



# ADVANCED DOUBLE DECK ELEVATOR

THE EL DUO

# Two vertically connected elevators in one hoistway

## Differentiated moving solution of Hyundai Elevator

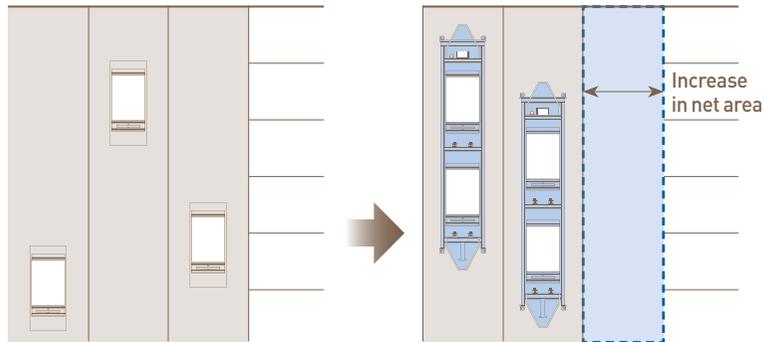
### THE EL Duo

It is the next generation elevator that enables space efficiency improvement (increase in net area), increase in rental income and construction cost reduction by operating two vertically connected elevator cars in one hoistway.



► Double deck elevator, large capacity transport system based on a new method  
By operating two vertically connected elevator cars in one hoistway and servicing two floors simultaneously, transport capacity can be increased by up to 1.8 times standard capacity.

- Utilize space better thanks to fewer number of elevator hoistways
- Possible to design a building freely with the Floor Distance Adjustable Device
- Minimize noise and vibration by designing aerodynamic capsule cage (speed of more than 8 meters per second)



Single Deck

THE EL DUO

► Installation Site of THE EL DUO

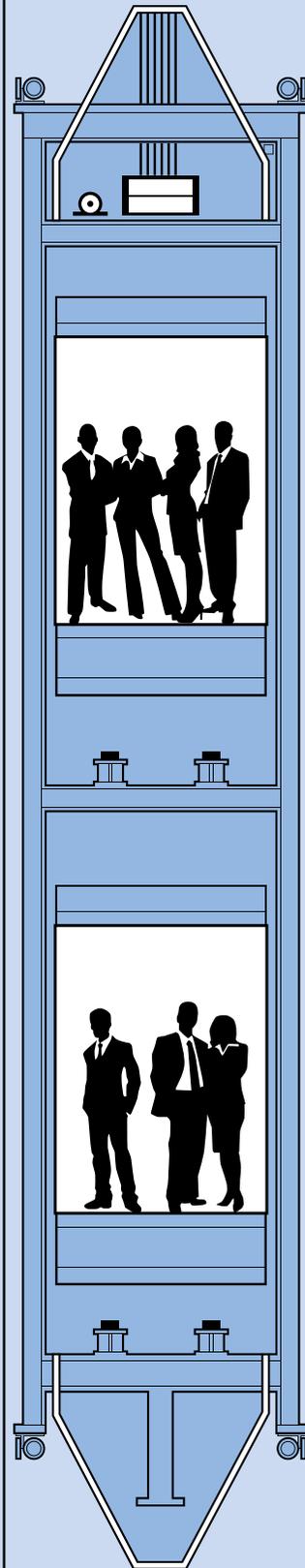


LG U-PLUS office building in yongsan



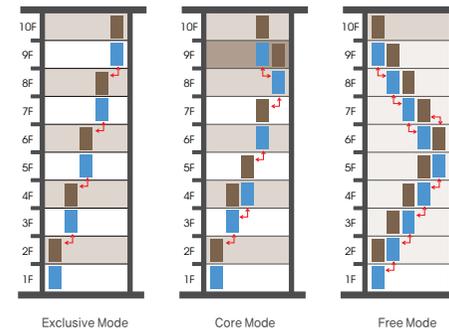
Hyundai Asan Tower





## Three Modes of THE EL DUO Operation

Flexible operation is possible with three modes (Exclusive, Core and Free Mode) depending on the characteristics or traffic of a building.



- Exclusive Mode**  
 Operation mode under which upper elevator car stops only at even number floors and lower elevator car stops only at odd number floors.
- Core Mode**  
 Operation mode under which both upper and lower elevator cars stop at a designated floor.
- Free Mode**  
 Operation mode under which both upper and lower elevator cars stop at every floor except for the lowest floor for an upper elevator car and the highest floor for a lower elevator car.

## HELIAS (Hyundai Elevator Intelligent Access System)

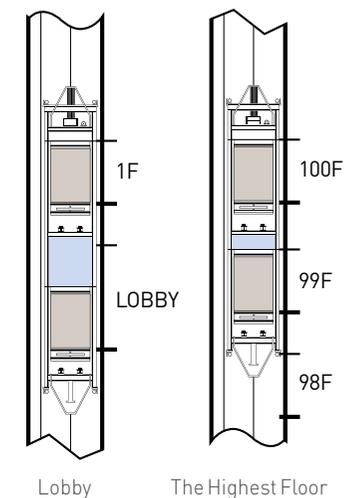
The best operating system provides a differentiated elevator service improving the value of a building.

- Optimized operating system by selecting the elevator that can reach a destination floor fast automatically
- Increase elevator operating efficiency and maximize energy saving effect
- Improve convenience and security functions by linking building access card/identification card to elevator
- The best design recognized by winning "iF Design Award"



## Floor Distance Adjustable Device

The Floor Distance Adjustable Device is applied to adjust floor height of upper and lower elevator cars in case of different floor heights in a building providing more freedom to architectural design.



Lobby

The Highest Floor

## N.V.H System

(Noise, Vibration, Harshness)

### Aerodynamic Capsule Cage Design

Smooth passenger experience with less noise and vibration is provided by designing aerodynamic capsule that is applied to an aircraft to minimize air friction.

### Air Tight Car Door System

This system is very effective for noise insulation and air pressure control as the door is designed to be closed to the direction of inside the cage completely sealing the entrance which is the major source of noise.

## Safety Device

### Emergency Stopping Device

This device is attached to the bottom of an elevator car and has an excellent breaking force as it holds the guide rail with a wedge type. It provides an excellent breaking performance and safety with good heat and wear resistance by using special ceramic friction material that can maintain frictional force in temperature higher than 1,000°C.

### 3-stage Telescopic Oil Buffer

The 3-stage telescopic buffer is applied to reduce shock to an elevator car in case where an elevator reaches pit after passing through the lowest floor.

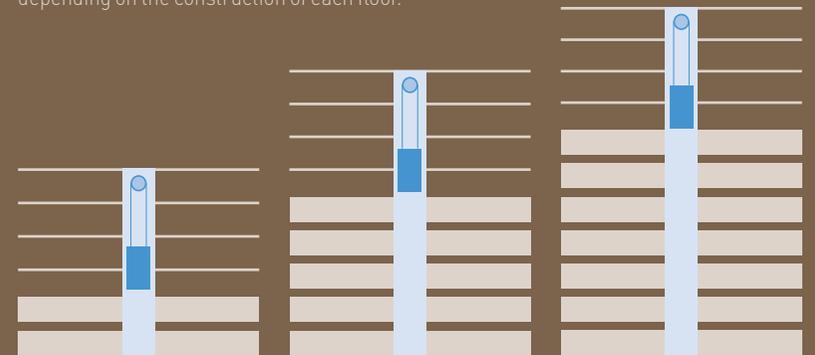
The efficiency of using pit space is improved as the height of the buffer can be reduced with three stages.



# The Best Choice to Reduce Construction Period of High-rise Building! Hyundai Jump Elevator

## What is Jump Elevator?

This elevator can be used for construction purpose by installing this elevator in the initial construction phase. It is optimized for construction as machine room goes up step by step depending on the construction of each floor.



## Benefits of Jump Elevator

### ▶ Reduction of Construction Period

- Reduce construction period by up to 3.5 months compared to commonly-used method
- Reduce the finishing work period with free execution of the work on the outside of the building (including Curtain Wall)



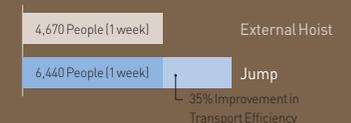
### ▶ Reduction of Construction Cost

- Reduce cost by 20% compared to the use of external hoist: Reduction of rental fee, labor cost and incidental expenses



### ▶ Improvement of Transport Efficiency

- 35% increase in transport efficiency compared to external hoist
- Operable for 365 days a year regardless of weather



### ▶ Energy Saving

- Improve energy efficiency and reduce cost compared to external hoist
- Increase bidding competitiveness with eco-friendly construction system



\* External Hoist - 2000kg/100rpm Induction Motor 70kVA (based on the power factor of 0.85)

\* Jump - 2000kg/150rpm Synchronous Motor 30kVA (based on the power factor of 0.95)

### ▶ Improved Safety

- Provide safe construction environment with the use of hoistway inside the building (preventing the fall of materials)
- Possible to conduct weather-proof operation as it is installed inside the building
- Excellent passenger experience with the use of traction machine dedicated to an elevator
- Secure safety by applying anti-crash device (emergency stopping device)

\* External Hoist: Transportation device for construction purpose installed outside of a building

\* Based on 250m, 60 floors (compared to external hoist)