Listening 2 Building for the future

Audio script

Building for the future

Our ability to survive in the future depends in part on how we adapt the way we currently construct buildings. Estimates are that by the year 2050, there will be nine billion people in the world who need housing. If we had unlimited resources of building materials, water, and energy, this wouldn't be a concern. But we don't. Thus, the challenge now is to learn to design buildings that use resources well. We need to meet the current needs of people living today, but we can't overuse our resources now because this might make it difficult for future generations to meet their needs.

With this in mind, today we're going to look at a trend called green building, which emphasizes using renewable resources, like sunlight, and being environmentally responsible. First, I'll explain some principles of green building. Then, I plan to focus on two aspects: energy use and reuse of existing buildings, such as those built for the Olympics.

Regarding the principles of green building: The first principle of green building is that the building is energy-efficient; for example, it has windows that let in a lot of sunlight, but not heat or cold. The building also uses renewable energy sources, such as solar and wind power for some electricity, heating, and cooling. The second principle is that the building is designed to fit in well with the surrounding environment; for example, the landscaping uses local trees and plants. The third principle is resource conservation. This means the building materials that are used have some recycled content, and come from local sources when possible. The fourth principle is that the building meets the community needs of the people who use it; for example, there is easy access to public transport like buses and subways and shopping. The last principle is that it is often better to reuse an old building than to construct a new one. The reason is that reusing an old building saves resources.

Now let's look at energy use in more detail. There are two goals: reduce energy use when the building is constructed, and reduce energy use when the building is used. During construction, attention is paid to the type of building materials used. For example, builders may use renewable materials like bamboo. They may recycle stone and metal, and use floors made from recycled materials like plastic water bottles and old tires. In addition, they use local materials when possible to avoid using energy to transport building materials from far away.

The building design emphasizes using renewable resources, such as sunlight, wind power, and water once the building is in use. Making a building comfortable for the people who use it is obviously very important. Whether this means keeping it warm, or keeping it cool, of course, depends on the climate of where the building is located.

In a northern European country like Germany, windows and landscaping can be designed to take advantage of the sun in the winter. For example, a building with more south-facing windows brings in sunlight and warmth. Trees can be planted to provide shade to the building during warm months, yet allow warm sunshine in when the leaves are gone during cold, winter months.

In warmer climates, such as in Egypt, buildings can be designed to let in less strong sunlight in the middle of the day, yet allow in enough natural light for people to see without turning on lamps or lights. In addition, trees can be planted to block some sunlight year-round, which will help reduce the amount of energy needed to keep the building cool.

There are many examples of green building projects that use energy efficiently, such as Masdar City, in Abu Dhabi, the United Arab Emirates, which is an entire city designed to be completely powered by renewable energy. Another is the Bahrain World Trade Center, which has wind turbines that produce around 13% of the tower's total power needs. And then there's the Sun Life Center in Manila, the Philippines, which has windows that let in light, but block heat and noise, and thus lower air conditioning costs by about 35%.

A green building doesn't need to be new, though.

Taking that into consideration, now let's turn to reuse of existing buildings. The main reason to reuse old buildings is that it saves limited natural resources like wood and metal. Earlier I mentioned reusing Olympic facilities. Let's look at some examples of how Olympic buildings were transformed: The facilities from the Sydney, Australia Olympics of 2000 were turned into a huge public park. The aquatic center in Beijing was converted to an enormous indoor water park where people can swim. Barcelona converted Olympic buildings to university dorms for students. After the 2012 Olympics, London created Queen Elizabeth Olympic Park.

A different example of reuse is Namba Parks in Osaka, Japan, which was built from a former baseball stadium. By reusing the stadium, the builders saved a lot of building materials. It is designed so that people don't have to use energy to travel far to meet their needs. They can live and work, shop, and enjoy entertainment right there.

Do we have to choose between meeting current needs or future needs? The answer is no. If we expand our use of green building, we can achieve the goal of doing both.

Words and expressions

turbine *n.* 涡轮机；汽轮机
aquatic *adj.* 水中的，水上的

Proper names

Masdar City 马斯达尔城（阿拉伯联合酋长国阿布扎比附近的一个生态新城）
Abu Dhabi 阿布扎比酋长国（阿拉伯联合酋长国最大的酋长国）
the United Arab Emirates 阿拉伯联合酋长国
Bahrain World Trade Center 巴林世贸中心（位于巴林首都麦纳麦）
Manila 马尼拉（菲律宾首都）
Namba Parks难波公园（位于日本大阪）
Osaka 大阪（日本城市）