

# CASE STUDY

## Looking Good Store Montgomery, Alabama

<b>Storage Required:</b>	21,150 CF
<b>Storage Provided:</b>	21,175 CF
<b>Area:</b>	28,000 SF
<b>Models:</b>	Recharger® 150
<b>Number of Units:</b>	Approx. 460
<b>Tons of Stone:</b>	150
<b>Installed:</b>	August 2010
<b>Project Engineer:</b>	Larry E. Speaks & Associates Montgomery, Alabama
<b>Contractor:</b>	Danny Clements Builder, Inc. Montgomery, Alabama



Montgomery, Alabama, was slated to get a new 28,000-sq.-ft. Looking Good store, offering men's clothing and sportswear to local residents. The engineers at Larry Speaks and Associates joined the design team to create a stormwater system to detain runoff onsite and release it slowly into a municipal system, as required by the local regulations.

As it often happens in urban areas where land is at a premium, the 4.5-acre site did not have enough space to fit in both a detention pond and parking lot. The engineers took the only possible option — designing an underground stormwater system.

“If the engineers used an above-ground detention system, the site would have lost 22,000 sq. ft., which would have cost the owner about \$166,000,” said contractor Danny Clements at Danny Clements Builders. “Instead, an underground system is conveniently located under the parking lot, taking up no usable space.”

The stormwater system for Looking Good was provided by CULTEC, Inc. Clements preferred CULTEC's system to a competitor's product because it allowed him to get the job done more cost-effectively. The system's unique internal manifold design eliminated the need for a costly external pipe header and allowed the company to offer a competitive price. Additionally, the system's quick and straightforward installation helped further reduce costs.

“CULTEC's system was simpler, had less interconnected pipes,” said Clements. “Overall, the company offered a lower cost of material and time, saving us about 5% on material and 10% on labor, as compared to another product.”

While the City of Montgomery requires local stormwater systems to handle 25-year storms, Looking Good's system was designed for a 50-year storm. The Department of Transportation in Montgomery requires stormwater systems to have

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## Looking Good Store Montgomery, Alabama *(continued)*

increased capacity when they discharge runoff into a state right-of-way. CULTEC's chambers detain parking lot runoff that is piped along Highway 80 into a drainage swale. Originally, the engineers designed the system to send 15% of runoff into a 4,200-ft. underground concrete pipe that would have released it to a municipal sewer. However, as the local sewer had already reached its capacity at this time, Looking Good's system was later re-designed to increase the bed size by 25% and send all runoff into CULTEC's chambers. Clements worked with CULTEC to revise the system's layout to garner additional storage volume.

From CULTEC's nine chamber sizes, the engineers selected the Recharger® 150, a lower profile chamber typically used for installations with depth restrictions or when a larger infiltrative area is required. The unit is 8.5 ft. long, 33 inches wide and 18.5 inches high, with a storage capacity of 19.88 ft<sup>3</sup>/unit.

"We had to use a shallow system as the site was very flat, and the elevation of the parking lot was not much higher than the elevation of the drainage swale," said Paul McClendon, a project engineer with Larry Speaks and Associates. "Elevation of the swale is 218.5 feet, and elevation of the parking lot is only 224 feet, 5.5 feet above the swale, and this chamber was a good fit in these conditions."

About 460 units of the Recharger 150 were installed in a 14,580-sq.-ft. bed of crushed limestone, providing 21,175 cu. ft. of storage. While Clements has seen such underground systems installed on other projects, this was the first time he had to install one himself. "CULTEC was helpful and responsive to all our needs," Clements said. "Mr. Dotson, the company's Vice President, flew in from the headquarters in Connecticut to oversee the installation. This job is the easiest thing I have ever done."



### CULTEC, Inc.

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