

CONSTRUCTION TIME REDUCED WITH NEW VAPOR BARRIER SYSTEM

CASE STUDY:

**MonoShield Aluminum Nitrile Vapor Barrier
System Installed at Liberty Park Site**



HIGHLIGHTS



The State of Michigan and the City of Sterling Heights created a competitive tax increment finance plan which made this brownfield redevelopment possible.



Liberty Park is being transformed from underutilized into a property that will bring jobs and growth to the community.



MonoShield merges the benefits of both roll-out barriers and spray-applied barriers. It has the efficiency of a prefabricated barrier system and the flexibility and responsiveness of a spray-applied component for sealing penetrations, wall terminations, and seams.



MonoShield is both time — and cost-efficient; it can be installed **30-40% faster than alternate plastic sheeting or HDPE systems.**



Cooperation among numerous stakeholders: The Michigan Department of Environment, Great Lakes, and Energy (EGLE), Ashley Capital, SME, Oliver Construction, Land Science, and S&H Waterproofing.

BACKGROUND

Liberty Park is located in Sterling Heights, Michigan, 23 miles north of downtown Detroit. This region, known colloquially as “Automotive Alley,” is home to General Motors, Ford, and Daimler/Chrysler. The area has experienced a growing demand for high-end office and industrial warehouse space. In the last five years in particular, the region has experienced vacancy rates for manufacturing spaces as low as 1.5%.

Liberty Park is a landfill-based, brownfield site. Throughout the 1940's and 1950's, a nearby creek was filled with incinerator waste which led to contamination

at the site's low-lying areas. Liberty Park was first redeveloped into a recreation facility in the 1980's and operated until 2017.

This site posed multiple remediation challenges with a variety of known contaminants including arsenic, lead, and methane. In addition, the site was historically filled in an uncontrolled manner which left the soils with load-bearing capacity issues. To build on the site would require a unique foundation along with a vapor intrusion mitigation solution.

OVERVIEW

Ashley Capital, a leading commercial real estate investment company, saw the potential for the Liberty Park site to bring jobs and economic growth to the community as well as meet the increasing demand for manufacturing space. Often, brownfield sites like Liberty Park pose challenges to redevelopment efforts because of their contamination and the high cost of remediation. In this case, redevelopment was made possible due to a tax increment plan created by the state and local government.

In the course of evaluating potential vapor intrusion mitigation options, Ashley Capital's geoprofessional, SME, was approached by Land Science, a division of REGENESIS, with a new and innovative vapor intrusion mitigation system, MonoShield™, which promises to be a more cost-effective and reliable choice than traditional single-layer mitigation systems.

MonoShield has been developed to be faster and easier to install than a traditional tape and roll system. Tape and roll systems pose a number of issues including constructability and concerns for leaks and tears in the material and seams. MonoShield incorporates a durable metalized film featuring spray-applied nitrile-modified seams installed by certified applicators, making installation fast and reliable. This aluminum, nitrile-modified system is designed to withstand tough construction conditions and is a viable solution for spec projects where flexibility is needed. SME chose to be the first to install MonoShield because of the trust and relationship the team had in Land Science and its suite of vapor barrier solutions. Further more, SME trusted MonoShield would save Ashley Capital time and money.



PROJECT TIMELINE

1940's-1950's

Incinerator waste was placed at the site leading to the contaminated conditions.



2017

Liberty Park closed, property purchased by Ashley Capital, LLC for redevelopment.



May 2019

MonoShield Installation



August 2019

Scheduled completion



1984

Liberty Park recreation complex opened



June 2018

Construction began



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CONSTRUCTION
BUILDING YOUR FUTURE



"I've been looking for a product that meets the efficiency of a roll out barrier with spray applied components for seams and penetrations for quite some time. I'm really excited to use MonoShield at Liberty Park."

- Mark Quimby, Senior Consultant at SME



VAPOR BARRIER INSTALLATION APPROACH

Two key challenges at Liberty Park required innovative design solutions. The first challenge came from building on top of an unstable landfill-based site. Oliver Hatcher Construction fortified the foundation, installing 8,000 geo-piers, which increase the allowable bearing pressure and limit the foundation settlement to meet project requirements.

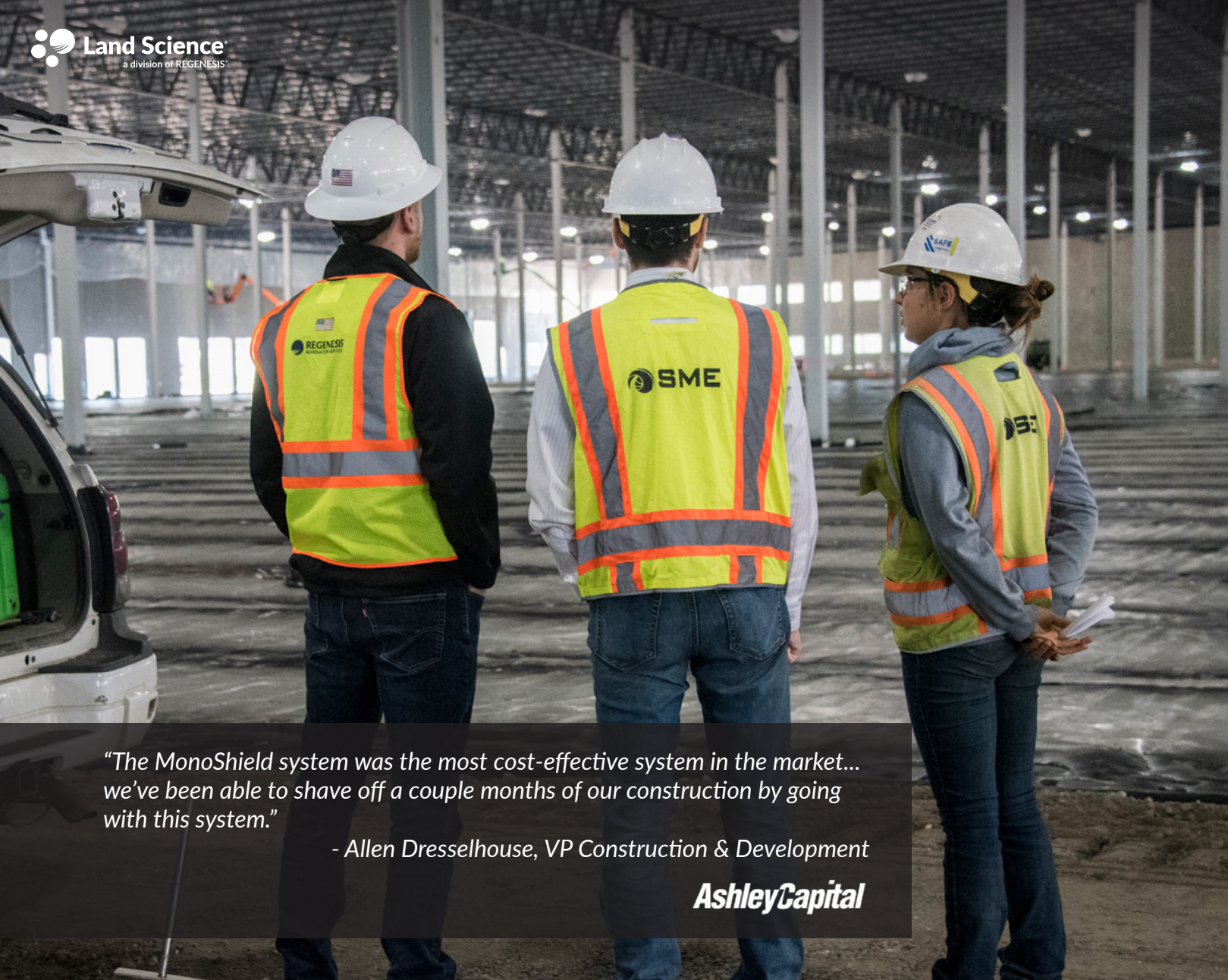
The second challenge came from the size of the building. At 570,000 square feet, it would be very expensive to pump concrete from long distances into the building. To address this, the site preparations included an 8-inch layer of stone on top of the MonoShield followed by the building slab. Additionally, the contractors

installed a Mirafi geotextile road fabric to protect the MonoShield from overlying stress. This unique profile provided a buffer area for utilities and also provided a structural component that would allow for the concrete to be poured directly from a truck inside the building, avoiding the extra cost of pumping concrete. The MonoShield vapor barrier system was applied by rolling out the MonoBase sheets in one direction with 6-inch overlaps and applying 60 mils of MonoCore between the overlapped sheets sandwiching the sheet and core material. The certified applicator then applied an additional 30-mils of nitrile core to the top of the seams to ensure complete system integrity.



MonoCore[™]
Modified Asphalt-Nitrile
Latex Vapor Barrier

MonoCore spray-applied nitrile-modified asphalt core ensures a leak-proof seal.



"The MonoShield system was the most cost-effective system in the market... we've been able to shave off a couple months of our construction by going with this system."

- Allen Dresselhouse, VP Construction & Development

AshleyCapital

RESULTS

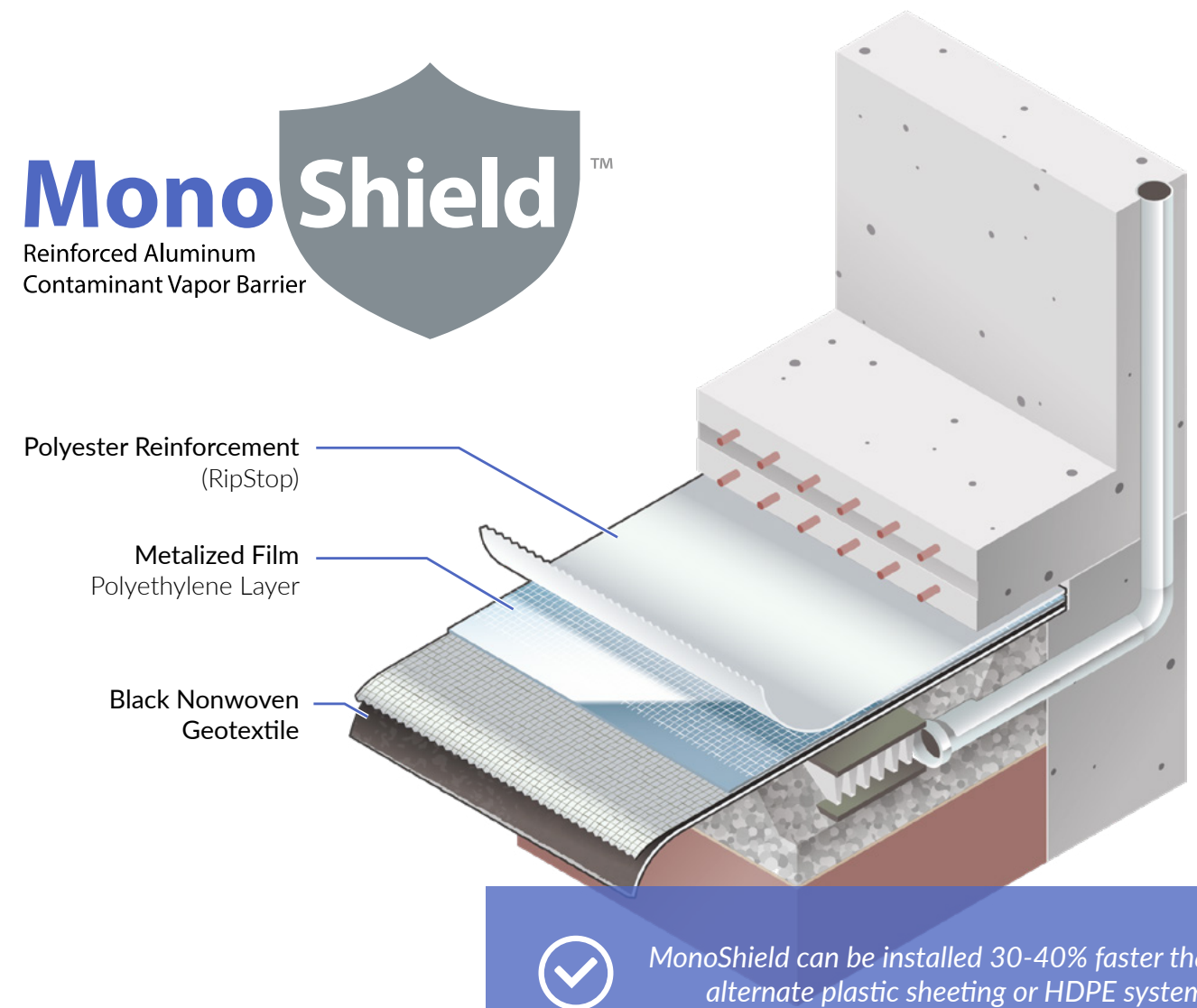
With MonoShield in place, Liberty Park is preemptively protected from any harmful vapor intrusion. Additionally, applying this new technology was extremely cost and time-efficient for the developers. Oliver Hatcher will complete construction in August 2019 and Liberty Park will be repurposed for light industrial warehousing and

manufacturing. Ashley Capital anticipates that this new space will bring hundreds of new jobs and economic growth into the eastern part of Michigan. All of the involved parties are very pleased with the results from MonoShield and with the successful redevelopment of this brownfield site.

TECHNOLOGY

MonoShield is a reinforced aluminum contaminant vapor barrier. The MonoShield system is a 30-mil composite geomembrane that is chemically-resistant and easy-to-apply. This barrier is specifically designed as a preemptive solution for vapor intrusion at brownfield sites where low-level VOC contamination, methane, and/or radon exist. It is composed of an innovative metalized film and a nitrile-based asphalt latex that ensures a seal far

more effective and easier to apply than tape-based or heat-welded systems. MonoShield can be installed 30-40% faster than alternate plastic sheeting or HDPE systems and provides a viable long-term solution for reducing liability and protecting human health at a competitive cost. Additionally, MonoShield is backed by unparalleled design support, industry-standard warranty options, and a network of certified applicators who can ensure a quality application.



ABOUT SME

SME has a track record of using big-picture approaches to deliver right-sized, sustainable solutions. Their experts help clients solve their toughest site development and redevelopment, facility rehabilitation and maintenance, and environmental challenges.



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ABOUT ASHLEY CAPITAL, LLC

Ashley Capital LLC, a leading commercial real estate investment company based in New York with offices in Detroit, Atlanta, Chicago, Grand Rapids, and Norfolk VA, has invested in millions of dollars in developing and managing new business parks in Michigan and surrounding states. Ashley's current portfolio stands at approximately 25 million square feet, with properties concentrated throughout the eastern half of the United States. The company is actively working to revitalize distressed, brownfield properties, bringing tax relief and economic opportunities to communities like Sterling Heights.



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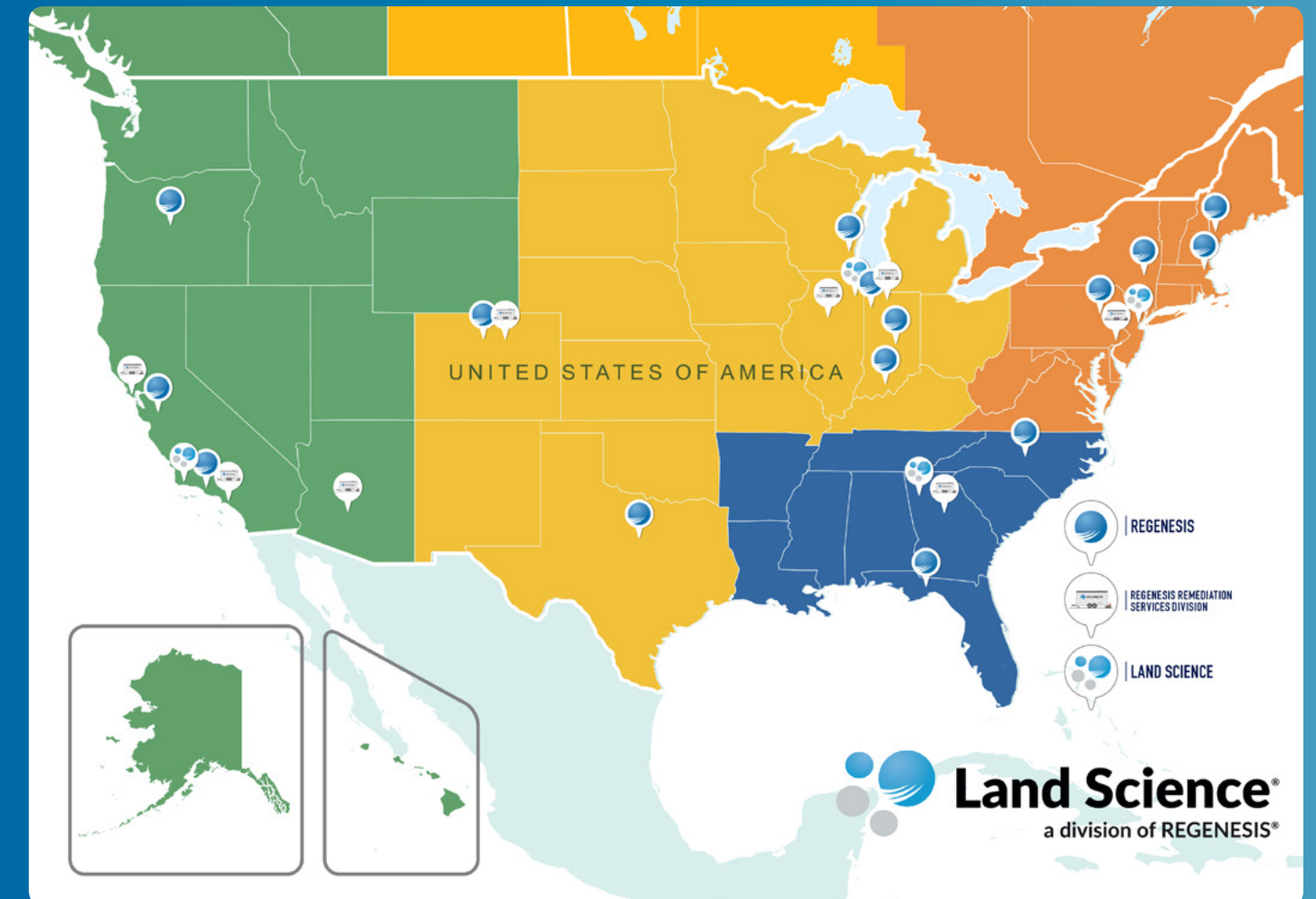
ABOUT OLIVER HATCHER

Since their inception in 1995, Oliver/Hatcher Construction has strived to exceed their customer's expectations by delivering exceptional service, value, and quality in every construction project. They seek to distinguish themselves by providing industry-changing construction solutions. Oliver/Hatcher is building our future on a foundation of unparalleled customer satisfaction, resulting in enthusiastic client endorsement and referrals.



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