Mr. Peter Ford, Session Chairman

One of the most visible mega projects in this region we have heard of is the Burj Dubai Tower. Our next speaker, Ms. So Young Lee, will talk to us about this mega project.

Four years ago Samsung Engineering and Construction was awarded the contract to build and supervise the building of the Burj Dubai. Samsung is a global company, as you all know. Ms. So Young Lee and her colleagues have been transferred to Dubai to manage this project. It gives me a great pleasure to introduce to you Ms. So Young Lee.
Good morning!

Welcome to the Burj Dubai. It is already now the world’s highest structure made by human beings. It will be even higher by the end of the construction. Before I go on I would like to specify the role of Samsung. The construction work of Burj Dubai is carried out by a joint venture of Samsung and BESIX, a Belgian construction company, and Arabtec, a local company with the collaboration of SOM from the U.S. for the tower design.

Samsung is the main contractor and the leading company of the three, managing high tech construction technology, which is required in super-high rise buildings.
The Burj Dubai tower is the centerpiece of the $28 billion Downtown Burj Dubai, a mixed-use development in the heart of Dubai.

This 1-square-kilometer development district consists of 5 major projects. First, at the heart of the district is a 36-acre man-made lake and the Burj Dubai tower.

On the right you can see the BUSINESS HUB, office facilities. On the left there is the RESIDENCES, an exclusive upscale series of high-rise apartment towers.

Below is the OLD TOWN, a low-rise traditional residences community inspired by Arabian architecture.

Finally, the DUBAI MALL, the world's largest shopping and entertainment complex.

The mall is set to house more than 1,500 retail shops spreading across an area of 1.1 million square-meters.

All of the 5 major projects are due to be completed at the end of 2008.
Here you see a rendering of Burj Dubai Downtown.
The official name of the project is Burj Dubai. Actually, Burj means “Tower” in Arabic. Therefore, it’s Dubai Tower.

The construction period will be 55 months. The work started in Feb 2005 and will end in August 2009.

The initial contract amount was $876 million, but due to design changes and other factors, the real amount is likely to jump to $1.1 billion.

Our client is Emaar the biggest real estate developer in the UAE and the Middle East as well.

SOM, from USA, designed the tower. SOM has an unrivalled reputation for super high-rise building design. They are the architects of Jin Mao Tower in Shanghai and Sears Tower, the 4th tallest building in the world at the moment.

Burj Dubai will have 160 floors. Its height is being kept secret, but will be more than 700 m.

The built-up area is around a half million square meter.
Here you can see the building usage.

The first 39 floors are hotel accommodations.

It will be the Armani Hotel Dubai. This new boutique hotel is created by world famous Italian fashion designer Giorgio Armani in association with Emaar. Over the next 10 years, numbers of Armani Hotels will be built at major world cities and Armani Hotel Dubai will be the 2nd of its chain to open. Currently, Giorgio Armani oversees all aspects of content design and style, including interiors, amenities, furnishing and even beauty collections.

Floors 40 through 108 will be taken up by 900 apartments. From floor 109 to 154 there will be corporate offices, except for a 123rd and 124th floor observation deck.

The observation deck is 442 m above the ground – the highest publicly accessible observation deck in the world. Specially designed high-speed elevators, at the speed of 600 m/min will be installed for the deck visitors. It will be the world’s fastest double deck lift and will take only 50 seconds for the visitors to reach the deck from the ground.

On the top of the offices will be the spire also holding communication equipment.
Samsung has put its name tag on the world’s 3 tallest buildings. We constructed TOWER 2 and Skybridge of Petronas tower in Malaysia. Samsung also participated in the finishing package of Taipei 101, and now we’re building Burj Dubai.

When the Burj Dubai is completed, the height difference between Burj Dubai and TFC101 will be more than 300 m. That means, it will be as tall as twice the Empire State building.
<table>
<thead>
<tr>
<th>Structural Facts</th>
<th>Burj Dubai</th>
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<tbody>
<tr>
<td><strong>Structural Type</strong></td>
<td>RC Structure (B2 – L156)</td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>Steel Structure (L157 – Pinnacle)</td>
</tr>
<tr>
<td><strong>Building Weight</strong></td>
<td>540,000 ton</td>
</tr>
<tr>
<td><strong>Foundation Type</strong></td>
<td>Bored Pile</td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>(Dia. 1.5m x Depth 50m 192ea)</td>
</tr>
<tr>
<td><strong>Major Qty</strong></td>
<td>Concrete: 308,000 m³</td>
</tr>
<tr>
<td></td>
<td>Rebar: 55,000 ton</td>
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</tbody>
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Let me explain the building structure. From B2 to level 156 is a Rebar Concrete structure and from level 157 onwards is a steel frame structure.

Building weight is 540,000 tons.

192 tower piles, each 1.5 m wide, have been constructed to depths of 50 m and are bound together by a 3.7 m thick raft foundation.

The building is also designed for severe wind load up to the wind speed of 55m/sec.

I am sure most of you have a keen interest in the cables that are used in the tower. Of course, there are many types of cables being used in the building. One example would be power cables. The type is 1 kV 3-core 185 sq copper LXPE armored cable of which 13 km are used, including the longest vertical span which is 338 m and it is installed by ETA Voltas.
The ongoing progress of Burj Dubai is as follows. In March 2007 we were at level 115, in March 2008 we reached 630 m, now the tower stands at a height of 713 m.

This achievement was made possible by a 3 day cycle of construction, which means adding a new floor every three days.

The key factors of a 3 day cycle are:

• Three tower cranes installed for lifting materials up to the weight of 25 t.
• 14 high-capacity construction hoists with a speed of up to 2m/sec are used to move men and material up to the lofty heights.
• 3 concrete pumps specially developed to transport concrete to heights of 601.7 m which is a new world record. The previous record was 450 m at Taipei 101 in Taiwan. Burj Dubai beat that record May 2007 by pumping concrete up to the height of 452 m.

Furthermore, high-strength concrete with the strength of 800 kg/cm² is used, which is three times the strength of concrete employed in typical buildings.

Finally, there are difficulties to monitor the building’s verticality using traditional methods, because of the tower’s unprecedented height. So we devised a new survey method based on GPS coordinates and it is being utilized for the first time in construction history.
Finally the spire erection.

As you can see, this is a tower crane would not be able to reach the top of the spire structure.

So to erect the spire, the blocks of the pinnacle pipe are assembled within the building utilizing the empty space at the center of the building. Then, a lift-up method with hydraulic jacks and steel strands are employed to push the spire pipe up to its final position.

The spire is 128 m long, weighing 560 tons and it will be lifted up 87.8 m from level 126. Thank you!