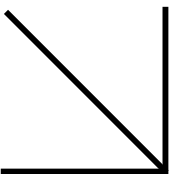


TWIN

2 cabs, 1 shaft,
0 crowds

TK ELEVATOR
MOVES PEOPLE -
THE FUTURE OF
URBAN MOBILITY



MOVING YOU INTO THE FUTURE

City populations are expected to increase by nearly 2.5 billion inhabitants by 2050. And each day, those people will need to move, making efficient mobility in buildings no longer a luxury but an absolute necessity.

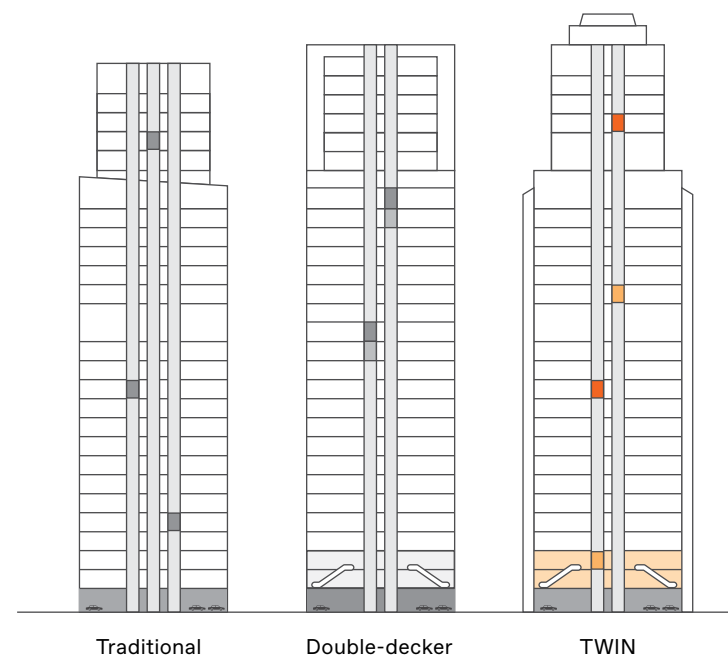
At TK Elevator we have engineered TWIN, a solution to maximize available space, minimize wait times and keep people – billions of them – safely on the move.

What is TWIN?

TWIN takes mobility to the next level by intelligently running 2 cars independently in each shaft. The result is fewer shafts for more cars and a big increase in capacity.

Unlike double-decker elevators, TWIN accommodates variable floor heights and cars only stop at the floors needed for passengers to embark or disembark.

This means that TWIN offers more flexible building design options and significantly improves energy efficiency - boosted by the option to park empty cars during periods of low-traffic demand.





TWIN

2 cabs, 1 shaft, 0 crowds

Designed for premium high-rise buildings, TWIN is the only elevator system with two cars that move independently in one shaft. TWIN is a unique and innovative elevator that makes the most efficient use of available space, reduces energy use, and minimizes total time to destination, while always keeping people moving safely.



Increases revenue

TWIN elevator with two independent cars in one shaft saves space and increases rentable area.



Maximizes efficiency

Equipped with AGILE Destination Control (DSC), TWIN elevator minimizes average travel time to destination and increases handling capacity.



Gives peace of mind

Designed to TK Elevator's highest German standards ensuring maximum passenger safety.

DESIGNED FOR

- Premium high-rise buildings
- Offices, hotels, hospitals, universities, mixed-use buildings
- New installation or modernization

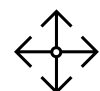
SPECIFICATIONS

- Max. travel height: $\leq 250\text{m}$
- Max. number of floors: ≤ 60
- Rated load: 2,500kg
- Rated speed: $\leq 8.0\text{m/s}$

Increases revenue

More rentable space and lower cost

TWIN elevator technology reduces the number of shafts needed. With fewer shafts, building core size can be reduced up to 50% and thus increase rentable space.



Handle more traffic

Whether used in new buildings or as part of a modernization project, TWIN can transport up to 40% more passengers.



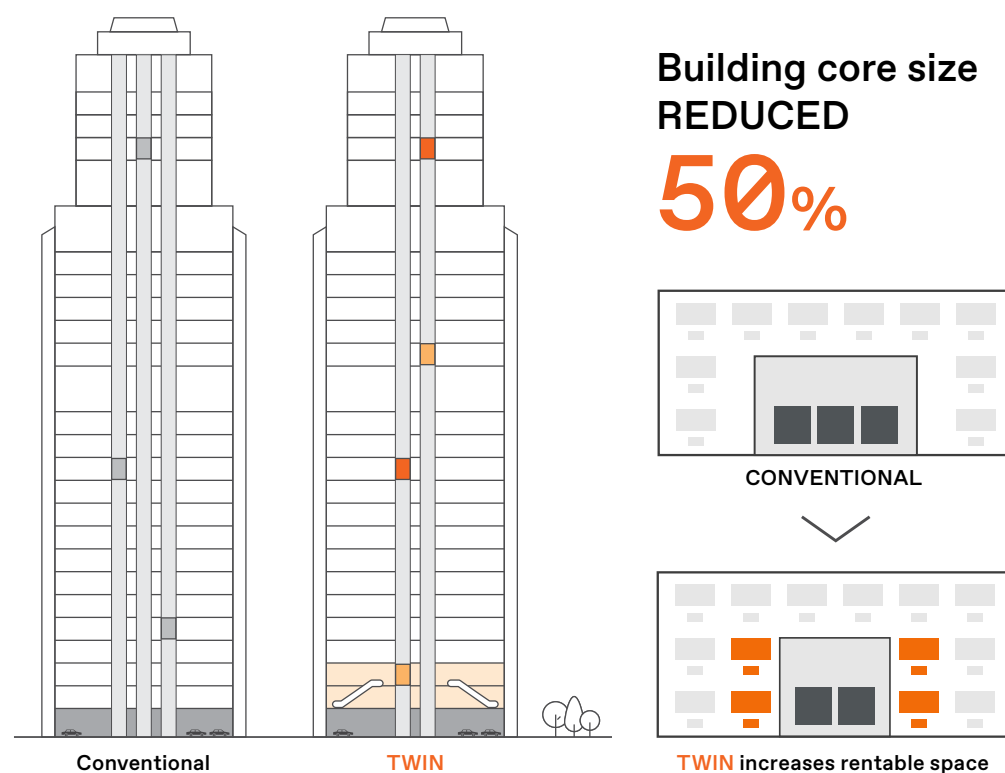
Save money

TWIN cuts labor and material expenses by sharing a single shaft, guide rails and landing doors. Just one of the ways that TWIN offers efficiencies long into the future.



Reduce energy consumption

Unlike a double-deck elevator system, TWIN can park one cab while the other stays in operation. So when passenger volumes are low, no energy is consumed moving empty cars. Furthermore, all TWIN elevator systems can be equipped with an energy recovery function which can feed around 30% of the energy generated by braking back into the building's power grid.



MAXIMIZES EFFICIENCY

AGILE - Make the smart move to greater efficiency

Designed to maximize traffic flow, AGILE Destination Control optimizes elevator efficiency, enhances building security and ensures that every journey is smooth and stylish.

Improving the passenger experience

Traditional elevator operation

Passengers crowd into lobbies and push elevator buttons, which only register limited information - just single "up or down" requests. Then they board the first elevator to answer the call.

This leads to crowded cars, additional stops and passengers left behind to wait for the next elevator.



Operation with AGILE – Destination Control

Passengers use a kiosk to select their floor. The intelligent dispatching software collects their information, analyzes their requests, gauges traffic demand and groups them based on similarity of destination.

AGILE Destination Control intelligently assigns passengers to elevators, reducing waiting and traveling time by 25%, while increasing capacity by 30%. The result is less crowding, fewer stops, efficient use of elevator capacity and more satisfied passengers.



01

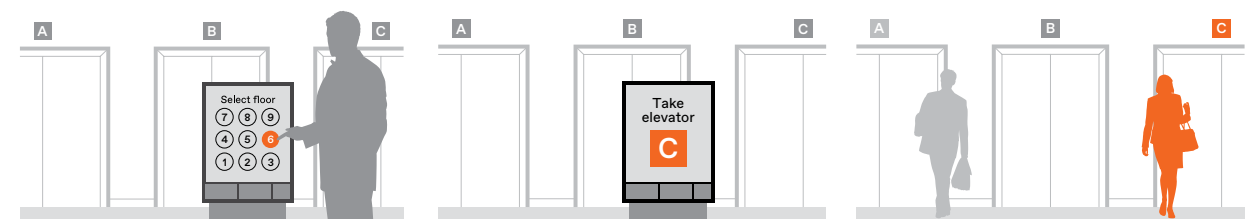
Passengers use the kiosk to select their floor.

02

AGILE clearly directs each passenger to an assigned elevator.

03

Passengers board the assigned elevator that transports them to their destination fastest.



Gives peace of mind

TWIN's stringent safety measures make two cars moving independently possible and safe

Four safety levels to prevent two cars in the same shaft from getting too close to one another:



01

Intelligent allocation of calls via DSC

Minimum safety distance between cars is always maintained. Constant monitoring of each car's movement, direction, speed, and destination.



02

Forced slow-down

Each elevator controller monitors the movements of both cars in one shaft. If the minimum clearance is compromised, both cars are slowed and will then stop at the next landing.



03

Emergency stop function

If car separation is lower than the defined safety value, an independent control system will interrupt the electrical safety circuit and the operating brakes will be applied, stopping the car movement.



04

Automatic engagement of the safety gear

If the independent safety system detects further reduction in car separation, the safety gears of both cars are immediately applied.

- TWIN complies with ASME 17.7/CSA B44.7. A17.7 is specifically intended for new elevator technology and practices.
- Level 3 + 4 safety levels are monitored by an independent control system according to the Safety Integrity Level 3 (SIL3), the highest safety classification of the European Functional Safety Standards – the same safety level used in components for fly-by-wire systems (Airbus, Boeing 777), automatic train systems and the chemical industry.
- Fully certified by the German TÜV inspectorate – the most stringent and rigorous safety standard an elevator can attain.
- CE Type certified.
- System satisfies the regulations in accordance with elevator directive 95/16/EC and EN 81-1 with approved deviations and is EN 81-A3 compliant.



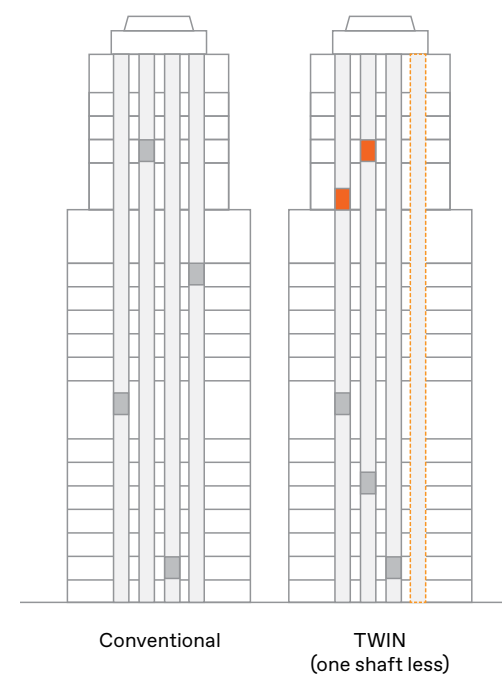
Move more with less

Whether used in new buildings or as part of a modernization project, TWIN can transport up to 40% more passengers.



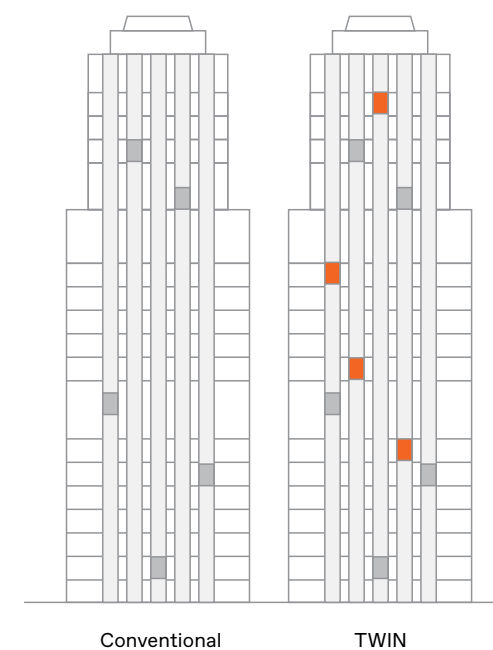
TWIN for new installations

- Significantly more handling capacity with fewer elevator shafts compared to conventional elevators.
- 2 independent cars in one shaft reduce the building core.
- Thus reducing construction cost in both labour and materials for the developer and contractor.
- Increase your rentable floor space.
- Increase the rental income for the owner.



TWIN for modernization projects

- Transport more passengers with two elevator cars in one shaft.
- Replace elevators that can no longer handle the building capacity and passenger comfort demands.
- No need to build new shafts and possibly reduce the number of elevator shafts in use.
- Free up space to route data technology or install an air-conditioning system.



TWIN makes the case

New installation

St. Botholph Building, London

Challenge

Minimize the space needed for elevators to increase leasable office space.

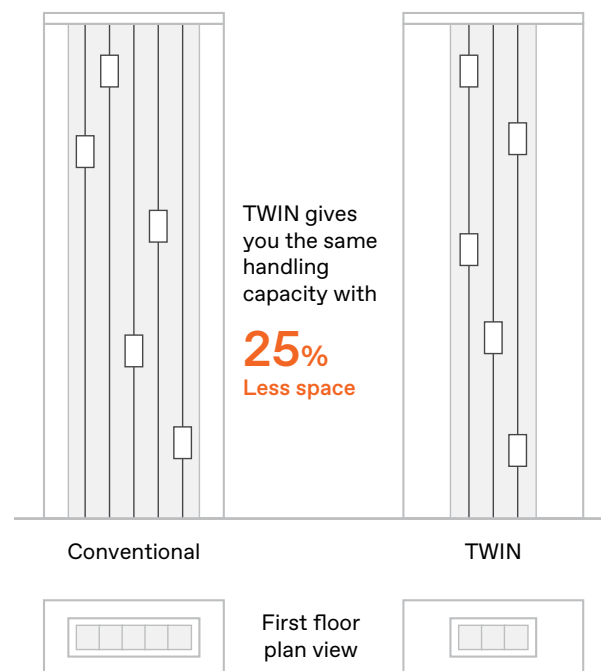
Solution

Compared with conventional elevators, TWIN elevator systems requires less space of up to 29,000 square feet - an increase of 6% of rentable space.

The 13-floor office, St. Botholph Building in London houses eight TWIN elevators. In the planning phase, it was determined the building population of 5,000 people would need two groups of six to eight conventional elevators and the construction of 14 shafts. But the property stakeholders did not want to sacrifice the space needed to house two elevator banks.

Next, a double-deck installation was considered. However, that undesirable alternative required a large amount of shaft head height, heavy cars and meant that all floors served would have to be the same height.

By using eight TWIN systems, only eight shafts were required and less power was needed to move lighter cars. There were also less space requirements in the shaft head and machine rooms, which increased leasable space and reduced construction cost.



Higher handling capacity, smaller area



Modernization

Bayshore Hotel, Dalian, China

Challenge

During peak hours, the hotel elevator operates at maximum capacity, resulting in long waiting times.

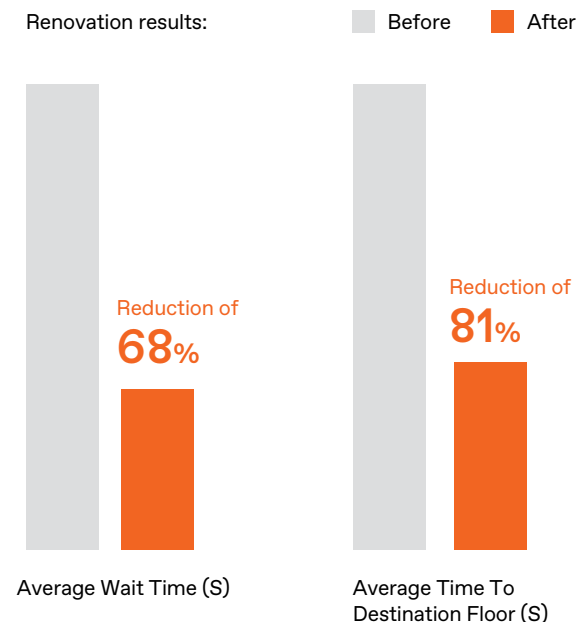
Solution

Replace the existing three elevators in the hotel with two TWIN elevators with upper car speed of 4m/s and lower car speed of 2.5m/s and one 2.5m/s single-car elevator.

Conclusion

Without using more space for new elevator shafts, this project greatly increased the carrying capacity of the three elevator shafts, and the elevator transport efficiency rate was significantly increased.

In circumstances in which additional elevator shafts cannot be added, this type of renovation project can maximally improve a building's vertical transportation capacity while also improving the building's appeal and charm.



TWIN has a greater passenger handling capacity while reducing waiting times

TECHNICAL SPECIFICATIONS

1.1 STANDARD

RATED LOAD (KG)	RATED SPEED (UPPER CAR/ LOWER CAR)	TRAVEL HEIGHT (M)	SHAFT SIZE (SW X SD)(MM)	CAR SIZE (CW X CD)(MM)	OVERHEAD HEIGHT (MM)	PIT DEPTH (MM)	MACHINEROOM SIZE (CW X CD X HD) (MM)
1000 Modernization	2.5 / 2, 1.75	50 - 100	2200 × 2300	1600 × 1400	CH+2850	1650	2700 × 4300 × 3050
	2.5 / 2.5	75 - 100	2200 × 2300	1600 × 1400	CH+2850	1950	2700 × 4300 × 3050
	4.0, 3.5, 3 / 2.5	75 - 100	2200 × 2300	1600 × 1400	CH+3200	3100	2700 × 4300 × 3050
	4.0, 3.5, 3 / 2.5	100 - 150	2350 × 2300	1600 × 1400	CH+3200	3100	2850 × 4300 × 3050
1150 Modernization	2.5 / 2, 1.75	50 - 100	2400 × 2300	1800 × 1400	CH+2850	1650	2900 × 4300 × 3050
	2.5 / 2.5	75 - 100	2400 × 2300	1800 × 1400	CH+2850	1950	2900 × 4300 × 3050
	4.0, 3.5, 3 / 2.5	75 - 100	2400 × 2300	1800 × 1400	CH+3200	3100	2900 × 4300 × 3050
	4.0, 3.5, 3 / 2.5	100 - 150	2550 × 2300	1800 × 1400	CH+3200	3100	3050 × 4300 × 3050
1250	2.5 / 2, 1.75	50 - 100	2600 × 2250	1950 × 1400	CH+2850	1650	3100 × 4450 × 3500
	2.5 / 2.5	75 - 100	2600 × 2250	1950 × 1400	CH+2850	1950	3100 × 4450 × 3500
	4.0, 3.5, 3 / 2.5	75 - 100	2600 × 2250	1950 × 1400	CH+3200	3100	3100 × 4450 × 3500
	4.0, 3.5, 3 / 2.5	100 - 150	2600 × 2250	1950 × 1400	CH+3200	3100	3100 × 4450 × 3500
1350	2.5 / 2, 1.75	50 - 100	2600 × 2320	1950 × 1500	CH+2850	1650	3100 × 4520 × 3500
	2.5 / 2.5	75 - 100	2600 × 2320	1950 × 1500	CH+2850	1950	3100 × 4250 × 3500
	4.0, 3.5, 3 / 2.5	75 - 100	2600 × 2320	1950 × 1500	CH+3200	3100	3100 × 4520 × 3500
	4.0, 3.5, 3 / 2.5	100 - 150	2600 × 2320	1950 × 1500	CH+3200	3100	3100 × 4250 × 3500
1600	2.5 / 2, 1.75	50 - 100	2600 × 2550	1950 × 1750	CH+2850	1650	3100 × 5050 × 3500
	2.5 / 2.5	75 - 100	2600 × 2550	1950 × 1750	CH+2850	1950	3100 × 5050 × 3500
	4.0, 3.5, 3 / 2.5	75 - 100	2600 × 2550	1950 × 1750	CH+3200	3100	3100 × 5050 × 3500
	4.0, 3.5, 3 / 2.5	100 - 150	2600 × 2550	1950 × 1750	CH+3200	3100	3100 × 5050 × 3500

Note: CH - Car height
*Rated load of 1000/1150kg should be used for renovation cases. If elevator is newly installed, rated load of 1200kg should be used for shaft and car specifications.
*Please contact local branch if speed needs to be adjusted to ≥4.0m/s.

1.2 CAR

CONFIGURATION	STANDARD	OPTIONAL
Car Depth (mm)	See Table Above	/
Car Height (mm)	2400 (1000 kg), 2600 (1250 - 1600kg)	2200, 2300, 2500, 2700, 2800, 2900, 3000
COP Quantity	1	2
COP Position	Front	/

1.3 DOOR

CONFIGURATION	STANDARD	OPTIONAL
Type	K400/S400	K400/S400, K8/S8
Door Width (mm)	900 (1000kg), 1100 (1250 - 1600kg)	1000 (1150kg), 1200 (1250 - 1600kg)
Door Height (mm)	2100	2000, 2200, 2300, 2400, 2500, 2600, 2700
Materials	Power coated steel	Hairline stainless steel 304, Mirror stainless steel 304
Car Door	Narrow	Wide
Sill	Aluminum	/

YOUR INNOVATION PARTNER

elevators and escalators in service

countries serviced

1,200,000 100+

employees

50,000+

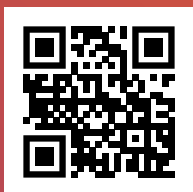
service available for customers

locations

24/7 1,000+

service technicians

24,000+



WWW.TKELEVATOR.COM