



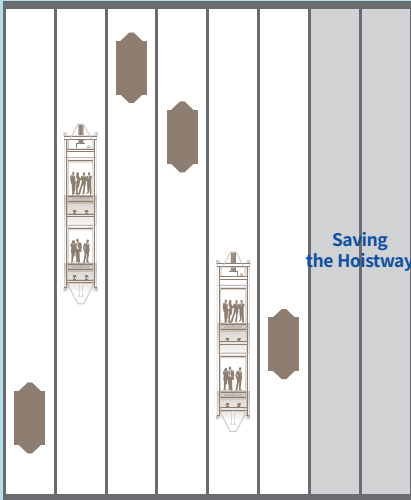


LG U+ Company Building

# The First Operation of Double-deck Elevators in Korea



LG Uplus Company Building



Double-deck elevators saving the hoistway

Hyundai Elevator installed double-deck elevators in the LG Uplus company building in Seoul which have been operational since March. Double-deck elevators link two elevators vertically inside one hoistway and operate on two floors at the same time. Hyundai Elevator developed this type of elevator with its own technology for the first time in Korea in 2009 and installed it in the test tower, Hyundai Asan Tower.

The double-deck elevators in the LG Uplus building are notable for being the first ones to be used in a regular building in Korea, other than test facilities. LG Uplus is one of the biggest mobile communication services providers in Korea. They started construction for their new company building in May 2013, and completed the building with 21 stories above ground and 7 stories below ground in March 2015.

There are two escalators and ten elevators in the LG Uplus building, including two double-deck elevators and four high speed elevators with a velocity of 4m per second.

With two cars linked together, the double-deck elevators operate on two floors at the same time. They are efficient for buildings in which a large number of people move up and down, as they are 1.8 times more effective compared to single-deck elevators. Another advantage is that they increase the usable areas in the building by saving space in the hoistway.

In the case of the LG Uplus building, there are two double-decks and four single-decks (six elevators in total), which means eight cars operate in the hoistway rather than the six cars that would operate if all the elevators were single-deck. To maximize the efficiency of transportation, the HELIAS (Hyundai Elevator Intelligent Access System) system is applied within two double-deck elevators and four single-deck elevators when they operate during peak time commutes, after analysis of the traffic volume. Also, congestion in the lobby area was reduced by dispersing human traffic to the first and second floors, guiding people to use the upper car of the double-deck with a shuttle elevator from the basement car park to the second floor.

The core technology of the double-deck elevator is to enable operation when two cars in one double-deck elevator run between two stories with different heights. Hyundai Elevator reacts to various displacements of the gap between two floors with the 'Floor Distance Adjustable Device'.

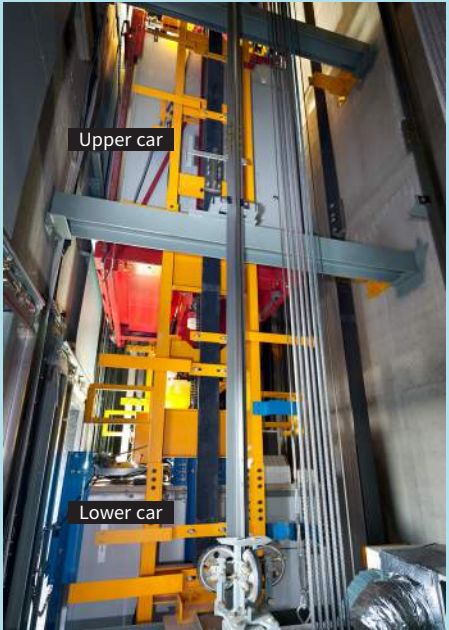


- 1 Traction machine
- 2 Ropes
- 3 Upper car
- 4 Guide rails
- 5 Lower car
- 6 Active guide roller
- 7 Counter weight
- 8 Buffers

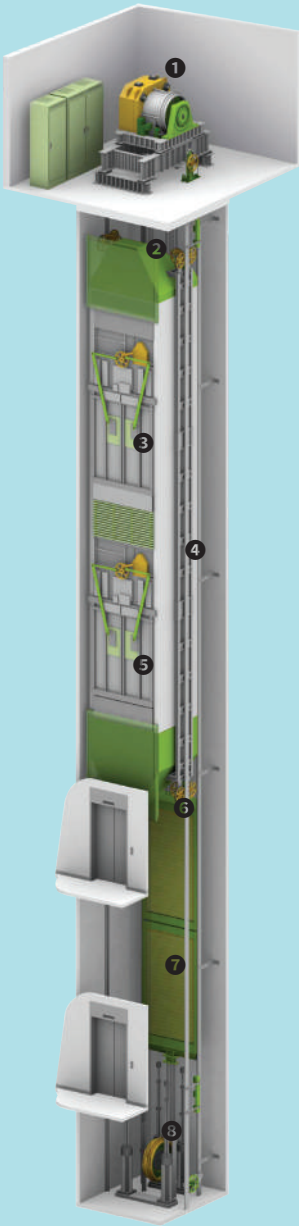
Double-deck elevators installed in the LG Uplus building are one of the best double-deck systems in the world. The high strength chain drive prevents them from slipping, while the accurate control of the Floor Distance Adjustable Device reacts to various displacements of the gap between two floors and keeps a safe speed for different heights of floors. An emergency shutdown device is installed in the main frame of the whole car, and each car has its own emergency shutdown device and buffer which ensure safety.

Besides this, environmentally friendly energy saving technologies such as a permanent magnet synchronous motor and a power revitalization inverter are applied in the double-deck elevators in the LG Uplus building. Various functions are added to enhance convenience such as control operation for earthquakes, and a high tech remote control system (Hyundai Real Time Service) that monitors the operation of the elevators in real time for 24 hours a day, 365 days a year.

The double-deck elevator is a cutting edge product for which only about five companies in the world own the advanced technology. Double-deck elevators in the LG Uplus building began the age of high tech double-deck elevators in South Korea.



The HELIAS system lets you register which floor you want to go to from the platform, and allocates the car that can minimize waiting and onboard times, which improves operational efficiency by up to 30%, increasing convenience for the passengers and saving energy. An LG Uplus HELIAS System ID Card is involved in the intelligent Speed Gate, which calls an elevator to the specific floor where a user works without pressing a button.



Double-deck elevator customized to the location of floors





## Launching the NEW YZER in the Global Market

Hyundai Elevator has launched the Machine Room Less (MRL) 'New Yzer' with a minimally sized hoistway and the shortest pit into the global market. The New Yzer, as a new model of yzers, is expected to save construction time and cost owing to its minimized hoistway and smaller pit. Compared to Hyundai Elevator's existing products, the New Yzer reduces the size of the hoistway by up to 12.5% (for 15 passengers) which maximizes the space efficiency of the building.

Its user friendly interface includes a Smart Indicator with a wide LCD panel to show information about the elevator such as the time and number of floors, CCTV, and energy saving functions. In addition, an air purifier with anions, ultrasonic pest control, and anti-virus handrails provide users with more convenience and comfort. An option that can be applied is a Touchless Foot Button which means, for the first time ever, people can call the elevator by using their feet and without needing to press a button.

Hyundai Elevator launched the New Yzer in the Korean market in 2014. It has been leading the MRL market, and entered the global market this year.

## 2015 Korea Brand Power Index Selected Hyundai Elevator as the No.1 Elevator Brand, for 4 Consecutive Years



Hyundai Elevator was selected as the No.1 elevator brand in the 2015 Korea Brand Power Index following a survey by Korea Management Association Consulting (KMAC). Hyundai Elevator has been No.1 for 4 consecutive years.

In the 2015 survey, Hyundai Elevator was highly commended for brand awareness as well as brand loyalty for its credibility, value for money, and uniqueness. Hyundai Elevator scored 784.5 on the composite index and was selected as No.1 brand power for elevators. It has remained at the top in the trade since 2012.

The Korea Brand Power Index is the first brand assessment model in Korea, and was developed by the KMAC in 1998.

## Hyundai Elevator Joins the UN Global Compact(UNGC)



United Nations Global Compact

Hyundai Elevator has become the first Korean elevator company to join the UN Global Compact (UNGC). UNGC, as the world's largest voluntary corporate citizenship initiative, was set up at the United Nations Headquarters in New York in 2000. It is UNGC members' policy to fulfil their social responsibilities through corporate strategies and corporate sustainability management based on global principles.

Martin S H Han, the CEO and President of Hyundai Elevator Co., Ltd said that Hyundai Elevator is ensuring it will comply with the 10 Principles of the UNGC relating to human rights, labor rules, environment, and anti-corruption, and fulfill its social responsibilities as a global enterprise.

Currently 11,000 companies and organizations from more than 145 nations are members of the UNGC, and about 250 companies and organizations in South Korea have joined the UNGC.

## Hyundai Elevator Campaign, "Don't Hurry, Be Safe."

Hyundai Elevator is conducting a health and safety campaign in 2015 with the slogan, "Don't Hurry, Be Safe"

**Don't hurry  
Be safe**

to nurture a safety oriented culture in the work place, and to prevent accidents among all employees and subcontractors.

'Don't Hurry, Be Safe' encourages safe working without haste, in order to create safe and healthy work environments. The slogan is chanted at the beginning and end of field work to focus attention on safety. This campaign is expected to enhance a sense of safety by promoting staff participation to ensure safe work places without accidents.

## Bright Prospects for Hyundai Elevator in 2015



I'M Investment & Securities in Korea forecast positive prospects for Hyundai Elevator in their business and industry analysis report titled, 'Hyundai Elevator Co., Ltd, Hyundai Merchant Marine Co., Ltd', on March 9th. I'M Investment & Securities forecast that Hyundai Elevator's business profits would

increase because the main competitor in Korea would lose market share, thus easing the competition in the elevator market.

The report also pointed out that there are increasing levels of construction and high-rise buildings in China, as well as rising sales prices. It suggested that Hyundai Elevator's attempts to expand its sales network and the possibility of additional plant construction in China would help to increase Hyundai Elevator's overseas sales. According to the report, the rate of sales increases for new elevator installation in China was at an annual average of 16% until 2012, and is projected to be more than 6% henceforth.

It also projected that Hyundai Elevator's overseas maintenance sales and profits would increase as buildings are aging.

## Logistics Seminar for Chinese Cold-chain Association

On 2nd February Hyundai Elevator held a seminar in Seoul for a delegation from the Chinese Cold-chain Association which is the largest logistics association in China, aiming to expand opportunities to enter the Chinese market. The purpose of the seminar was to understand the current state of technology in China, and to introduce the high-efficiency cutting edge systems of Hyundai Elevator such as cold storage. After the seminar, the delegation visited Dongwon F&B to experience at first hand the cutting edge logistics technology of Hyundai Elevator.



## Hyundai Elevator Holds a Convention for Shared Growth with 260 Partner Companies

Hyundai Elevator held a 2015 convention for shared growth at Banyantree Hotel Seoul on March 3rd. Appreciation plaques were awarded and cooperative agreements signed at the convention, with 300 participants from 260 partner companies in manufacturing, installation, services, and system solutions industries as well as Hyundai Elevator staff. Hyundai Elevator signed an agreement with partner companies in May 2013 to establish a shared growth system, and has run programs such as financial support, pay terms improvement, training and education, recruitment support, and support for productivity improvements.







### Contract for Metropol Istanbul in Turkey

Hyundai Elevator won an \$8,107,000 contract to supply elevators for the Metropol Istanbul in Turkey. In total Hyundai Elevator will supply 127 elevators (7 of which will have a velocity of 6m/sec), and 24 escalators and moving walkways until 2016. Metropol Istanbul, a complex consisting of three buildings of office and housing facilities, and two buildings of commercial facilities, is a large scale project to create a financial hub in Turkey. The contract with Metropol Istanbul represents another business success in Turkey following Hyundai Elevator’s \$13,100,000 contract last year for elevators for the Istanbul underground.

### Contract for Suez Domain’s Auto Parking System in Malaysia

Hyundai Elevator won a \$5,955,000 contract for an auto parking system for a building complex (Block F and G) being constructed by Suez Domain in Kuala Lumpur, Malaysia. The auto parking system in the Suez Domain building complex will be the cart type, with a capacity of 1,187 vehicles. In addition to this new contract, Hyundai Elevator supplied 14 elevators including eight 3.5m/sec elevators and two escalators for the same Suez Domain construction project to Block A and Block D in January and September 2014. The new contract will allow Hyundai Elevator to expand its market share in Malaysia not only for elevators but also auto parking systems in a country where parking space is very limited.



### Contract for Ministry of Finance in Iraq



Hyundai Elevator won a \$4,819,000 contract to supply elevators for the employee apartments of the Ministry of Finance in Baghdad, Iraq. The Financial Audit Department will be located in west Baghdad with 62 buildings consisting of 2,000 households. 126 elevators will be installed. Hyundai Elevator has increased its brand awareness in Iraq since early 2000, by supplying products to Government buildings. In March last year, Hyundai Elevator won a contract to supply the entire quantity of elevators for the Bismayah New City Project in Iraq.

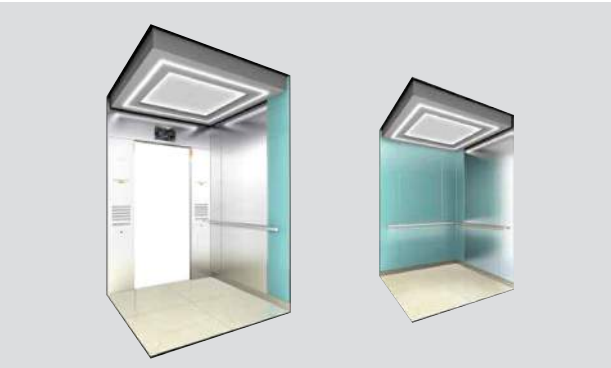
### Elevator Contract for New Affordable Housing in Saudi Arabia



Hyundai Elevator won a \$1,523,000 contract to supply elevators for New Affordable Housing. The housing forms part of the new town, King Abdullah Economic City (KAEC), which is currently under construction in Rabigh, Saudi Arabia. KAEC is a large scale new town construction project in Saudi Arabia that costs \$86 billion, and is projected to be completed in 2020.

### The First Hyundai Elevator Distributor Showroom Opens in Bangladesh

A distributor of Hyundai Elevator in Bangladesh will open an elevator showroom in late March. This is the first elevator showroom in Bangladesh, as well as among Hyundai Elevator distributors. There will be four elevator designs, material samples, hall buttons and indicators in the showroom. The new distributor in Bangladesh was established in Dhaka last November, and we anticipate the showroom will increase brand awareness among local people.



HYUNDAI ELEVATOR

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- Improvement service of elevator technology and safety through technical seminars
- Technical consulting support on application-specific elevator technology

# Operating Life Boats for Emergency Evacuation in a High-rise Building

Min-Seok Kim

Chief Researcher, Hyundai Elevator R&D Center



Increasing attention is being paid to safety measures for high-rise buildings against disasters such as fires and earthquakes due to the rapid increase in high-rise constructions worldwide.

In cases of fires, earthquakes, explosions or terrorism, it is most important to protect residents and ensure life safety in high-rise buildings.

High-rise buildings are equipped with cutting edge firefighting facilities for smoke extraction, emergency stairs and safety zones to protect the safety of people inside the building against disasters.

However these constructional measures have limitations when several thousands of residents need to evacuate to the safety zone swiftly.

Generally, the average speed of evacuation on congested stairs in a building of 3.6 meters per story is estimated to be one minute and 33 seconds (93.8 sec). This means using stairs would take an hour and 20 minutes to escape from the top to the bottom of a building with 50 floors, which indicates there is a need for complementary measures other than emergency stairs.

## Evacuation by Operating the Elevator Life-Boat

Elevators -the only vertical method of transport- can be used as a means of evacuation in a high-rise building. However elevators for emergency use are designed for fire suppression by firefighters, not for escape by residents. From July 2015, all high-rise buildings in South Korea will

be obliged to install elevators that enable escape in cases of emergency. Elevators for evacuation are manufactured as a substitute means of exit in case of fire, with more focus on smoke prevention and emergency equipment.

The elevator life-boat is an advanced concept compared to elevators for escape; in the case of fire, earthquakes or terrorism, it means a special operation of ultrahigh speed elevators to evacuate residents as if they were on life boats on a vessel at sea.

Hyundai Elevator developed the life-boat operation system in 2010, and applied it in the Busan International Finance Center, the tallest building in South Korea, and the company building of the Korea Electric Power Corporation in Naju.

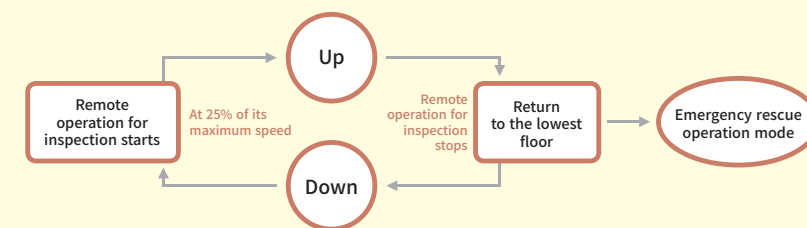
The life-boat operation system controls elevators remotely in cases of emergency, by monitoring the hoistway in real time with CCTV on top of the car, and sending the elevator to the safe floor. When transformed to emergency rescue operation mode, it gets residents onboard and carries them to the safe floor at the maximum speed as a means of rescue from a disaster.

Our life-boat operation system proceeds with two steps. First is a Clearing Trip operation to check if the high speed elevator can perform safely as a life-boat; the second is Life-boat operation to evacuate residents in the building promptly.

## <Clearing Trip>

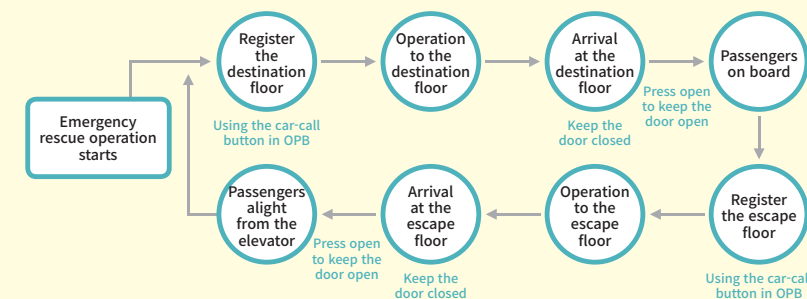
Clearing Trip is a process to check the safety of the elevator operation prior to performing as a life-boat in cases of emergency in a high-rise building. The elevator operates slowly (at 25% of its regular speed) in order to monitor the hoistway.

The elevator is operated up and down by remote control from the emergency room in the building, to analyze the status of machine structures such as rails and ropes as well as platform doors with video taken inside the hoistway through CCTV monitors, and to see the availability of high speed operation of the applicable elevator.



## <Life-boat Operation>

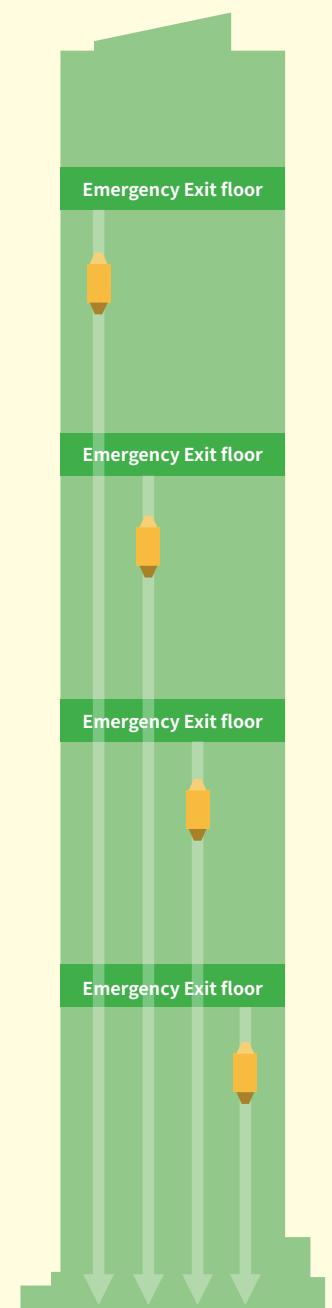
After the Clearing Trip, the elevator returns to the standard floor automatically and holds the door open before life-boat operation. A professional operator gets on the elevator, and repeats the operation to carry residents to the escape floor. The elevator is operated at its regular maximum speed for swift rescue, and the operator monitors the situation in real time and guides residents to escape safely.



Elevators can be important means of transportation to evacuate residents safely and in the swiftest time from high-rise buildings in emergency situations. With the development of life-boat operation, Hyundai Elevator has worked consistently on research activities to keep residents safe and enhance the value of buildings by utilizing the elevator not only for transportation, but also for lifesaving in emergencies.

Elevator manufacturers including Hyundai exploit a variety of technologies for the effective use of elevators in high-rise buildings, as well as develop faster, and safer ultrahigh speed elevator technology to meet the needs of the high-rise era.

These efforts expand the value of elevators beyond being a vertical means of transportation to being able to ensure safety and save lives in the high-rise buildings of the future.





# Tall and Green High-Rise Buildings



Young K. JU, Yong-Yeal Kim  
CTBUH(Council on Tall Buildings and Urban Habitat)

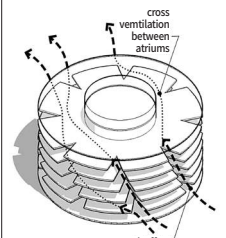
I would like to describe that now tall building’s trends is ambivalent between being ambitious and humble. It sounds contradictory but this is true. Currently, a number of investors want to make their buildings taller as they can and buildings actually are getting taller. However, there have been some technological and environmental limits to reach the aspiration. We are watching that engineers are resolving those limits and generated some branches of trends. I concluded that one of those is breaking technological limit of heights and another one is releasing environmental burden comes from high-rise buildings.

Going taller is a great challenge to build up a monument of engineering. As an example, Burj Khalifa evidently show us technological achievement. Aside from Burj Khalifa, Kingdom tower is under construction in Saudi Arabia. Amazingly, this tower is 1,000m high, and it has 167 stories, 530 apartments, 200 hotel rooms and 3,190 parking spaces. It may be estimated how the tower massive, considering the numbers that came up in former. According to CTBUH, as long as completed buildings, the tallest Top 10 building’s height is averagely 535m, and they have 103.7 stories. Thus, the buildings under 50 stories are not considered as tall buildings. This truth may imply that the trends going taller is already begun.

Furthermore, buildings getting taller need huge amount of energy. This is especially occurred by wide floor plan because it makes buildings disable not to be ventilated and lighted itself. Maybe, people know that conventional houses could function without mechanical ventilation system. Thus, green technologies for reducing building energy consumption are also a big interest for the fact that the building sector is one of the biggest world’s energy consumers and greenhouse gas emitters. According to ‘IPCC(Intergovernmental Panel on Climate Change)



Gherkin Tower



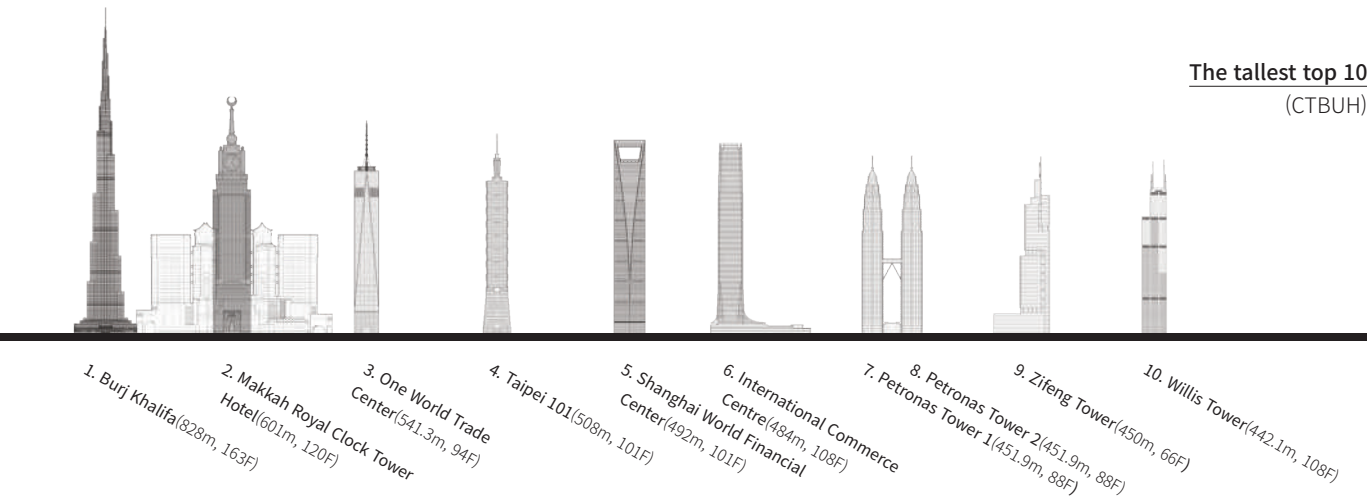
Scheme of Gherkin Tower’s Ventilation

Fourth Assessment Report’, 25% of global primary energy and 60% of electricity are used by buildings around the world. Besides, 33% of the global carbon emissions is from operating buildings. However, current buildings usually rely on electricity to run itself and they are still emitting far much carbon. This is problematic with both environment and maintenance cost.

Many engineers have strived to invent or apply energy saving systems passively and actively on buildings. As an example of passive system, Gherkin building allows use of natural ventilation with circular floor plan having triangular atrium adjacent to the exterior wall. The atrium is designed spirally going up to full height of the building and air is ventilated along the atrium. The plan set up to control the building’s natural ventilation is as follows: when the outside temperature rise above 24°C~26°C in summer, the openings will be automatically shut down and the building will become fully air-conditioned.

As an example of active system, integrated wind turbines are used since tall buildings are exposed easily at higher altitude and stronger wind. Therefore, they have much more potential to produce wind energy than shorter buildings. Shape of the buildings is modified to improve incorporating wind speed, then enhance efficiency of electricity production. The Bahrain World Trade Center shows representatively how integrated wind turbines effective. The wind turbines installed in a gab between its two separate towers and it faces predominant wind direction. Consequently, those plans maximize the energy generation and it covers up to 15% of building’s power use.

The FKI (Federation of Korean Industries Head Office Building) constructed about an year ago in Seoul is an example of green technologies. It includes various



The tallest top 10  
(CTBUH)

environment-friendly skills saving and making energy. Firstly, integrating photovoltaic panels into the spandrel areas on facades makes electricity and 30 degree angle maximizes the amount of energy collected. Moreover, the geothermal system generates subsequent electricity and ice thermal storage system mitigate cooling load. Garden space makes offices naturally lighted and curtain walls infrared-absorbing glass applied reduce cooling and warming load.

Not only the mentioned examples but also plenty number of green technologies are consisting branches of tall building’s trends. With reflection of it, the technologies have been tried to break technological limits. If institutional and legal system support those more, it would stimulate to make a breakthrough of the limits.



Bahrain World Trade Center



Facades of FKI

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## Hyundai Elevator Technologies for high-rise buildings

### THE EL 1080, an ultra-high speed elevator

THE EL 1080's ultra-high speed nine-phase synchronous motor enhances traction and safety; its streamlined capsule cage, vibration control system, and atmospheric pressure controller provide outstanding comfort which is optimized for high-rise buildings. THE EL 1080 is the best in the world, with a maximum speed of 18m per second.

### Double Deck

Two elevators connected vertically are simultaneously run to offer 1.8 times greater transport capability. This is particularly effective for high-rise buildings that need to transport large numbers of people. Fewer hoistways mean lower construction costs and more available floor space.

### Destination selecting system(HELIAΣ : Hyundai Elevator Intelligent Access System)

This is a system where you register your destination floor from the landing and the most appropriate elevator is automatically serviced. This enables maximum operational efficiency and energy saving by transporting people to the same destination in one elevator, and improves the traffic volume of high-rise buildings.

### Energy recycling inverter

The energy recycling inverter reuses energy that is generated during operation, resulting in increased energy efficiency of up to 77.5%. There is no charging or braking resistance area, which minimizes carbon emissions and features leading green technology. The energy recycling inverter presents environmentally friendly technology and energy efficiency for elevators in high-rise buildings.





01 Panoramic view of Hyundai's Shanghai plant 02, 03 Hyundai Shanghai showroom 04 Inside the Shanghai plant 05, 06 The Task Force Team's visit to Korea

# SHANGHAI HYUNDAI ELEVATOR CO., LTD

China, with a population of 1.3 billion and a territory 44 times bigger than the Korean Peninsula, is the world's largest elevator market; the number of new elevator installations has reached 500,000 per year.

Hyundai Elevator established Shanghai Hyundai Elevator Co., Ltd as a joint company in August 1993, owning a 51% stake. The remaining 49% stake was owned by a Chinese elevator and escalator manufacturer called Changjiang Elevator Co., Ltd. This enabled Hyundai Elevator to enter the Chinese market with a local plant for export and domestic markets in China. In order to increase domestic sales, 17 branch offices across China have been strongly engaged in marketing since 2012.

Shanghai Hyundai Elevator Co., Ltd revamped its showroom and test tower in January 2013. The refurbished showroom has an exhibition room consisting of a promotion center, energy, ultrahigh-speed, and design centers, and displays elevator products, safety devices, power saving simulators and other devices to support the company's promotions and customer consulting. The company also invested heavily in the test tower, installing new elevators

## Company Profile

Date of Foundation  
: August 10th, 1993

Number of Employees  
: 688 (as of January 2015)

with velocities of 7m, 4m, and 1.75m per second, and a destination selecting system to book which floor to go to. As a result, Shanghai Hyundai Elevator Co., Ltd increased the volumes of contracts and production by more than 50% compared to the previous year.

After Hyundai Elevator secured a 100% stake in Shanghai Hyundai Elevator Co., Ltd in January 2014, it has intensified its efforts to increase market share in China. It has also been working to build a second plant in Qingpu District, Shanghai.

Shanghai Hyundai Elevator Co., Ltd's existing plant currently has a capacity of 7,200 products per year. The second plant is projected to produce more than 10,000 elevators, escalators, and moving walkways per year. Site selection for the second plant is in progress around Qingpu District where the first plant is located. When the second plant is completed, we anticipate it will create a synergy effect with the first plant to establish a more efficient production system.

In addition to this, Shanghai Hyundai Elevator Co., Ltd is diligently working on improving management processes. Outside consultants were called in to suggest improvements during October and November 2014, and a task force team (TFT) was set up on January 19th, 2015, to improve the business' management. The TFT consists of 27 people from the departments of sales, production/purchase, finance/accounts, and human resources at both Shanghai Hyundai Elevator Co., Ltd and Hyundai Elevator headquarters. TFT is working on a progress plan aiming to improve the work processes of each department in accordance with localization.

Shanghai Hyundai Elevator Co., Ltd is dedicated to expanding sales in the Chinese market, the biggest elevator market in the world, and constantly striving to improve its working environment for staff as well as processes of whole areas of elevator production such as manufacturing, production, purchase, and technical development.



# Features of The Hyundai Asan Tower



## Completion Date

April 15th, 2009



## Height & Size

205.2m in height, 15m below ground, total architectural area 4,351m<sup>2</sup>

## Design

The column, a basic structure of the test tower, is triangular in shape which symbolizes the Hyundai Group, with a figuration of Hyundai Elevator soaring to the future.



## Conducted Tests

Experiments are conducted on the reliability and stability of the components related to the ultrahigh speed system such as vibration, noise, temperature, and pressure. Also there are developments and tests for double-deck elevators and the elevators with a velocity of 18m per second.



## Structure

As a ferroconcrete construction with a triangular column, the upper part in which the elevator machine room is located is circular in shape. The Chung Mong-hun R&D Center is located on the first floor which also includes an exhibition room, promotion center, and research facility. There is a sky lounge on top of the building with 360 degree views.



## The Meaning of the Name

To honor the noble entrepreneurship of the late Chung Ju-yung, the honorary president, who built Hyundai Group into a global enterprise, and to develop Hyundai Elevator into a global company, the tower is named after the pseudonym of the honorary president, Asan.



## Number of Visitors

Since the completion of construction in 2009, a total of 26,515 people have visited the Hyundai Asan Tower up to February 2015. To date in 2015, 245 people on average have visited the Tower each month. Employees and their families visited the Tower in the year of opening in 2009; since then it has been open to selected customers such as construction companies, representatives of the residents, the press and other partners, except on Children's Day on 5th May, 2011 when it was open to public. 75% of the visitors have been Koreans and 25% foreign nationals.



## THE EL1080, the Fastest Elevator in the World

THE EL1080 was introduced as 'the fastest elevator on earth' with a velocity of 18m per second in the special report, 'Fastest on Earth' in 2012, from the IEEE Spectrum Radio of 'IEEE (Institute of Electrical and Electronics Engineers)', based in the US, which is one of the biggest electrical and electronics engineers' associations in the world. THE EL1080 is renowned for its speed, administrative distance, and functions that correspond with the world's best building specification.



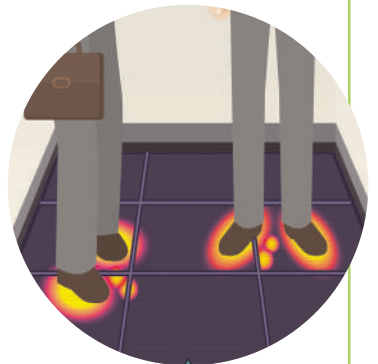
## THE EL600D, Double-deck Elevator

THE EL 600D is the first double-deck elevator in Korea, installed by Hyundai Elevator in 2010. The velocity is 10m per second, and a Floor Distance Adjustable Device is applied so that accurate control is available even when the heights of floors are inconsistent.



## Handwriting Operation Panel

Users can handwrite the number of the floor they would like to go to on the touch screen, instead of pressing a button. IT such as touch screens and touch pads are combined with elevators, and elevator cars without buttons differentiate the building by having a tidy and sophisticated atmosphere.



## The Shuttle Elevator with a Mark of Territory

In the shuttle elevator that runs from the 50th floor to the sky lounge, there is a special device on the bottom that recognizes shadows of the passengers and turns on the lights at the bottom. The lights on the floor are designed to mark the personal space of each individual passenger, in order to relieve anxiety about the lack of personal space in an enclosed place, as well as to provide some entertainment in an otherwise bland setting.



## Foot Button

The elevator recognizes the movement of the users' feet and calls the car, which is useful when hands are occupied with luggage or for those with disabilities. Hyundai Elevator has developed and applied this technology for elevators for the first time in the world.



## Anti Virus Touchless Button

Touchless buttons are able to recognize information without being touched. They are expected to reduce the possibility of transferring bacteria and viruses which are more likely to happen when a large number of people touch the buttons. This is particularly desirable for elevators in hospitals or multiuse facilities.

## Special Elevators in the Hyundai Asan Tower

