



the **OUTRIGGER**

R. Baker & Son Magazine - 10 Years Strong
Service-Disabled Veteran-Owned Business

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R. Baker & Son Brings Iconic Sculpture Back Home to the World Trade Center

For 30 years, German sculptor Fritz Koenig's 25-foot bronze "Sphere" stood as a centerpiece between the World Trade Center's Twin Towers until terrorist attacks brought the buildings crashing down around it on September 11, 2001. Improbably, as the smoke and dust dissipated and mountains of rubble was cleared away, the battered and scarred sculpture emerged largely intact. The Sphere was relocated to Battery Park, where it stood until August 16, 2017, when it finally made its way back home.

The Koenig Sphere was commissioned by the Port Authority of New York and New Jersey, owner of the World Trade Center, and installed in 1971 to symbolize world peace. Following 9/11, the Sphere took on a new symbolism, one of rebirth, hope and perseverance, yet its future remained uncertain as city officials, 9/11 families, and National September 11 Memorial and Museum representatives debated where its permanent location should be. Finally, in 2016, PANYNJ's board unanimously approved a resolution to "bring the Koenig Sphere home" to Liberty Park, which overlooks the 9/11 Memorial. R. Baker & Son was engaged to carry out the relocation project.

To prepare the 27-ton Koenig Sphere for transport from Battery Park, Baker rigging crew members removed six of the sculpture's fifty-two bronze segments to access interior rigging points. A 65-ton crane was used to hoist the Sphere from its base onto a waiting lowboy trailer, followed by the base itself. The West Side Highway was partially closed for the Sphere's short nighttime journey to Liberty Park, where crew members used a second 110-ton crane to move the sculpture from the trailer to its new foundation for reassembly. The Koenig Sphere is now on view to the public at its permanent home and will be formally dedicated at a later date.



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HOW DO CRANES GROW

Tower cranes are a familiar fixture of city skylines, and many an observer has wondered just how they reach soaring heights capable of reaching the top of a skyscraper. While it's only logical – and correct – to presume that tower cranes are initially built from the ground up using smaller mobile cranes, how does it continue to grow as the building gets taller? By means of its own built-in lift system using one of two basic methods, external climbing and internal climbing.



In the external climbing method, a crane is erected on a concrete pad alongside the building. A special climbing frame that scales the outside of the tower sits between the slewing unit (gear and motor) and the top of the mast. When the building reaches about 15 stories, the crane is fastened to the building and crew members detach the slewing unit from top of the mast. The climbing frame then raises the jib section using hydraulic rams and temporarily supports it while the crane operator lifts a new tower segment into the gap. The new segment is bolted, and the process is repeated.

Tower cranes that use the internal climbing method are erected in the center of the structure's interior and construct the building around itself. Every 100 feet or so, a built-in hydraulic system at the crane's base is used to lift the mast from the bottom. When it reaches the desired level, crew members support the crane with steel beams and construction continues until more height is needed.



Slips Trips and Falls

According to OSHA, slips, trips and falls (STFs) account for the majority of general industry accidents – more than 500,00 are reported a year, costing \$36 billion annually. In the construction industry, STFs are the leading cause of worker compensation losses. Injuries range from strains, sprains, and contusions to back injuries, fractures, and worse. While falls from elevated heights usually result in more severe injuries, STFs that occur on the same level are the most common cause of injury on a construction jobsite.

With construction site conditions ever changing, a higher level of diligence is required when it comes to prevention of slips, trips and falls. Risk factors commonly found on construction and demolition sites include uneven surfaces and elevations,

holes, temporary walkways, water, mud and soft soil, debris, materials, tools, cables and hoses, among many others. A Site-Specific Safety Plan should be developed and reviewed by all employees onsite. Written maintenance, training and inspection procedures should cover housekeeping, stairs, ramps and handrails, fencing, walking surfaces, floor and wall openings, lighting, cords and hoses, PPE, signage, scaffolding, and ladders. Safe access and egress routes should be established and clearly marked.



Relocation - Kiruna, Sweden

It's a rare event when an established and thriving city packs up and moves. This is precisely what's now happening in Kiruna, Sweden, but for a very good reason. Situated 90 miles within the Arctic Circle, Sweden's northernmost city sits atop the largest iron ore mine in Europe, and as mining company LKAB digs deeper and deeper, the ground beneath the city is slowly but steadily collapsing. Closing the mine was not an option, so LKAB and Kiruna put their collective heads together and came up with an audacious plan: moving the entire city two miles to the east.

LKAB has dedicated over \$1B to relocate century-old Kiruna and its 18,000 inhabitants. More than 3,000 homes, stores, office buildings, schools, and a hospital will demolished and rebuilt. LKAB will purchase existing homes from residents for 125% of their market price or offer a similar home at the new location. Twenty-one of Kiruna's buildings will be moved via trucks and cranes to the new city center, including the Kiruna Church, voted Sweden's most beautiful building in 2001. Due to its design, the church will be carefully dismantled piece by piece and reconstructed in its new location.



Designed by Stockholm-based architecture firm White following a competition, the first phase of the relocation project establishing a new town hall and ten surrounding blocks of shops, cafes, homes, offices, hotels and public space should be done by in 2019. The new city center will be compact, walkable, and welcoming, with narrower streets designed to protect pedestrians from cold Arctic winds. The remainder of the move is expected to finish by 2033, though some officials say the entire project may take up to 100 years to be completed.

R. Baker & Son Quality Award Winner...

Through his concerted and continual dedication to safety, Congratulations to Mike Hathaway, this quarter's recipient of the R. Baker & Son Quality Award. The Quality Award program was established to recognize individuals for their outstanding achievements in safety, project execution and customer satisfaction, and for their continuing dedication to R. Baker & Son's growth and success.

Congratulations to all crew members for a job well done!

