



# *the* **OUTRIGGER**

R. Baker & Son Magazine - 12 Years Strong  
*Service-Disabled Veteran-Owned Business*

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## R. Baker & Son - Finding Our Niche *by David Baker*

**In any industry, every business must find its market niche.** My grandfather Ruby Baker, who founded our company during the Great Depression, found our niche early on: R. Baker & Son would build our business by taking on the tough projects that other contractors wouldn't – or couldn't – do.

Today, with 83 years under our belt, R. Baker & Son is still considered to be the “go-to” contractor for projects that are particularly challenging. Clients call on us when they have difficult rigging and assembly projects, seemingly-impossible select demolition jobs, and plant relocations complicated by complex logistics, where success is the only option. They know they can rely on us because we've built a rock-solid reputation as one of the most dependable firms in the industrial contracting industry.

While experience, expertise, and execution are musts in any successful business, much of our success can be credited to the loyalty and character of the men and women who have worked for us, combining their energy to make the R. Baker & Son the best it can be. As a family-run business, our level of dedication to excellence and integrity is a collective matter of pride among family and staff in comparison to the typical impersonal corporate mindset.

A few years back, I phoned a number of our long-term customers and asked why they continue to choose R. Baker & Son for their projects time and time again, and what I found was a common thread: these clients have confidence they'll receive a higher level of safety, service, expertise, and care, and they know they can count on us to deliver a successful outcome, no matter how difficult the project.



## **DEMOLITION & WRECKING CONTRACTORS**

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**FINDING OUR NICHE - PILOT PLANT DEMOLITION  
CONCRETE, HEAL THYSELF  
CONTROLLING FUMES DURING WELDING & CUTTING**

## Finding Our Niche

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Looking back over the years, R. Baker & Son is still true to our origins, still occupying the niche my grandfather established so long ago, and still firmly dedicated to providing our customers with a level of excellence that is unsurpassed in our industry. If you have a challenging project coming up involving rigging, demolition, dismantling, decommissioning, or plant relocation, please contact us at 732-222-3553 and we'll be happy to assist you.

### LAYER BY LAYER: Pilot Plant CUA Demolition

When a pharmaceutical firm made the decision to relocate employees from several nearby buildings and consolidate them into an existing chemical pilot plant, R. Baker & Son was tasked with performing selective interior demolition and dismantling to make way for the new occupants. One of the more challenging portions of the project was the dismantlement of four central utility corridors, or CUAs, on the second, third, fourth and fifth floors of the pilot plant.

Much of the pilot plant undergoing renovation was comprised of reactor rooms, support rooms, mechanical rooms, and electrical rooms containing reactors, heat transfer skids, milling machines, air handlers, scrubbers, and other process equipment. The 12' x 12' x 100' CUAs supporting these rooms were jam-packed with layers of ductwork, chilled water and hot water piping, Syltherm piping, compressed air, plumbing, fiber-glass piping, glass piping, and electrical conduit. Having been installed in layers from the ceiling down, the utility corridor had to be dismantled in reverse, from the bottom up, starting with electrical conduit. With each successive layer that was dismantled, the support beams on which they had rested had to be removed as well.

Since space in the CUAs was limited, workers moved through the tunnels on creepers for the first few layers, removing piping and other debris by dollies and skates. With just two man doors at each end of the corridors, concrete wall sections had to be removed to allow large pieces of piping and steel beams through. A Baker rigging team temporarily removed sections of translucent Kalwall from the building's exterior to remove demolition debris from the building. All in all, R. Baker & Son's portion of the renovation project was completed ahead of schedule.

R. Baker & Son was assigned additional work following completion. Pleased with our performance, the client hired Baker to seal countless holes, some as large as 8' in diameter, left in floors, ceilings and walls when various reactors, scrubbers, pipes, etc., were removed during interior demolition of the facility.



# Concrete, Heal Thyself

**Concrete is the most consumed material on earth next to water and has been used for thousands of years. But after all this time, it still has one deficiency that modern technology has yet to overcome.** All concrete cracks to some extent, no matter how carefully it is mixed, blended, amended, or reinforced.

In 2006, a concrete technologist posed an interesting question to Dutch microbiologist Henk Jonkers. What if there was a way for cracked concrete to repair itself, like a living organism? After three years of intensive work, Jonkers successfully developed bioconcrete, a concrete that heals itself using bacteria.



Bioconcrete is essentially regular concrete mixed with capsules containing a healing agent comprised of bacillus bacteria and calcium lactate. Bacilli thrive in alkaline conditions and produce spores that can survive decades without food or oxygen. The capsules remain intact during mixing but dissolve on contact with water that seeps in through cracks in the concrete. The released bacteria multiply and feed on the calcium lactate, in turn forming calcite, or limestone, which expands and seals the cracks from the inside out.

Jonkers and other researchers who have developed similar self-healing concretes using additives like sodium silicate, embedded glass capillaries, and polymer microcapsules are working to reduce the cost of these materials for large-scale projects. If successful, self-healing concrete has the potential to save billions of dollars each year in maintenance and repairs, particularly in difficult-to-access locations such as bridges, tunnels, and underground pipes.

## **SAFETY:** Controlling Fumes During Welding & Cutting

**R. Baker & Son projects frequently involve oxy-fuel welding and cutting of metal, activities that produce can produce harmful fumes and gas byproducts.** We follow all OSHA guidelines, standards and regulations to protect workers from the health effects of breathing these harmful fumes.

Acute exposure to metal fumes and gases produced by welding and cutting can lead to eye, nose and throat irritation, dizziness, and nausea in the short term. Prolonged exposure can cause lung damage, various types of cancer, stomach ulcers, kidney damage, and nervous system damage. Exposure to helium, argon and carbon dioxide can lead to suffocation, particularly in confined spaces.

OSHA requires employers to provide workers with information and training regarding welding, cutting and brazing hazards. Surfaces should be pre-cleaned of paint, solvent residue, and other coatings that could potentially create toxic fumes. Ventilation can reduce fumes and gas levels in work areas, but welding outdoors or in an open work space doesn't necessarily guarantee adequate ventilation. Workers should position themselves to use natural drafts and keep fumes away from themselves and others. Local exhaust systems can



be used to remove fumes, and fume hoods, fume extractor guns, vacuum nozzles should be positioned close to the plume source to draw maximum fumes and gases. Exhaust ports should be directed away from other workers. Welding in confined spaces should not be performed without ventilation per OSHA regulations. If work practices and ventilation do not adequately reduce exposures to safe levels, respiratory protection should be used.