The Most Expensive House in the Universe

by ReadWorks

Do you know where the most expensive house in the universe is located? Some might guess Hollywood, where some of the richest and most famous movie stars have their homes. Others might think of New York City, where a one-bedroom apartment in Manhattan can cost more than a mansion in the suburbs. But they would all be wrong, because this is a trick question. The most expensive house isn’t even properly located on Earth. It’s the International Space Station (ISS), which is circling in orbit above us right now. The cost to build this engineering marvel, which is roughly the size of a football field, is around 150 billion dollars.

Many different governments cooperated in order to plan and build the ISS, including the USA, Russia, Japan, Canada, and Europe. These entities decided to work together on the project only after developing plans independently for related space projects. By combining forces, they reasoned, they could split the cost of constructing a space station and also share resources while onboard the station.

The countries envisioned three important purposes for their joint project: to support scientific research, to help astronauts continue to explore space, and to educate the public. Thus, the engineering criteria for the space station had to include facilities to support each of these important missions.

Construction began in 1998, after the countries decided to band together and merge their space missions to create the ISS. Many countries used their spacecraft to deliver the parts for the ISS, little by little, into space. First came the operating systems and hardware. Then, two years later, a Russian rocket delivered the living quarters (complete with beds, toilets, and a kitchen) that would make the ISS
habitable for humans. The first "residents" of the ISS-two Russian astronauts and one American-arrived on Expedition 1 in 2000. Over time, more space missions to the ISS added new parts to the space station, such as "docks" for incoming spacecraft that would make it easier for astronauts to come in and out of the station.

Throughout the construction of the ISS, which is partially solar-powered, engineers had to think constantly about the best way to keep the ISS running. They had to build and position the station's parts so that the space station could be powered by light from the sun. They also had to think about ways to protect it from meteoroids (including installing strong shutters on its seven windows). They installed robotic "arms" for the space station that could grab and hold both ships and astronauts securely while docking. And they had to install features that would make it easier to live for long stretches of time in space, such as exercise machines for the astronauts.

Astronauts can come and go on the ISS. They come to perform many of the experiments for which the station was designed, involving biology, physics, astronomy, and meteorology. Others test equipment to be used in missions to the moon and Mars. In a Japanese-built laboratory aboard the ISS called Kibo (which means "hope"), they can even grow plants and raise fish. However, most of the astronauts' space food is still delivered in sealed bags, and there isn't much variety. Thus, the crew aboard the ISS often looks forward to visiting shuttles that bring the astronauts fresh, different fruit to eat.

Life aboard the ISS has become relatively more comfortable thanks to technological improvements developed by engineers; however, it has not always been easy for the engineers back home to work on the space station. Space travel and construction of spacecraft are two of the most expensive projects a country can take on, and as the economies around the world shift, some countries have a harder time contributing financially. Sometimes, engineers from different countries will disagree about the best way to build something. And while some people on the space station project think it's a good idea to charge money to space "tourists" in order to provide more funds for the project or to charge companies a lot of money to advertise their business on the rockets that fly to the ISS, others think that these ideas do not align with the original purposes of the ISS. But the fact is, no country or individual can afford the giant price tag for this important space "house" alone, so they must keep working together. And the results-whether they include important new scientific discoveries, easier and more frequent missions to Mars, or better cultural relations between our countries-are sure to benefit us.
Today, New York's Empire State Building is one of the most famous structures in the world. It stands hundreds of feet taller than the skyscrapers that surround it, and is visible from far away in New Jersey and Long Island. But it isn't the tallest building in the world. In fact, since the recent completion of One World Trade Center, it isn't even the tallest building in New York City!

But when the Empire State Building was constructed, it was more than just another skyscraper. It was the tallest, most remarkable building on the earth—and it stayed that way for close to forty years. To understand what people thought about the Empire State Building when it was first constructed, we can look at original newspaper reports from *The New York Times*. These are called primary sources, because they were written by people who witnessed history first-hand. With these *New York Times* reports, we can see the building through the eyes of the past, and perhaps have a chance to appreciate this most famous skyscraper as though it were new.

* * *

The Empire State Building was built at the site of the famous Waldorf-Astoria Hotel, a lavish structure that, by 1929, was no longer up to the demands of the modern world. A corporation headed by former New York governor Alfred E. Smith proposed to build an office building there—not just any office building, but the greatest in the world. At this time, there was fierce competition to see who could build the tallest building on the earth. The nearby Chrysler Building was set to claim the title, but Smith and his company wanted to steal it from them, by building something so big that it would be years before anyone could top it.

There was just one little problem: the Great Depression. The stock market crashed at the end of 1929,
destroying banks, emptying savings accounts and leaving millions out of work. But the men behind the Empire State Building would not be stopped. They finished tearing down the old Waldorf-Astoria by the beginning of 1930, and on March 17-St. Patrick's Day-the work on the skyscraper began.

"Time was an essential element," wrote Smith, to complete "the greatest structural accomplishment" the city had ever seen.

Because height was of the utmost importance, the building was designed from the top down. At the very top would be a "dirigible mooring mast." A dirigible is a kind of giant blimp, built to fly across the Atlantic Ocean in the days before jets. Although now that may seem silly, at the time, dirigibles were cutting edge technology, and the mooring mast, according to Smith, was "a logical development of this day of air transportation." Moreover, the 200-foot mast would allow the building to solidly surpass the Chrysler Building in height.

The mooring mast was planned to reach nearly 1,300 feet above Fifth Avenue. Below that was the building-as wide as a city block on the first floor, but narrower as it went up. The places where it got narrower are called "setbacks," and they started at the sixth floor, a design the architects said, "will save space and assure light and air to neighbors."

"We believe we have solved the problem of light and air in congested districts," said Mr. Smith.

Construction began on the bottom floors even before the designs for the top floors had been finalized. Once it started, it went fast. *Times* reporter C. G. Poore described the process as "a chase up into the sky, with the steel workers going first and all the other trades following madly after them." To illustrate this, Poore produced "some staggering figures":

The building of the skyscraper represents an investment of $50,000,000 and all other figures are in proportion. More than 50,000 tons of steel, 10,000,000 bricks, and 200,000 cubic feet of stone will be used before the frame is completed. There will be seventy-five miles of water mains and 2,000,000 feet of electric light and power wiring...More than 3,000 men are daily at work...Among them are 225 carpenters, 290 bricklayers, 384 brick laborers, 328 arch laborers, 107 derrick men.

Each day, those men walked to work past long unemployment lines, which reminded them how lucky they were to have such well-paying jobs. Building the Empire State Building was a dangerous job, performed without hardhats, harnesses, or any of the safety equipment required today. Imagine walking out on a narrow steel beam, 1,000 feet above the street, and then having to work up there all day!

On each floor, Poore tells us, there was "a miniature railway system," to haul the steel, wood and marble brought up from street level. And to keep the men from having to go all the way down to eat lunch, there were "restaurants at various levels of the building" designed for the workers. At night, when the bosses went home, the workers could relax. They would pick a specific floor of the building and throw a party-laughing and having fun, knowing that they were higher above the city than any of the richest men in town.

* * *

The building was finished in just over a year. Of all the words written afterwards, perhaps the most interesting come from Mrs. Alice Liddell Hargreaves, an elderly English woman who visited the tower soon after its completion. Seventy years earlier, Mrs. Hargreaves had known a quiet country pastor named Lewis Carroll, who used her as the inspiration for his most famous book: *Alice's Adventures in Wonderland.* Now much older than the character she inspired, Mrs. Hargreaves "seemed almost as excited with her newest adventures in the wonderland of New York."

The Empire State Building, she said, was "just like the tumble down [the] rabbit hole."
1. When the Empire State Building was constructed, how did it compare in height to other buildings?

2. Why did Alfred E. Smith and his company want to build the Empire State Building? Support your answer with evidence from the article.

3. What is the most expensive house in the universe?

4. Why was the International Space Station built?

5. Compare the Empire State Building with the International Space Station. Support your comparison with information from both articles.

6. Contrast the reason(s) the Empire State Building was built with the reason(s) the International Space Station was built.