



## THE PRINCIPLES SHAPING OF ACTIVE ENERGY COMPLEX - HOUSES USING SOLAR ENERGY

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**Summary. Raising of problem.** World’s natural resources are: coal - 909 064 billion t.; oil – 12 580 milliard barrels; Natural gas - 173trillion m<sup>3</sup>. Considering the factor, that more than 2.3 billion tons of coal, 30 187milliard m<sup>3</sup> of oil and gas is consumed for a year, it will be more than enough of natural resources for the following years: coal for 200 years, oil - 42 years, gas - up to 65 years [1; 3; 5]. Now there is the global economic downturn, so it is necessary to find alternative natural resources. An effective way of solving this problem is energy saving measures inculcating and state support use, based on managing alternative renewable energy sources in the nearest future. The usage of renewable energy sources will increase the energy of the world, and also will provide environmental cleanliness, social and economic development. Nowadays, the energy of the sun is one of the most perspective among renewable energy sources that can be collected by solar panels. **Purpose.** Analysis the principles shaping of active energy complex-houses using solar energy. **Conclusion.** The most efficient in terms of minimizing heat loss is a circular shape. It has the smallest perimeter and that’s why building with circular shape in the plan will have the smallest area enclosing parts. Another advantage of the circular shape of the building -if the building’s facade is covered with solar batteries, the process of electrical energy generation will be much efficient. Considering a great step in the solar panels production in a short period of time, we can assume that the common way of their usage will change.

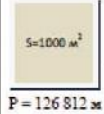
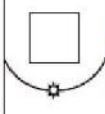


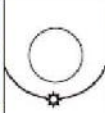







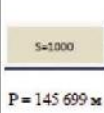


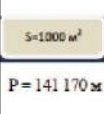
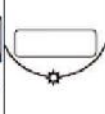




**Key words:** *renewable energy sources, energy activemulti-storey buildings, solar energy, solar panels.*

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Форма	Вплив сонця	Приклад	Опис
 <p><math>S=1000 \text{ м}^2</math> <math>P=126\,812 \text{ м}</math></p>		 <p>COR building, OPENbeim architecture</p>	<p>Кругла форма найбільш оптимальна, оскільки при одній і тій же площі коло має менший периметр. Кругла форма отримує більше сонячної радіації з південної сторони.</p>
 <p><math>S=1000 \text{ м}^2</math> <math>P=112\,349 \text{ м}</math></p>		 <p>Башня Мінрі-Екс. 30, «Фостер и Партнерс»</p>	
 <p><math>S=1000</math> <math>P=144\,781 \text{ м}</math></p>		 <p>Duke Energy Center, Арх. Tishman</p>	<p>Форми з округленими кутами є більш сприятливі до впливу Сонця. при однаковій площі форми з округленими кутами мають менший периметр, отже, зменшуються тепловтрати з поверхні зовнішніх огорожувальних конструкцій холодну пору року і надходження тепла в теплу. Широтна орієнтація сприяє хорошій інсоляції будівель.</p>
 <p><math>S=1000</math> <math>P=133\,375 \text{ м}</math></p>		 <p>Commerzbank, «Фостер и Партнерс»</p>	
 <p><math>S=1000</math> <math>P=145\,699 \text{ м}</math></p>		 <p>Millennium Tower в Сан Франциско</p>	
 <p><math>S=1000 \text{ м}^2</math> <math>P=141\,170 \text{ м}</math></p>		 <p>AKASYA Client, Arch. Acibadem Architect</p>	
			
<p>25 %</p>			
<p>1.</p>			

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Vertical Village [14].

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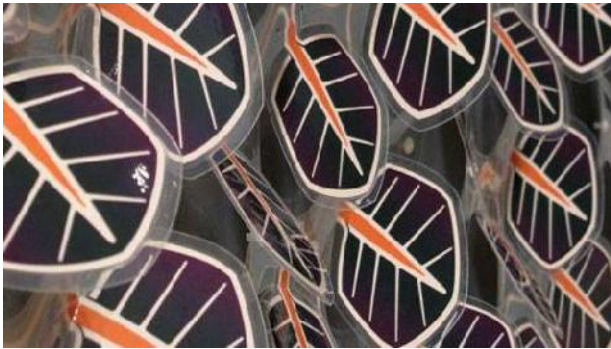
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5. The CIS Tower ( ).

Solar Ivy ( ) ( . 6).  
 SMIT (Sustainable Minded Interactive Technology)

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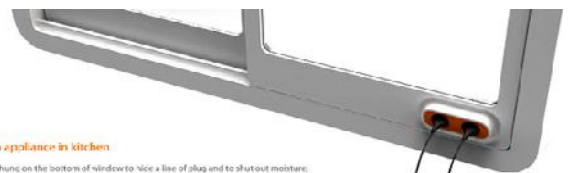
Solar Window –



. 7.

Solar Window

( . 8).  
Solar Roadways



plugged in appliance in kitchen

A multi-use fishing on the bottom of window to slice a line of plug and to shut out moisture, rain and snow coming from the outside. In order to get rid of inconvenience to hide notes, they were also visualized in the top of window.

size calculator



Tea kettle

Mixer

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10. « »  
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