

THYSSENKRUPP

ONE WORLD TRADE CENTER

MEDIA KIT

June 2, 2015



ThyssenKrupp



One World Trade Center to Feature Fastest Elevators in the Americas

Elevators designed by ThyssenKrupp feature custom technologies, travel nearly 23 mph

NEW YORK (May 29, 2015) – ThyssenKrupp, a global technologies and materials group, shared that the fastest elevators in North and South America have been installed at One World Trade Center in New York. Five of the elevators represent a record-breaking engineering feat, able to travel at nearly 23 mph and reach almost the top floor in 60 seconds. At this speed, the elevators nearly outpace Usain Bolt's world-record 100-meter sprint.

ThyssenKrupp's global network of experts collaborated together to achieve this record-setting mark through a variety of customized solutions specific to the demands of the iconic One World Trade Center. Together, eight countries contributed key elements of the elevators including cabins, motors, cables, four million pounds of rails and complex software.

ThyssenKrupp's high-speed elevators are equipped with several special technologies to get and keep them moving at record setting speeds. Aerodynamic aluminium shrouds deflect air and maintain speed, similar to a spoiler wing on a car. A special guide system minimizes vibrations, ensuring a smoother ride. Sound suppressing materials throughout elevator cabs and doors limit noise.

"The sheer magnitude of One World Trade Center posed unique vertical transportation and structural engineering challenges which required thoughtful engineering solutions," said Richard Hussey, President and CEO of ThyssenKrupp Elevator Americas. "What riders experience is just a small fraction of the years of planning and execution we have invested into creating and maintaining the fastest elevators in the Western Hemisphere."

ThyssenKrupp also designed and installed all of the elevators and escalators throughout the building. The elevator system provides energy conservation to the building. LED lights in cab ceilings will save more than 78,000 kilowatt-hours annually versus halogen bulbs, which is equivalent to fully powering an average U.S. home for more than seven years. Regenerative drives will recapture elevator energy and return it to the building's electrical system.

The elevators employ ThyssenKrupp Elevator's Destination Dispatch™ technology, which uses intelligent software and kiosks to group people on to elevators to move them to their destination the fastest. Altogether, ThyssenKrupp installed 71 elevators and 12 escalators into One World Trade Center.

"Working on this iconic project and such an important part of the New York City skyline is a point of pride for the ThyssenKrupp team around the world," said Patrick Bass, CEO of ThyssenKrupp North America. "The elevators and escalators installed at One World Trade Center are symbolic of ThyssenKrupp's rich heritage of engineering innovation and history of working with customers to provide customized solutions to fit any project."

From custom-designed elevators to the stainless steel ThyssenKrupp Materials' Ken-Mac Metals Division supplied to the building spire, the work accomplished at One World Trade Center would not be possible without ThyssenKrupp's proven track record as a provider of innovative solutions across a wide variety of industries. As such, ThyssenKrupp is working to improve the way people move around in and experience cities.

In addition to the fastest elevators in the Americas, ThyssenKrupp is leading the field of urban mobility and logistics through ground breaking technologies like the rapid-transit moving walkway ACCEL and cable-free magnetic-levitation MULTI elevator system.

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ThyssenKrupp Elevator Americas is the largest producer of elevators in the Americas, with more than 15,500 employees, in more than 230 branch and service locations. ThyssenKrupp Elevator Americas oversees all business for the operations in the United States, Canada, Central and South America. It is a subsidiary of ThyssenKrupp Elevator AG.

ThyssenKrupp, headquartered in Essen, Germany, is a diversified industrial group with traditional strengths in materials and a growing share of capital goods and services businesses. The Group employs around 155,000 people in just under 80 countries. In the fiscal year 2013/2014, ThyssenKrupp generated sales of more than 9 billion euros in North America and employed more than 20,500 people. In North America, ThyssenKrupp oversees more than 40 companies in the United States, Canada and México; its companies offer a range of products including: premium carbon steel, high-performance alloys, automotive components, elevators, escalators, material trading, handling and logistics, plant construction and industrial services.

ThyssenKrupp Elevators and Escalators at One World Trade Center

ThyssenKrupp's custom design for One World Trade Center provides mobility solutions befitting an iconic American structure

One World Trade Center is an iconic structure, a testament to American resilience. A structure of its magnitude requires a vertical transportation solution to match its form and fashion, not a template taken off the shelf. True to ThyssenKrupp Elevator Americas' customer-centric focus, the custom design for One World Trade Center integrates innovative technologies, feats of engineering, and sustainable mobility solutions to meet the specific needs of the building and the people who will work and visit it.

ThyssenKrupp's Project Scope for One World Trade Center

- ThyssenKrupp designed and installed 71 elevators and 12 escalators at One World Trade Center, including geared, high-speed gearless and hydraulic technology.
- The project features the fastest elevators in North and South America and can head up to the Observation deck on the building's 102nd floor, traveling at 2,000 feet per minute.
- At full speeds, it will take approximately one minute for an express elevator to move from the bottom of One World Trade Center to the 102nd floor, reaching speeds about as fast as Usain Bolt's world-record 100 meter sprint.
- This project represents a global engineering effort for ThyssenKrupp Elevator with participation from many countries, including the USA, Brazil, Canada, China, Germany, Italy, South Korea and Switzerland.
- The elevators' one million pounds of counterweights - a critical component of the elevator system - weigh more than two Statues of Liberty.

Custom Solutions for One World Trade Center

- Ride quality – Active roller guides with a proprietary ThyssenKrupp design minimize vibrations and create a smoother ride.
- Aerodynamics – The aluminum shrouds on the elevator cabs are built to deflect the air and increase the elevators' aerodynamics.
- Sound suppression – Acoustic dampening is provided throughout the cab shells and doors, which are designed to limit noise.
- Optimization of ride – ThyssenKrupp Elevator's Destination Dispatch™ system which groups people on elevators and moves them to their destination the fastest is used in 63 of the elevators.

Sustainable Solutions for One World Trade Center Elevators

- LED lights in cab ceilings will save more than 78,000 kWh annually over halogen bulbs.
- Environmentally friendly regenerative drives recapture the elevator's unused energy and return it to the building's electrical system.
- The project's two hydraulic elevators use enviromax™, ThyssenKrupp's 99% petroleum-free hydraulic fluid.
- All wood used in the construction of elevator platforms is urea-formaldehyde-free.



ThyssenKrupp Materials Services North America – Crowning One World Trade Center

From the spire to the trees, ThyssenKrupp Materials NA played a role in helping to make the Trade Center shine

One World Trade Center will be a beacon to millions of visitors every year. From the spire on top of the building, to the vertical transportation systems moving people within the building, to the trees rooted at the base of the Trade Center, ThyssenKrupp proudly put its know-how and engineering expertise into action for the iconic building.

ThyssenKrupp, a diversified industrial group, has industry-leading experience in a variety of business areas. The company moves beyond simply creating products and works hand-in-hand with customers to find solutions to fit specific needs. ThyssenKrupp’s Elevator business designed and installed 71 elevators and 12 escalators – including some of the fastest elevators in the Western hemisphere.

Meanwhile, ThyssenKrupp’s Materials Services business area supported the construction of the symbolic skyscraper by supplying material to both the spire and the 500 trees marking the landscape of the World Trade’s Memorial area.

The Spire

The spire which crowns the 104-floor tower brings the height of the historic building to a symbolic 1,776 feet, which marks the birth year for the United States. ThyssenKrupp Material’s Ken-Mac Metals Division worked closely with the manufacturer of the 124-meter mast. Ken-Mac Metals, based in Cleveland, Ohio, provided 6,350 kilograms (or 14,000 tons) of 316L class stainless steel plates. The steel plates were lightly treated with a sandblaster, trimmed in size and assembled into the gleaming spire. In May 2013, the spire was installed on top of One World Trade Center.

Ken-Mac Metals sells more than 72,000 tons of stainless steel each year, most of it to manufacturers of industrial kitchenware. So, while the One World Trade Center order is small in terms of quantity, the spire is one of the highest points where a product by ThyssenKrupp Materials has ever been installed – and one of the most symbolic.

Earth Boxesⁱ

Another company within the ThyssenKrupp Materials business area, AIN Plastics supplied the materials used to develop earth boxes to contain the Trade Center’s 500 trees. The trees are an integral part of the landscape design in the World Trade’s Memorial area. The trees surround the two fountain pools that mark the spot of the Twin Towers. As the supplier to Navillus Contracting, AIN Plastics of Yonkers, New York worked with Navillus to facilitate material supply during as the Trade Center was constructed. In total, AIN Plastics provided 2,000 Hitec 4x8 panels. AIN Plastics specializes in engineering plastics for the fabricator and OEM communities.



Photo Credit: ©Iwan Baan

ⁱ Press Release: Vycom Earth Boxes Used at World Trade Center Memorial Site (Sep 28, XXXX)



When's the Last Time You Thought about Elevators?

DID YOU KNOW?

The elevator-escalator footprint occupies between 25% and 50% of a building's floor space. That's like turning a 1,000 square foot apartment into a 500 square foot apartment by simply adding elevators.

Since the birth of the elevator in 1854, not much about the basic technology has changed. A single cabin in a single shaft, traveling up and down with a rope is still the norm.

But, elevators are central to anyone who has ever set foot in a building with more than a few floors.

A Columbia University study found in 2010 alone, New York City's working community spent a combined total of 16.6 years waiting for elevators and 5.9 more years inside elevators.

But modern technologies are primed to radically change traditional engineering, with immense possibilities for efficiency.

So, what if...

TWIN ELEVATOR

Increase transport capacity by 30% and reduce the elevator footprint in buildings by 30%.

Can save up to 27% of energy when compared with other technologies.

Elevators operated using two independent cabins?

In more and more buildings they do...

Two cabins, operating independently in the same shaft, increase how efficiently you can get people from point A to point B. It also has energy savings.

REGENERATIVE DRIVES

Capable of reducing energy needs for a building by approximately 30%.

Elevators gave back as much energy as they used?

In fact they can, and in some buildings they do...

Elevators can run their entire lives (approximately 25 years) with their lights on. At One World Trade Center, for example, using 18-watt LED bulbs in the elevators instead of 50-watt halogen bulbs will save more than 78,000 kWh annually – enough to power an average U.S. home for more than seven years.

Regenerative drives turn elevators into power generators, converting energy that would otherwise be dissipated as heat into electricity that is then fed back into the building's power grid.

MULTI ELEVATOR

Exchangers allow cabins to travel vertically, horizontally and even diagonally.

Elevators ran without any ropes at all vertically...and horizontally?

They will...

MULTI, announced in 2014, removes suspension ropes and equips elevator cabins with magnetic levitation technology, propelled by linear motors. ThyssenKrupp has essentially transformed elevator systems into vertical mass transit systems – shaft transport capacities can increase by 50%.

With no ropes, a multi-level brake system, and inductive power transfers from shaft to cabin, MULTI requires smaller and fewer shafts compared to traditional systems. The overall increase in efficiency can decrease a building's elevator footprint by up to 50%, providing more usable floor space and revenues to building owners.



A LOOK AT THE ELEVATORS AND ESCALATORS INSIDE ONE WORLD TRADE CENTER

**71 ELEVATORS
AND 12 ESCALATORS**
provided by ThyssenKrupp Elevator

The building has the
FASTEST ELEVATORS
in the Western Hemisphere,
traveling at 2000 fpm —
which nearly outpaces
USAIN BOLT'S
world-record 100-meter sprint



60 SECONDS:
travel time from
bottom to 102nd floor

The length of steel cables
in the elevator is longer than
**THE DISTANCE FROM
NEW YORK CITY TO
BALTIMORE**

LED lights in cab ceilings
will save more than
78,000 kWh ANNUALLY
over halogen bulbs. That's enough
to power a home for **7 YEARS!**

NC(=O)NCO
All wood used
in the construction of the
elevator platforms is
UREA-FORMALDEHYDE FREE

104 STORIES
with a total height of
1776 FEET
(representing America's
year of independence)

One World Trade Center is the
**TALLEST
BUILDING**
in the Americas

The elevators'
1,000,000 lbs of
counterweights —
a critical component
of the elevator
system — weigh more than
TWO STATUES OF LIBERTY

Two of the elevators use
enviromax™, ThyssenKrupp's
**99 PERCENT
PETROLEUM-FREE**
hydraulic fluid

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4. Comparison chart: LED lights vs. incandescent light bulbs vs. CFLs. Retrieved from <http://www.designrecycleinc.com/led%20comp%20chart.html>
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ThyssenKrupp Elevator Americas