
# NYC Hotel Intercontinental Subway Entrance

*by Douglas W. Boydston*

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Developer Tishman Hotel & Realty LP, in developing property at 44th and 8th streets in New York City (NYC), was required to provide accessibility upgrades to the existing subway entrance. This entrance was partially underneath the corner of the tower the company was going to construct for Hotel Intercontinental. Accessibility could not be achieved by using one commercial elevator because of existing site conditions, including the location of a sewer line running through the space beneath the intermediate landing, the structure required to support the sidewalk above and the location of tracks underneath part of the space. Thus, it took two pieces of equipment to achieve full accessibility.

Handi-Lift, Inc. was hired by general contractor John Civetta and Sons, Inc. to install a lift where there was limited overhead, limited maneuvering space for approach and a max-

imum pit depth of 2 in. The unit would need to be serviceable in the demanding NYC subway system, where standard vertical platform (wheelchair) lifts just are not capable of holding up. Factors such as metal dust, power washing and 24-hour-a-day use by not only those with mobility impairments, but also by anyone who wants to take a ride means that to put a vertical platform lift into this environment requires a new performance standard. Designing to minimum safety standards just is not sufficient to meet the demands of this environment. The Metropolitan Transportation Authority (MTA) insists on a level of serviceability and performance that Handi-Lift had not encountered in other markets for accessibility equipment.

Heights Elevator, Inc. installed a commercial elevator

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Top: The Vandalism Proof Products T1250 ADA phone

Above: Lift-U's shop, where the system was mocked up

Left: The access panel

Opposite page: Side view of ramp leading to lift


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that runs from the sidewalk outside to the intermediate landing. A vertical platform lift from that intermediate landing then provides service down to the track level. This keyless vertical platform lift was one of the first ever installed in an active NYC subway station.

Lift-U manufactured the elevator, which features a cantilevered, twin-screw, direct-drive system that was beefed up to meet the project specifications, including a 10,000-cycle test under full load. The custom stainless and glass enclosure was designed by InDetail, Inc. and built by INA Building Shop, Inc. in Brooklyn, New York. Before bringing it to the site, Handi-Lift mocked up the entire system at Lift-U's shop.

Plan and elevation dimensions had to be accurate down to the 1/4 in. so the lift could be released into production in time to meet the construction schedule. The deadline necessitated a release into production long before finished concrete was poured. The difficulty came in predicting the elevator and controlling the schedule of installing steel and pouring concrete. Even with care and planning, the floor-to-floor finished area increased by 1 in. Eventually, Handi-Lift was able to make the necessary adjustments to the lift system in the field.

The enclosure frames are 2-in. stainless tubing with channels for 1/2-in. safety glass. The glass is set to the inside of the frames, so there are no pinch points on the inside of the enclosure (as required by code). The glass can be removed from the outside if it needs replacement. The MTA specification also included anti-graffiti film on both sides of all glass panels.

The aforementioned drive system was chosen by MTA because it is a direct drive without the use of hydraulics or roped hydraulics. The motor and controller with uninterruptible power supply are contained underneath the upper landing sill. The platform itself is structural, and the drive system picks the lift up from the car sides. The deck is 3/4-in.-thick aluminum attached to the bottom of the car sides, enabling installation of this heavy-duty lift in only a 2-in. slab depression.

All the electrical connections

to the remote hall stations, phone line, MTA LiftNet monitoring system, electrical power source, etc. had to be in conduits laid in before the concrete was poured, so all electrical connections were terminated in the space under the upper landing sill, hidden from view. Service of the unit requires removal of the stainless panel under the upper landing from inside the car or under the car if in the upper landing position.

The AC/DC disconnect for the power source with battery backup system and disconnect for the power door operators with a ground fault interrupter outlet were placed in an access panel at the upper landing for ease of access and service. The 2-HP drive motor is totally enclosed non-ventilated and three-phase. The control system is a variable-frequency drive with a programmable-logic controller.

The lift is configured for two stops, straight through, for a travel of 51.5 in. at a speed of 0.10 fpm with a 750-lb. capacity. The Americans with Disabilities Act (ADA) phone is a Vandalism Proof Products T1250, distributed by Janus, and the power door operators are Tormax TTXII low-energy overhead operators. The overall project was designed by Gensler Architects and engineered by Stantec Consulting. Installation of the accessibility equipment was achieved in July 2010.

Below: A Tormax TTXII low-energy overhead door operator

Opposite page (left): The top level of the platform lift in use

Opposite page (right): The upper landing with door open