8 January 2008

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Image of the Solae tower
Mitsubishi Electric Company

# World's Tallest Lift Testing Facility Is Open for Business

*Providing high-speed elevators for the next generation of super-tall buildings*

Called the Solae, the 173 meters tower that dominates the skyline of the Inazawa City was built by the Japanese Mitsubishi Electric Company in order to test high speed elevators that will be used in the future tall buildings all around the world. The problem of moving people to the superior levels of a tall building has been around ever since the appearance of these structures. Using stairs to provide access to the top levels of tall buildings is not only inefficient due to the time required for such an action but also leads to physical exhaustion of the person. You might think that elevators would be a better choice in this case. It's true that elevators eliminate input of effort required in the case of stairs, but the time component of the problem still remains. In the case of the tallest buildings, a trip to the superior floors would take somewhere from a couple of minutes to tens of minutes to cover the whole distance from top to bottom, without taking into consideration the fact that the elevator would also need to stop at certain points to let off the people that need to access the respective floors. Why don't the elevator manufacturers increase the speed of the elevators, you might ask. Well, in fact, that's what the producers around the world are trying to do, but there are some physical limitations to this. Imagine traveling with an elevator in a downward motion for example, while exceeding the acceleration of the gravitational field of the Earth for a fraction of time. The system would basically be in a free fall, and people inside would practically float inside the elevator. Elevators are generally safe; however, Mitsubishi argues they aren't safe enough. The newly constructed tower will serve as a testing facility for the next generation of super-tall buildings, and cost the Japanese manufacturer over 50 million dollars to complete. The unique design will enable it to test several components used routinely in elevator systems, such as gears, cables and others. As a metropolis gets crowded with people, the city expands ever more horizontally. However, such expansions cannot go on forever, so they expand upwards by building even taller buildings. The record for the tallest artificial structure in the world is currently being held by Taiwan's Taipei 101, with a hight of 508 meters, but is believed to be quickly surpassed by scheduled projects all over the world. Strangely, Europe's tallest structure stands in the conservative England, more precisely in its capital city, London. The 'Shard' as it is called, will be 310 meters tall when completed. Taipei 101 has, you guessed it, 101 elevators which have a top speed of 61 kilometers per hour, equivalent to 17 meters per second, and are currently the fastest lifts in the world. A common effect experienced while traveling vertically at relative high speed is the 'popping' ears that occurs due to rapid change in atmospheric pressure. Taipei 101 incorporates pressurized elevator cars that prevent such annoying effects and aerodynamic shapes to eliminate the whistling sound produced by the friction of high speed air with the car.


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