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SHANGHAI GREEN BUILDING SUBSIDIES

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China has been in the spotlight lately for its exponentially growing number of green buildings. The government has even created their own green building system, the China Green Building Label (GBL - commonly referred to as "China Three Star"), to run concurrently with the widely recognized American system, LEED. Recently, the Chinese government has taken their support for green buildings a step further by giving government subsidies to support building green. At BEE inc. we specialize in consulting on both LEED and GBL and have firsthand experience of the development of both in China. ***In this article we will discuss some of the subsidies the government has for building green.***

In May 2012, the Ministry of Finance (财政部)and the Housing Department (住建部)announced that they will be giving subsidies specifically to support the development of China Green Building Label certified buildings with a rating of Two Stars and above. There will be a 45 RMB/m^2 financial subsidy for Two Star buildings and 80 RMB/m^2subsidy for Three Star buildings – for more infoon the general GBL subsidies click here. They also announced several goals for the expansion of green building development. By 2020 China aims to have green buildings comprise at least 30% of new buildings constructed from 2012. By 2014 newly constructedgovernment low-incomehousingmust be China Green Building Label certified. By 2015 the government plans to have over 1 billion square metersof new building construction area. To know more about the overall goals for China green buildings click here.

Shanghai has been leading the way in promoting green buildings and specifically energy management. Energy management is a very critical aspect of green buildings because much of a building's environmental footprint comes from the energy used during its operation. In September 2012, Shanghai published a new green building energy saving policy, "Shanghai City Building Energy Saving Projects Special Support Measures" ("上海市建筑节能项目专项扶持办法") which discusses ways that the government will provide energy monitoring and management to building projects.

The Shanghai government will additionally be providing their own subsidies to promote different specific green building characteristics related to energy saving. For these subsidies, the Shanghai government will be investing up to 10 million RMBper project, marking the first time such a large amount has been invested in green buildings in China. Subsidies will be awarded to buildings with green features in several different categories including, China Green Building

Label certified, pre-fabricated buildings, window and shading renovation, on-site renewable energy andvegetated roofs and walls. For the original government source, click here.

1.) China Green Building Label Certified Projects

China Green Building Label is a green building evaluation system created by the Chinese government and used throughout China. The categories for evaluation of the Green Building Label certification are divided into six sections, land saving and ambient environment, energy saving and energy utilization, water saving and water resource utilization, material saving and material resource utilization, indoor environmental quality and operation and management. To apply for this subsidy a building must meet the following criteria:

General Requirements: Must be Two or Three Star China Green Building Label Certified residential or public buildings.

Building Requirements:

Two Star residential buildings withan area of 250,000 m^2 or more

Three-star residential buildings with an area of 10,000 m^2 or more

Two star individual public/commercialbuildings with an area of 10,000m^2 or more

Three-star individual public/commercialbuilding with an area of 5,000 m^2or more

Construction Requirements: Public buildings must be able to implement sub-metering, and monitor and report the energy consumption data to their Municipal Government Building Bureau(市交通委员会).

2.) Prefabricated Projects

Prefabricated buildings have been gaining popularity because of their ease and low-impact on the environment. Prefabricated buildings have the advantage that they are built in a controlled environment, which allows for materials to be bought in bulk and be used over several building projects, creating less building waste and cutting down on cost. Building indoors also makes buildings process faster because of less weather delays and helps ensure building quality. For the on-site construction,because most of the building is already made, only the material really needed is transported which cuts down on emissions from transportation. Additionally there isgenerally less impact on the construction site area because less space is needed to store building materials also shorter construction time and easier construction

creates less noise and locally generated air pollution. To apply for this subsidy a building must meet the following criteria:

General Requirements:Buildings must be 15% prefabricatedor more.

Building requirements: Buildings must have an area of 25,000 m^2 or more

3.) New Buildings with High Energy Efficiency

New buildings are generally more energy efficient than existing ones during operation because measures to reduce energy use can be incorporated from the beginning design stages throughout the construction and operations. To apply for this subsidy a building must meet the following criteria:

General Requirements:Must be a new residential building or public building where the energy savings 70% or more.

Building size requirements:

Individual Residential buildings with an area of50,000 m^2 or more
Individual Public building with an area of 20,000 m^2 or more

Construction requirements:

Buildings must integrate exterior shading devices for windows in design.

Public buildings must be able to implement sub-metering, and monitor and report the energy consumption data to the Municipal Construction and Transportation Committee (市交通委员会).

4.) Existing Building with High Energy Efficiency

Using existing buildingscan have many advantages over new construction such as savingon emissions, costs, and new resources. Many older existing buildings, however, have the disadvantage that they are less energy efficient. Therefore it is important whenusing an existing building to make the appropriate energy saving building renovations and monitor energy usage. To apply for this subsidy a building must meet the following criteria:

General Requirements:Must be an existing building with energy savings of 50% or more.

Building size requirements:

Residential buildings with an areaof 10,000 m^2 or more
Individual public buildings building with an area of20,000 m^2 or more

Construction requirements: Public buildings must be able to implement sub-metering, and monitor and report the energy consumption data to the Municipal Construction and Transportation Committee (市交通委员会).

5.) ExistingBuilding with Exterior Windowor Window Shading Renovations

Most of the energy used during a building operation is for lighting, heating and air conditioning. The use of energy efficient windows or properly placed shading devices can have a significant impact on energy savings for a building and are an important aspect of existing building renovation. To apply for this subsidy a building must meet the following criteria:

Building size requirements:

Residential building with an area of 5,000 m^2 or more
Individual Public building with an area of 10,000 m^2 or more

Construction requirements:

The renovation of exterior windows for existing buildings must be in accordance with the requirements in “design standard for energy efficiency of residential buildings” （DGJ08-205） and “public buildings energy-efficient design standards”（DGJ08-107） (in Chinese:《居住建筑节能设计标准》（DGJ08-205）)《公共建筑节能设计标准》（DGJ08-107）).

Renovation of existing building exterior shading devices, should be in accordance with the requirements in “construction engineering technical specification” (JGJ237)or in Chinese (《建筑遮阳工程技术规范》（JGJ237）).

Public buildings must be able to implement sub-metering, and monitor and report the energy consumption data to the Municipal Construction and Transportation Committee (市交通委员会).

6.) Onsite Renewable Energy

The use of renewable energy created from an onsite source can have many advantages, such as less energy needed to buy from the local energy grid, less emissions associated with a building’s energy consumption and educating the building’s occupants about alternative energy sources. To apply for this subsidy a building must meet the following criteria:

General Requirements: Projects must have an onsite renewable energy or heating source such as photovoltaic solar panels or solar or geothermal heating.

Building size requirements:

One Renewable Energy Source only:

Residential Buildings with an area of 50,000 m^2 or more

Public Buildings with an area of 20,000 m^2 or more

Two or more Renewable Energy Sources:

Residential building with an area of 40,000 m^2 or more

Public building with an area of 15,000 m^2 or more

Construction requirements: Public buildings must be able to implement sub-metering, and monitor and report the energy consumption data to the Municipal Construction and Transportation Committee (市交通委员会).

7.) Vegetated Roof and Wall

The use of vegetated/green roofs and walls can benefit a building in many ways. They can reduce a building's heat-island effect (heat absorbed due to the use of dark-colored materials) and are also good thermal insulators, which can reduce the energy needed to heat and cool a building. Green roof and walls can also collect and reduce stormwater runoff from a buildings site. Additionally, they are aesthetically pleasing and can increase the satisfaction of building occupants as well as property value. It is important to keep in mind using local or adaptive plant species when selecting plants to use for green roofs and walls to ensure low amounts of water needed and easylandscaping maintenance. To apply for this subsidy a building must meet the following criteria:

General Requirements:Must be a public building with vegetated walls and roofs located in key areas of the city. Areas that are already getting a subsidy from the government cannot be counted again.

Building Requirements:Building need to have at least one of the following:

Green roof coverage area of 1,000m^2or more

General green wall coverage area of 1,000 m^2 or more

"Special" green wall coverage area of 500 m^2 or more

Construction requirements: Must be in accordance with the relevant technical specifications for vertical vegetation and green roofs.

8.) Building Energy Saving Management and Services project

For all buildings energy sub-metering and commissioning of building systems are important to ensuring energy is being used efficiently and gauge a building's sustainability performance. For approved projects the Shanghai government will supply aid with energy auditing and sub-metering for existing government office buildings, and large-scale public buildings.

Subsidies Awarded for Green Building Criteria

For each green building category there is a corresponding subsidy that the Shanghai government awards if the project is approved. Below are the subsidies granted for each category:

1.) For criteria 1,2,3, or4, there is a subsidy of 60 RMB/m^2. For the prefabrication criteria specifically, if 25% or more of the building is prefabricated, the project will receive a subsidy of 100 RMB/m^2.
2.) For criteria 5, there is a subsidy of 150 RMB/m^2based on renovated windows area. For the implementation of exterior windows or exterior shading renovation and a subsidy of 250 RMB/$m^2$for the implementation of windows and exterior shading renovation.
3.) For criteria 6, subsidies will be granted based on the type of alternative energy used. For projects that use solar heating or geothermal heating there is a subsidy of 60 RMB/m^2 of the projects benefited area. For projects that use solar photovoltaic panels there is a subsidy of 5 RMB/watt.
4.) For criteria 7, vegetated roofs can apply for subsidies up to 200 RMB/m^2. Combined roofs can apply for subsidies up to 100 RMB/m^2. Lawn green roofs can apply for subsidies up to 50 RMB/m^2. General green wallareas can apply for subsidies up to 30 RMB/m^2. Government classified "special" green wall areascan apply for subsidies up to 200 RMB/m^2.
5.) For criteria 8, the government subsidies will be granted on a project-by-project basis. Sub-metering should be done in accordance with the government rules and regulations.
6.) Projects that are chosen as national demonstration projects will be given financial support by the Central government as well as the Local government.
7.) Projects that qualify under the government criteria as having on-site renewable energy or being low-income housing or pre-fabricated projects may qualify for subsidies up to 10 million RMB. Projects that meet other criteria may qualify for up to 6 million RMB.
8.) If a project has previously qualified for a subsidy other than those listed above, it can only apply for one category of the above green building subsidies.

Application and Assessment of the Project

- To apply for the pre-fabricated building criteria, and existing residential building energy saving demonstration criteria, as well as energy savings windows and building exterior criteria apply to the Municipal Construction and Transportation Committee (市交通委员会).
- To apply for the vertical and green roof criteria submit relevant material to City Greening Bureau (市绿化市容局) and the Municipal Construction and Transportation Committee.
- Building energy audits and sub-metering demonstration projects must submit a written application and relevant materials to the Municipal Construction and Transportation Committee.
- Other demonstration projects should submit a written application and relevant material directly to the Municipal Construction and Transportation Committee.

Each project will be audited by the Municipal Construction and Transportation Committee (市交通委员会) as well as the Municipal Development and Reform Committee and the City Finance Bureau (市发展改革委、市财政局), the City Housing Authority (市住房保障房屋管理局), the City Greening Bureau (市绿化市容局)and other relevant departments.

Each project that is successfully awarded a subsidy will be issued in the City of Construction and Transportation Committee Publicity Website (jsjtw.sh.gov.cn) as well as publically mentioned for seven days, in the Shanghai City Building Energy Conservation Project.

The green building market is developing rapidly in China and there are constantly new developments. If you are interested in learning more about green buildings and related subsidies in China, feel free to reply to this post or contact us via our website.