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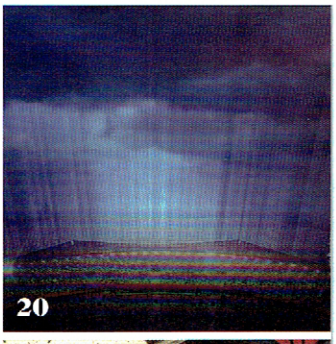

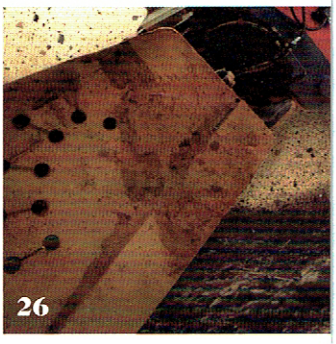

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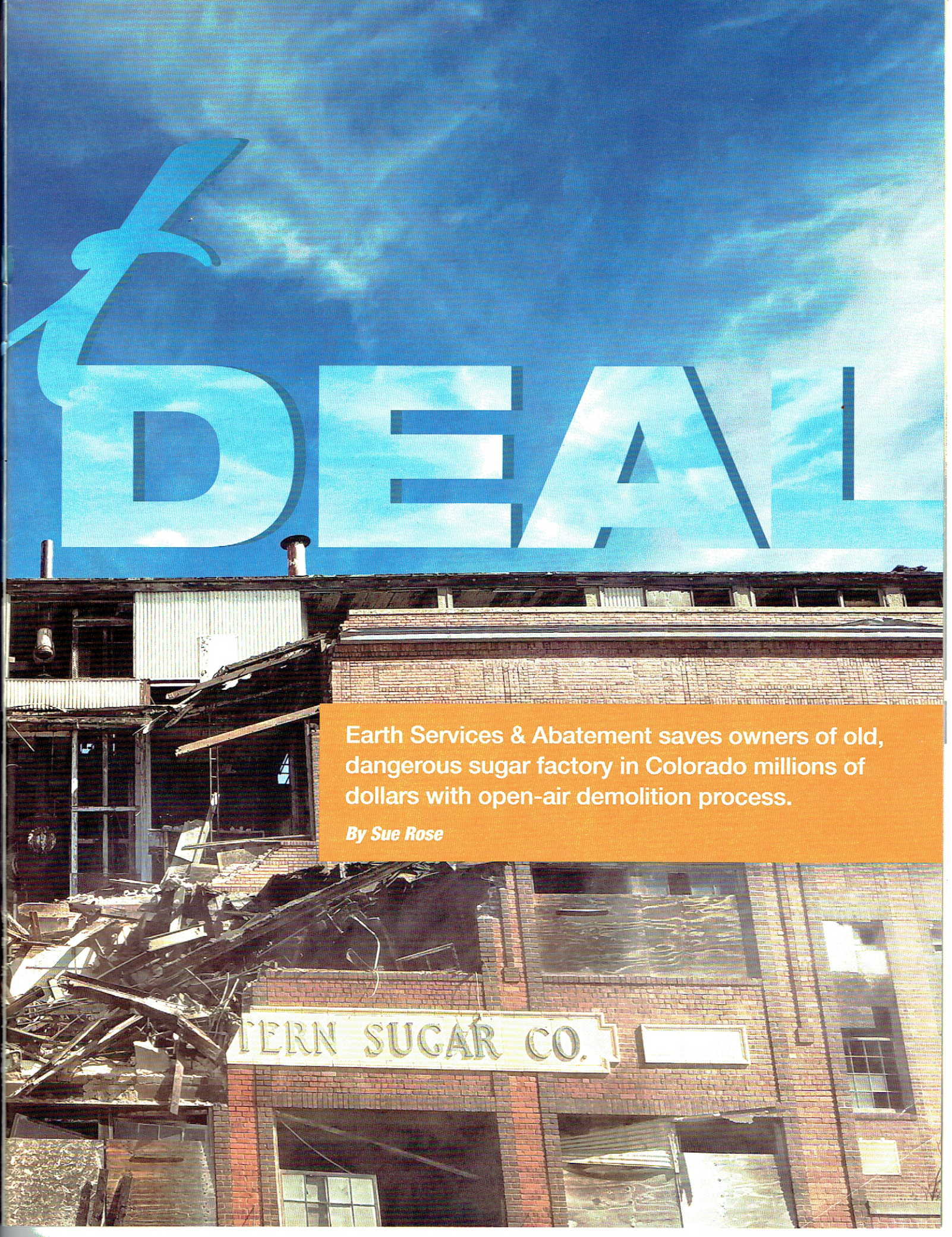


Earth Services & Abatement saves owners of old, dangerous sugar factory in Colorado millions of dollars with open-air demolition process.

By Sue Rose

The small town of Ovid rests in the far northeast corner of Colorado near the Nebraska border. While its modern amenities are limited to a couple of restaurants, a grocery store and a gas station, the town retains a significant historical landmark: The gleaming white storage silos contain beet sugar from what once was the Great Western Sugar Company's finest factory.

Built during the booming sugar economy of the early 1900s, Ovid's huge Great Western (GW) factory was built with coal, steam and mules. The town incorporated in 1925 during the factory's construction and by 1940 had grown to a resident population of 650 — twice the population of Ovid today.

Unfortunately, Colorado's sugar economy died off with the expiration of the Sugar Act in 1974. Ovid's GW factory was closed in 1976, and by September of 2006, the entire domestic beet sugar industry was grower-owned. Amalgamated Sugar, a cooperative of sugar beet farmers, bought the Ovid property in 2002. It had been abandoned except for the warehouse and silos, which were still in use. The co-op didn't anticipate the liability they had taken on along with the purchase of the property.

As with other abandoned sugar factories that now dot the rural landscape, Ovid's abandoned factory was truly dangerous — structurally unsound and riddled with asbestos. In 2011, the need to demolish and abate these sites became clear when a 23-year-old man died after plunging 75 feet from its roof while exploring the ruins of an abandoned sugar factory in Eaton, Colorado.

ELIMINATING LIABILITY

Amalgamated Sugar made the commitment to abate and demolish the factory site, which included 11 smaller buildings, the 116,000-square-foot Mill Building and a 146-acre site.

The enormous price tag for the job would have to be borne by the cooperative's 750 farmers themselves, with no hope for return on their money. The co-op deemed the investment worthwhile — for no other purpose than to eliminate Amalgamated's looming liability. They contracted with Schafer Environmental Consulting to devise a plan for abatement and demolition that would leave only the sugar storage silos and one warehouse standing.

FIVE YEARS OF PLANNING

For a period of five years, Schafer conducted extensive research and worked a complex series of proposals with the Colorado Department of Public Health and Environment (CDPHE). Several abatement and demolition firms bid on the project, intending to use traditional methods, fully containing the structure in poly sheeting and then demolishing the structures after all asbestos had been removed. However, the costs were astronomical.

Earth Services & Abatement (ESA) proposed an alternate plan that would, if successful, save Amalgamated millions of dollars.

Central to the problem was the Mill Building. According to Rod Schafer, the Mill Building was like a massive city within itself. "It housed its own power plant, huge boilers and rusted machinery. The upper floors were collapsing. Engineers and the local fire department assessed the building and calculated what would be necessary to rebuild parts of the structure to make it sound enough to proceed with the asbestos abatement."

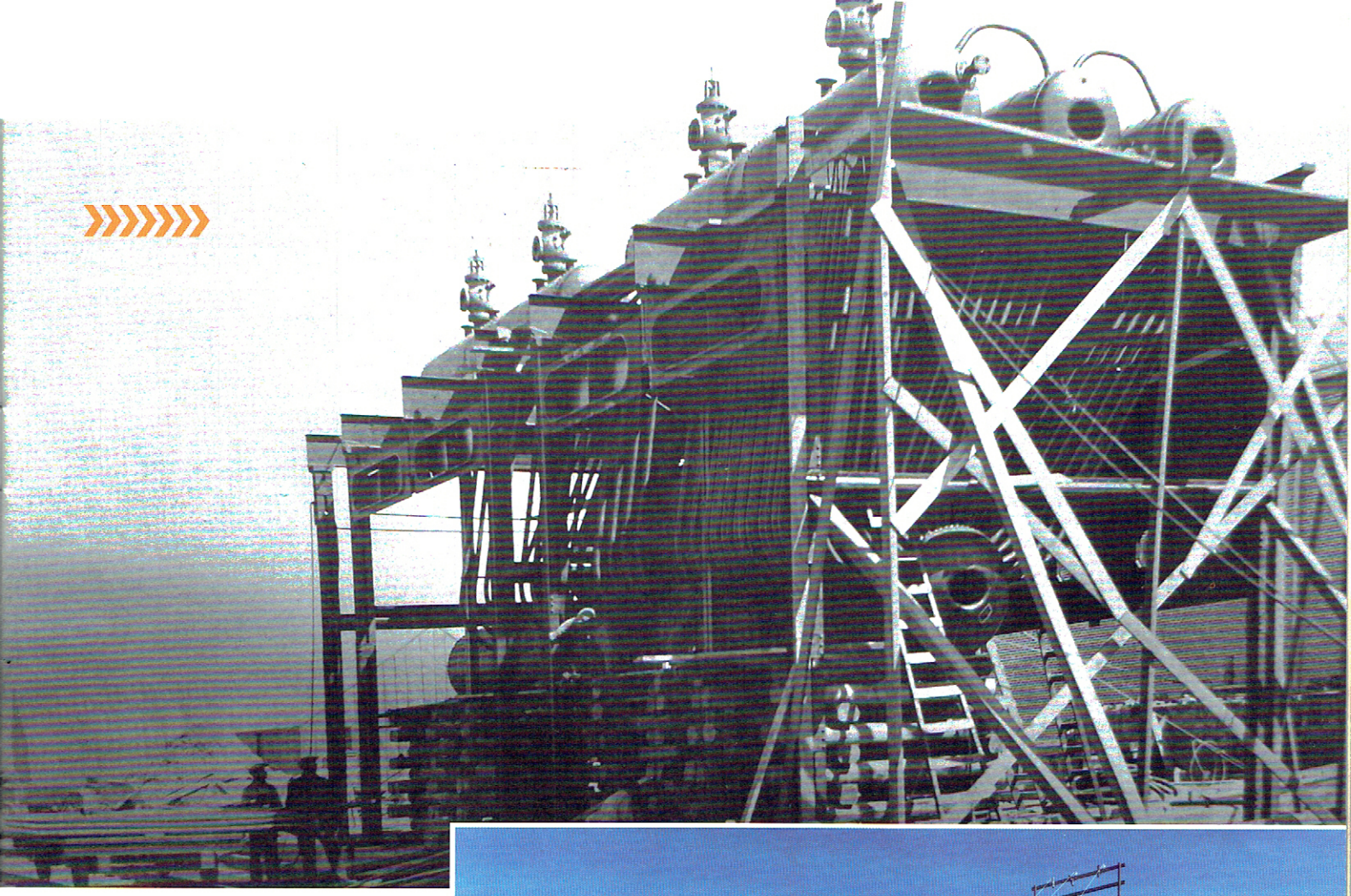
The customary method for abating the Mill Building would have been first to enclose it, abate the asbestos and then demolish the building. However, there were tremendous safety concerns related to abating the main mill structure. Walls were collapsing, floors had dangerous penetrations, and handrails were mangled and broken. ESA thought there must be a safer, more cost-effective abatement method, and teamed up with Schafer and CDPHE to devise a safer process that would cut costs by several million dollars.

ESA had two main challenges: get the local landfill to approve a one-time asbestos permit to accept the waste so that trucks would not have to haul the material three hours each way, and convince the CDPHE to approve a variance allowing for demolition of the mill with the asbestos still inside. Working collaboratively with CDPHE, ESA was able to do both.

ESA's strategy included traditional abatement and demolition of the smaller structures first, since they were safe to abate. Once complete, ESA proposed traditional abatement on any easy-to-access sections of the main mill, removing as much bulk asbestos as safely feasible. ESA would then complete structural demolition of the mill, leaving the remaining asbestos in place. Once demolished, all trucks would be lined and wrapped so that the materials could be hauled without emissions. If successful, this would avoid the tremendous hazards of abatement in a structurally unsound building, as well as millions of dollars in labor and plastic used for traditional abatement.

"Here's where ESA is truly unique," Schafer says. "ESA's Robert Szynskie used to work within regulatory agencies and as a consultant. Now he's a project manager with ESA. So he knows both sides of the equation. His extensive experience working with the CDPHE made him instrumental to obtaining the variance we needed." In addition, ESA co-owner Kory Mitchell serves as president of the Colorado Environmental Professionals Association, which works closely with CDPHE on regulatory issues.

The ESA team pulled out all stops, with Szynskie taking the lead. "Navigating regulatory agency requirements and working collaboratively with agencies to find solutions that require original



ESA's high reach excavator with misting system and shear was used to safely bring the Mill Building to the ground.

ESA excavator next to partially demolished Mill Building. Newer silos in the background will remain standing.

Timeline of the Great

Western Factory

1925

Town of Ovid, Colorado, incorporated; Great Western factory built

1974

Sugar Act expires

1976

GW factory closes

thinking is one of Robert's most valuable gifts," Mitchell says.

In August 2016, ESA's plan was approved. It was to provide at least one dedicated certified asbestos abatement supervisor on-site at all times during structurally unsound demolition and debris removal activities. Full-time inspection and air monitoring personnel were also required at all times.

"This was a collaborative effort that proceeded without the head-butting that can often occur in projects of this scale," Schafer says. "From its professional field personnel to upper management, ESA was an exceptional partner in a very complex project that was not free of complications. ESA's unique experience inside regulatory agencies was a huge benefit that allowed us to obtain the variance needed to save the owners millions of dollars now, and possibly many more millions in potential lawsuits down the line."

Another unique aspect of variance is that steel was allowed to be decontaminated of any asbestos and recycled. ESA's equipment operators segregated the materials, cut metal into manageable sections and placed the materials in a metal cleaning area. Control measures such as windbreaks were installed to ensure that the activities performed within this area were separated from the demolition and waste-loading areas. Wet methods and hand washing were conducted on a concrete pad using low-volume, high-pressure sprayers

2002

Amalgamated Sugar buys property

2011

Man dies after falling from the roof of a different abandoned Colorado sugar factory

2016

ESA's demolish plan is approved

and a high-volume, vacuum-impervious liquid barrier system. This system was supported with an ESA Vac-loader (2,670 CFM) set up to filter recovered water to five microns prior to disposal in the specified sanitary sewer system.

Metal was cleaned inside the cleaning area, and the AMS/BI visually inspected the metal for any dust and debris prior to the metal being moved outside the work area. The clean metal could then be moved from the work area to the clean recycling area to be loaded on rail cars or trucks for recycling.

What's next for the remaining 21 abandoned sugar factories in Colorado? After ESA's groundbreaking work in Ovid, perhaps more abandoned factories will follow suit. ESA's co-owner Kristian Mitchell sums it up: "Our focus on this project was to show that safety must come first on projects of this nature. Sometimes a common-sense approach in working with the state can yield results that are not only safer for the public health and the environment, but also more affordable for clients." Time will tell if such an approach will be replicated on other dangerous abandoned structures that litter the countryside. D

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Wet methods were paramount to control air quality. The mill structure debris were pre-wetted for a period of no less than 45 minutes by the use of 18,000 CFM water cannons set to "mist." The AMS/BI set air samples in designated locations prior to beginning demolition activities.