrogen and helium.

But in terms of the mass of hydrogen is the lightest element, 73.46 percent, 24.85 percent helium, oxygen, 0.77 percent, 0.29 percent carbon, Iron, 0.16 percent, 0.12 percent sulfur, neon 0.12 percent, 0.09 percent nitrogen, 0.07 percent silicon and magnesium 0.05% of the total mass of the sun into account.

According to scientific estimates, about 4.5 billion years of the birth of the fireball to 5 billion years ago and continues to be a huge source of energy into account.

Per second, nearly 1/1 of 10 to 20 kWh of energy emitted from the sun. Only one two-billionth of the energy to the surface of the Earth's atmosphere.

This is equivalent to 1.5 at 10 to 18 kWh of energy per year.

Because of reflection, scattering and absorption by gases and aerosols in the atmosphere, only 47% of this energy reaches the Earth's surface.

The energy emitted by the Earth's surface annually to approximately 7 in 10 to 17 kilowatt hours.(Office of Research and new technologies)

The actual radiation

The amount of natural radiation from the Earth to the sun at any point depends on many factors. The main factor is the angle that the radius of the sun with the Earth's surface at that point. The value of this angle latitude that point and angle of inclination of the Earth's axis. The amount of solar radiation on the surface that is perpendicular to the radius of the amount of radiation exposed on the surface that is placed horizontally. other factors include weather conditions, air, water vapor content and the amount of dust and smoke in the air that reduce the intensity of radiation on the Earth's surface. Dust particles and water vapor in the air radiation absorbed or dissipates it. The greater the angle of incidence is less than the radius of the sun in the atmosphere during the reducing solar radiation at Earth's surface. Another factor is an effective solar radiation during the day that changed over the years.(Namaziyan)

position of the sun

At any point of the earth's surface, the path of the sun in the sky is different on different days of the year. for example, the motion of the sun relative to the building, facing south, is located in the northern hemisphere, this way, the northeast area of the building in the summer sun rises and sets in the northwest. in winter, sunrise and sunset from the southeast to the southwest area the building is done and only at the beginning of April and September, the East has risen sun sets in the West. The position of the sun at any location and at any time can by one angle and the angle of radiation found. Angle is the angle between the sun and the horizon is formed along the beam and the radiation angle at which the image along the horizontal plane and the sun comes true north. daily and annual changes of the angle depends on latitude location. In many countries, these two angles for different parts and at different times was calculated and presented in tables and curves. But if the position of the sun for specific areas of interest, which can be achieved through mathematical calculations. The first factor in the calculation of the sun angles, the angle of rotation of the earth. This angle is the angle between the planes of the equator crosses a line that connects the center of the Earth and the sun, to be created during the year from 23.5 degrees to the top Page equator to 47 degrees 23.5 degrees below the equator the changes. other factors in determining the angle and direction of radiation, latitude and time desired.(Kasmayi)

Solar energy

A source powering the sun's energy is free, clean and free of environmental impact that mankind has long been used in various ways. Sun in addition to providing light and heat of the sun, the earth, the main source of our planet is a lot of other energies. If nuclear energy, nuclear energy, land and tidal energy of the moon's gravity to ignore, can we say that other types of energy available on Earth are directly or indirectly derived from the sun.

Human Over the years, of energy for heating, cooking, lighting and lit the fire began. Ancient architecture interesting ways to use solar energy heat and light could be seen inside the building. Today, solar thermal systems are used for the benefit of clean energy and the sun endless. These systems include a section that acts on the low-temperature thermal collectors. These systems use heat from solar source to final consumption. The system consists of 2 groups of collectors and flat collectors Flat collectors focusing concentrator collectors are low.

Thermal storage systems are a part of the sun's heat for use at night may take. most solar thermal systems for water heating in the commercial, swimming pools or water cottages, apartments and hotels, and also a large part of the demand for space heating of buildings and for powering circuits absorption heat pumps and so it is used to provide space cooling of buildings. (Office of Research and new technologies)

Potential solar energy in Iran

Our country is among the circuits 25 to 40 degrees north latitude is in a region in terms of solar energy in various regions of the world in the highest ranks in the world. the amount of solar radiation in Iran between 1800 and 2200 kWh per square meter per year is estimated the number of consecutive cloudy days throughout the country and less than 5 days per year. As well as the transparency of the air in most parts of Iran, more than 60% is considered to be and in addition, due to the higher solar radiation at high altitudes our land is mountainous and much of it has an altitude of over 1,000 meters above sea level. it is also a feature in the use of solar energy and natural if the use of solar energy for hot water use in countries far less than the franchise is affordable we definitely will be affordable in the country.(Satkin,)

Solar energy is one of the renewable energy sources and the most important. The solar radiation varies in different parts of the world and the highest is in the Sun Belt. Country Iran is also located in areas of high radiation, and studies show the use of solar power in Iran was perfect and could provide part of the energy needs of the country.

Iran is a country which, according to specialists with 300 days of sunshine in more than two-thirds of the average exposure to 5.5 to 4.5 kWh per square meter per day one of the countries with high potential for solar energy has been introduced. Some solar energy experts argue step further and ideally that Iran would equip your road area to the radiant energy system required fields are also a wide range of regional energy supply and export electricity to be enabled. the studies conducted by DLR in Germany, in an area of more than 2000 kilometers, the possibility of installing solar thermal power plant is more than MW 60000. If an area of 100 × 100 square kilometers of land to the construction of solar photovoltaic plants, assign, Electricity generated will be equivalent to the total electricity generation in.

Types solar energy

Renewable energy sources as an essential component of sustainable development industry and an increasingly large proportion of the world's population live in cities, and widespread and permanent conservation of natural resources, including energy cities depend. In most cases, energy is supplied by fossil fuels used in cities elsewhere extraction, conversion and processed. But due to the rising sun of our solar system more than other energy, such as clean energy and efficiency are always available. Both active and passive use of solar energy systems, consisting done and here we

will describe the main types of germ of solar in buildings. passive solar systems business both directly and indirectly run business that went on to make the point.

Passive solar system is a system that forms part of the outer skin layer and is designed to disable a mechanism to collect and store the sun's energy in the at the right time to be transferred to the interior of the building, such as the greenhouse. active and passive solar systems due to the limited fossil resources and environmental pollution caused by the use of these resources, and it has prompted scholars communities the use of renewable energy instead of fossil fuels. The systems are designed passive solar buildings That needs cooling, heating and lighting are provided for natural and in harmony with the climate and for this reason are called passive systems that need to operate heating and cooling equipment would be minimized. 2400 years ago, Socrates has found that today houses to the south, in winter the sun's rays penetrate into the porch, but in the summer, right in the path of the sun or the top of the roof over our heads, So that its shadow, So should the south to catch the winter sun longer and longer and shorter winter winds from the north side to avoid them.

In passive solar building design, windows, walls, floors so made To collect and store solar energy in winter and distribute it in the form of heat but in winter it from entering the block. the system, passive solar system named because, unlike active solar systems, electrical and mechanical equipment not in use. the key to designing a passive solar building effective use of the region's climate. elements that should be considered include the position of windows, their size, type of wall, thermal insulation, thermal mass and shadow. elements that should be considered include the position of windows, their size, type of wall, thermal insulation, thermal mass and shadow. passive solar systems can be used easily in new buildings, in addition to the existing buildings is also applicable.

Direct Acquisition System

The structure of this method is the simplest method is the passive solar system design. through large glass windows built-collector acted like the direction they are heading south sunlight entered the building, and then deal with the internal floor or wall absorbers are stored. these components generally dark color of their choice because of the ability to absorb dark matter in a transparent material. at night the temperature inside the building comes down Heat absorbed by the thermal mass of the three major heat transfer, distribution structure and increase the temperature inside it. Some builders and home owners to absorb and store solar heat to the water content of the containers inside the building. These vessels compared to the volume of materials common to the ability to absorb and store heat energy have doubled, in addition, due to the density of water reservoirs have been designed to be of great benefit terms. Moreover, the tanks must be at least need maintenance the overhaul includes annual and periodic maintenance of its existing water treatment is to remove microbial material. passive solar screens, known as passive solar component known in the area of radiation and thermal mass depends glass windows here glass windows determines the amount of solar energy absorbed. There is also the ability to hours of the day that indoor air is too hot reducing the thermal mass to reduce the amount of energy stored, Given the important thing is that the thermal mass should not detract from the overall performance of the system is undermined. It is also essential that the ideal ratio of thermal mass and window area is determined according to the climatic conditions of the region. the other thing is that thermal mass must be completely isolated from the outside environment and if this heat energy can not be absorbed by the thermal mass, will be discharged quickly to free environment, Especially when the thermal mass is connected to the ground and out of the own temperature than the temperature outdoors is less heat mass. In a typical house with large windows facing the sun without the use of thermal mass, there is potential passive solar heating systems used to that in this case, generally known as tempering-solar Is known. in order to achieve the highest efficiency in these systems is essential to do some simple work, including Standing to clean glass windows, reducing heat losses during the night and avoid overheating of the house during the summer indicated.(Rafiyi tabatabayi, 1389)

general rules of direct absorption system

1. Analysis of a solar thermal storage is used to deliver heat to the home.

2. thickness thermal mass materials does not exceed 15.24 cm.

3. floor used as a thermal mass should be fully covered by nationwide carpets and floors are completely free as possible.

4. The use of dark colors for the floors, the use of bright colors for walls, low crime and any color for walls are used as a thermal mass.

5. per 0.09 square meters of glass for the South, 67.9 kg of building materials or 15.12 liters of water are used as thermal mass.

6. holes in concrete blocks that are used as thermal storage to be filled with concrete.

7. The use of thermal mass residential space with thin concentrator is more advantageous than the mass of thick surfaces.

8. Jeremy surface area exposed to 9 times the area of the glass is exposed.

9. solar temperature without the use of thermal mass absorbs used directly.

passive-solar heating system

Solar heating, passive solar techniques is the basis of the number of windows on the south side and windows made of a thermal mass that is often observed in homes. the solar house windows facing south about 25%, and 3% are located on the roofs of houses. energy savings in this way is small but its low cost. thermal mass absorbs heat during the day and at night heat heated home to the guide most passive solar systems with regard to thermal mass or heat storage material with a high absorption capacity and brick, concrete, tiles, water work. thermal mass can be a map of the building, parts of the roof, interior walls, fireplaces or balconies used. these levels do not need direct sunlight but should be dark in color. the heat storage material-dependent thermal conductivity, specific heat and density of them. Most of the increase in density, heat conductivity increases. important things to know about the roof should be noted, include paint, concrete, brick, glass and ceramic tiles dark interior walls and fireplaces also require more mass to store heat. in terms of energy use at home will be difficult but several thermal mass thermal mass for heat storage used is not very expensive. (Moalemi)

method cooling by passive

Natural cooling techniques make it without using any energy in the summer, stay cool house. Including the use of solar shading and passive house is important because it collects the sunlight in winter. thermal mass and construction materials used in cooling as well as heating also effective. in winter heat is stored and used in the summer to cool the house in summer by shading windows that also use less heat is transferred to their home.

1) windows for ventilation:

A primary strategy for cooling buildings without the use of mechanical parts in warm water using natural ventilation common summer Nasim with large glass south wall that used for passive heating coordination and to follow the following strategies to take advantage of air conditioning and solar valve effectively build efficient. the windows should be such that the airflow caused by the shield canopy with windows fully open. the best protection against rain

and better popup window Double hinged act. if the room has windows on only one side can be used instead of a window of two broad windows. (Sayadi, Madahi)

2) roof console:

Fixed consoles are not expensive and are not required to Operation. care should be taken in their design so as to remove the heat in the summer and in the winter to keep heat indoors do an intelligent combination of consoles with the size specified in the southern windows and window shades on other solutions to be effective. in the Santa Fe an ideal console for window with a height of 1.2 meters, 45.72 centimeters if the console is 33 cm higher than the top of the window.

3) Canopy:

Fie shadow of the sun before they reach the stop building these devices include awnings, solar screens, rolling shutters, shutter for the window and vertical louver. these devices can be controlled and adjusted as needed by homeowners use low-cost and useful home screen is another way to create shade of a veranda or corridor in the eastern or western parts of the building. (National Renewable Energy Laboratory of America)

4) The walls of the air affecting the wing:

Wing walls are exposed to wind and natural wind speed increases the pressure difference caused by the walls.

5) thermal chimney:

Thermal chimney steam and air to exit the building is used. Put a hot exhaust port area, air is drawn into the building ventilation. sun rooms are designed to the scorching sun during summer in the southern room comes with a ventilation valves are high. North side windows lower house with the windows open and the air within the valve house of the upper room is sunny outside.

Jeremy wall-to-use be made indirectly, Heating chimney thin sections are made according to a chimney and a metal absorber warming is a form that can be placed next to the chimney behind the glass plate as the temperature reached a high of houses separated by an insulated chimney above the roof is limited and a rotating turbine located at the top of the chimney that opens the opposite direction of the wind and The hot air is allowed to enter without obstacle chimney flue thermal wind in houses with open atrium and staircase used.

indirect acquisition system

In an indirect acquisition system, thermal mass is located between the home and the sun of the solar radiation that is absorbed and pass through the conduction to the home. 45-30 percent Indirect system of solar energy absorbed by the glass is used as the thermal mass. absorption Types of indirect systems are: (Ghiyabaklo)

small puddle systems

0.3 to 0.15 meters of water stored in flat roofs. It is best cooling system for areas with low humidity, but for wet areas should be large fiberglass tanks or plastic that covered by glass and the space below it is heated by radiation. (Sayadi, Madahi)

wall of water

Water in the tanks is kept rigid, heat storage capacity of water is two times higher than the thermal mass. the relatively smaller, the thermal mass is required. At least 13.23 liters of water per square foot of glass in the hopper. even a hot pipe inside a wall or a pool as a mass storage heating is used.

wall Trump

In the indirect passive solar systems, heat storage wall between the southern part of the windows and residential spaces will be the most common method is the use of wall Trump interest is indirect. Trump wall 20 to 40 cm thick and made of conventional building materials in the building's south side The exterior wall made of one or two layers above the maximum thickness of 2.5 cm cover. the outer surface of the dark, the light emitted by the sun and eventually absorbs and stores energy in the body wall of the inner surface of the wall to the interior of the discharge. Trump wall heat absorbed by the outer surface of the sun in his chamber after passing through a period of time to the interior drains the phenomenon occurs during late night and early morning. When the temperature inside the interior wall surface temperature is lower, heat radiated from the inside and then heat up the interior. add to this the amount of heat passing through the wall for one hour per inch stated, for example, heat is absorbed in the outer concrete wall 8 inches (20 cm) at noon, after a short time of about 8 hours at 8 pm will be injected into the house. (Same)

law of indirect absorption systems for walls Trump

1. Jeremy Wall of the Sun and is dark.

2. The minimum distance of 0.1 meters between the thermal mass walls are glass.

3. The valves are used in thermal mass wall, should be closed at night.

4. If thermal insulation movable wall system used at night, the area of the wall thermal mass is reduced by 15%.

5. If the brick is made of thermal wall thickness of approximately 0.35 to 0.25 m from 0.3 to 0.2 meters for Btn0.45-0.3 meters adobe and other materials and water should be at least 0.15 m. (Rafiyi tabatabayi)

Efficiency Solar Space Isolated

Solar space that titles such as solar room and sun room are also attributed to it Provide an opportunity versatile and adaptable for passive solar heating system is Solar space as part of a new building or unit is considered to be added to old buildings. the simplest design for solar space is to install vertical windows with clear glass and clear we use. solar space heating is able to get a lot of sun and the accumulation and in cases where this was surplus heat for them through the glass to open the drain. the temperature difference caused by solar heat gain or loss by the thermal mass and low emission glass with temperature adjusted. these include thermal mass of the building materials used in the floor, side walls or water tanks are building. the ventilator valves ceiling or floor, window, door and fans can distribute the task of warm air from inside the building to take in the sun room, most home owners and builders through the use of solar windows and doors to separate rooms of the house and hence the level of indoor comfort temperatures due to changes in the solar atmosphere is not adverse to change. the structure and geometry of the solar space has many similarities with glass greenhouse for gardening and greenhouse vegetables and so, in some cases as solar greenhouse is intended for solar room. (Edward mazerya)

designed passive solar systems

In passive solar building design, windows, walls, floors so made to collect and store solar energy in winter and distribute it in the form of heat but in winter it from entering the block. This system is called passive solar system, because unlike active solar systems, electrical and mechanical equipment not in use. The key to designing a passive

solar building effective use of the region's climate. Elements that should be considered include the position of windows, their size, type of glazing, thermal insulation, thermal mass and shadow. Passive solar systems can be used easily in new buildings, in addition to the existing buildings is also applicable.

benefit system inactive

inactive system technology from sunlight without the use of mechanical systems benefit. unlike active solar system technology for use sunlight to heat water, air and thermal mass conversion, which makes ventilation or use of air moving to the next. with limited use of other energy sources is a typical example of a sun room on the side of the sun in the south side of the building. Passive cooling to reduce cooling needs the same design principles. (Edward mazerya) some systems passive dampers and damper control, shutters and other materials and equipment that night to collect, store and use solar energy increases or reduce undesirable heat transfer, a small amount of conventional electrical energy or other use. passive solar technology system includes receiving direct and indirect sunlight for space heating, solar water heater using thermosyphon or pump water, the use of thermal mass or variable has the ability to change the properties of materials, smart materials to slow down internal thermal fluctuations, solar cooker, solar chimneys for natural ventilation and earth sheltering upgrade. (Ghiyabaklo)

The solar building design should consider a few things:

1. The location of the building: the factors that affect a site's characteristics, such as topography, climate, direction, nobility, lying hills or valleys around it, choose a building site must be considered in the design of their work taken seriously. in addition, both natural and built-permeable surface, material and soil temperature is important for the use of sunlight in the building is necessary place it on the ground be designed so that the greatest amount of solar radiation between the hours of 9 and 15 are operational. so should identify the local site to be determined. (Ghobadiyan)

2. The form and orientation of the building: building forms a major role in creating the right conditions for energy conservation plays the overall form of the building should be designed in such a way that the main purpose of absorbing more energy and less heat dissipation provide the design should ensure that the smallest possible value of the external surface in proportion to the size of the building is in contact with the external air. the butter is ideal given that Korea is just one the best and arrangement of buildings next to each other, the gradient changes. (Kasmayi)

3-planning and school building: one important factor in the design of the building form, reducing its height. the best solution against winter winds, reducing the slope of the roof and reduce the height of buildings against wind and weather relatively uniform helps to pass.

4. Construction details: dimensions suitable for absorption and heat transfer depending on the climate and the need to supply different geographical width, wall dimensions are:

-Glass-walled: buildings that are receiving direct radiation. Important factors for attracting the level and location of radiation-glazed glass. (Sayadi, Madahi)

- Materials: For internal thermal capacity and working hard is better than building materials such as pressed flowers, brick, stone and concrete to be used.

5-Skylights: In many cases, the absorption of solar energy through the south window may not close the shadows created by buildings or buildings are closed to the south and other factors, height and location of the window heat capacity limit.

6-Performance Building upon which determines the amount of power consumption and performance of PV-generated electricity and electricity should there be a reasonable relationship. (Eshaghi, Arab, Ahmadi)

Conclusion

To deal with environmental and energy crisis and due to the exhaustible fossil energy and renewable energy in new and clean technology to round it was inevitable which will impact on all aspects of human life and the lack of flexibility in the modern buildings twenty first century, the use of renewable energy technologies heating providing Vsrmaysh lighting, life cycles of the planet and its ecosystem has suffered a serious crisis. for this reason, international programs and policies for sustainable development worldwide, has been assigned a special role to renewable energy sources. Unfortunately, with these resources, abundance and low cost of fossil energy sources in the country on the one hand and the high cost of operating the system non-active solar On the other hand, an obstacle to the development of these technologies is emerging. furthermore, the change of attitude towards sustainable architectural design and use of components and materials suitable Ssytm using passive solar techniques used to control compensation incurred losses, has been emphasized by planners and designers. the use of light and solar energy in buildings using solar windows, walls Trump, greenhouse, double glass, as well as putting the main environment on the southern side and also pay attention to the effect of color, texture, structure and properties of roofing materials, thermal capacity, utilization of shading horizontal at noon and vertical shading in the afternoon, the use of color to suit the climatic conditions of Iran could be one of the main pillars of the efficient use of energy in buildings and to inform people of the existence of this type of technology, according to real energy prices and removal of subsidies, as it seems, finally people understand the need to make energy costs in heating systems, cooling and lighting to drastically reduce and with the international community, using system passive energy absorption, reducing energy consumption and accumulation for the future as well as helping to protect the environment, to be shared.

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