

Rebuilding Detroit: From the ground up

CIVIL ENGINEERS FIND INNOVATIVE WAYS TO WORK WITH CENTURY-OLD INFRASTRUCTURE AND IMPROVE THE CITY'S TRANSPORTATION NETWORK.

By Scott Clein, P.E., LEED AP

With all appropriate apologies to Mark Twain, and with perhaps a dirty look toward the folks at Time magazine, I tell you this: "The rumors of Detroit's death have been greatly exaggerated." While the city's bankruptcy dominates local and national news alike, few people outside of southeast Michigan actually grasp the remarkable growth that is taking place in Detroit.

In September, 28 of the city's leading companies and organizations tried to change nationwide perceptions by placing an ad in The New York Times and The Washington Post, proudly stating, "Here's \$250 billion that says the city of Detroit has a very bright future." The \$250 billion represents the combined market capitalization of those 28 companies.

More to the point, Detroit has seen more than \$10 billion in commercial, industrial, and residential investment since 2007. According to the Detroit Regional Chamber of Commerce, the private sector is growing and investing at a record pace. While much of the publicity for this investment rightly revolves around Dan Gilbert, chairman of Rock Ventures/Quicken Loans, and his real estate development firm, Bedrock, many other businesses and private investors are following his lead and investing in the future of the city.

In 2013, Detroiters have welcomed several new markets, most notably headlined by the opening of a new Whole Foods Market in a burgeoning district known as Midtown. Slightly more under the radar was the opening of a Meijer supercenter, as the west Michigan company has set its sights on Detroit for several other stores in the near future.



Pervious pavement within parking lots is helping leverage Detroit's 160-year-old utility systems by better managing stormwater prior to discharging it into the city's combined sewer system.

The Detroit Medical Center is well into spending the \$800 million it pledged several years ago, with a recently opened, state-of-the-art Pediatric Specialty Center and a new Cardiac Institute under construction. Henry Ford Health Systems has also pledged another \$500 million to expand its Detroit presence and is working on the large-scale redevelopment of an entire neighborhood to provide housing and amenities for its employees.

The Ilitch family, owners of Little Caesars Pizza, Detroit Tigers, and Detroit Red Wings, announced recently the latest addition to their long line of large-scale investment projects in the city. A new arena for the Detroit Red Wings will be constructed in the city, in conjunction with nearly \$400 million in additional development plans for a lively, mixed-use district.

Blue Cross Blue Shield of Michigan and Quicken Loans are consolidating workforces in downtown and urging vendors and partners to join them in offering employment to the largest influx of young workers the city has seen in more than a generation. Many of these people are choosing to live in the city, and the residential market is booming because of it.

Detroit is known for its grandiose architecture, and nearly every city block seems to have historic buildings in some stage of redevelopment. It's also worth noting that apartment occupancy rates in the central business district are at 97 percent, and 99 percent in the adjacent Midtown district. The Broderick Tower and David Whitney Building, long shuttered on Detroit's Grand Circus Park, are prime examples. The Broderick Tower was recently completed and has a

long list of would-be residents waiting to get in, while The Whitney is under construction, with similar interest from city-dwellers. Three more buildings on nearby Capital Park are also being renovated at this time, completely changing the outlook of a once-depressed public space. Investors from all over the world are swarming the remaining historic buildings that are not already in development.

It is important to note that this investment is not the result of a government bailout or public assistance program, though the federal government did finally just announce funding for blight removal and public safety improvements in the city's most troubled areas. No, Detroit is not a "top-down"-type city and hasn't been for a long time, and maybe never will be. Detroit is a "ground-up" place, where residents, the business community, and nonprofits toil daily to improve overall quality of life. Right now, these groups are working together more successfully than perhaps ever before, and the results are encouraging, to say the least.

But all this investment is dependent upon a solid infrastructure system of streets and utilities, and this is where civil engineers come in. More specifically, this increase in development has spurred a mini-renaissance in the way Detroit is improving that infrastructure. This is no small task when we are talking about a city settled in 1701 with active sewer lines dating back to pre-Civil War times.

During each of the projects mentioned above, many of which I have been fortunate to be a part of, the team needed to figure out the best way to leverage 160-year-old utility systems that were designed long before anyone had heard of LEED Silver. Several, such as the Pediatric Specialty Center at the Detroit Medical Center, have utilized pervious pavement within their parking lots to better manage stormwater prior to discharging it into the city's combined sewer system. Others, such as a turn-of-the-century furniture warehouse converted into a charter high school, have employed rain gardens for the same purpose and helped show the development community that brownfields can be green, too.



A new Whole Foods Market opened in 2013 in the burgeoning Midtown district.

Detroit's transportation network, truth be told, is a historical poster child for 20th-century post-war development. Detroit's surface streets generally suffer from this malady, as they were constructed largely around the turn of the century and modified during the 40 years that followed to accommodate streetcars and a population of more than 2 million people. With a 2010 population hovering around 800,000 people, these surface streets provide two and three times the vehicular capacity needed. Believe me when I say that witnessing a street operate at a Level of Service "A" right in the heart of one of America's large cities is truly depressing.

Some communities would have held onto the old ideals of maintaining this street network, but here is where the city's Department of Public Works (DPW) has shown true thought leadership. Detroit's DPW, which includes the City Engineering Department and Traffic Engineering Division, has become an advocate in implementation of the city's Urban Non-motorized Transportation Master Plan. This document, the development of which I had the privilege of overseeing, called for significant repurposing of our surface streets to promote enhanced pedestrian and bicycle transportation throughout the city.

In just the few years since the plan's adoption, the Department of Public Works, in partnership with community development organizations such as Midtown Detroit, Inc., and the Southwest Detroit Business Association, has overseen installation of nearly 75 miles of on-street bike lanes. The goal is to add another 20 to 25 miles next year. (How's that for the Motor City?)

One of the larger projects, the Southwest Detroit Greenway, installed nearly 20 miles of bicycle routes and was such a success that approvals are being finalized for a full streetscape improvement project on one of the largest commercial corridors (West Vernor) in the area, scheduled for construction next spring. Similarly, the Second/Third Avenue Greenway is a multi-phased project, which will not only add bike lanes along two major neighborhood connector streets in Midtown, but convert these streets from one-way operation back to their historic two-way configuration to enhance connectivity for the area.



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These changes are not simply about bicycles, though. The West Vernor project is one of many streetscape improvements that the city has experienced in the last few years, and many more are on the drawing boards. From the neighborhood shopping district along Livernois Avenue to West Vernor Avenue in Southwest Detroit and all the way to Madison Avenue in the heart of the Entertainment District, Detroit is investing in its infrastructure, explicitly for the benefit of people. These projects are all aimed at beautifying the city while simultaneously improving the experience for pedestrians, bicyclists, and even automotive drivers. They are the first real integration of place-making and transportation safety improvements in the region – which is, in my humble opinion, the future of our industry.

This is only a sampling of the many projects that are underway throughout the city of Detroit, despite the uncertainty of its financial future. As the city continues to benefit from real estate investment and building refurbishment, it is also important to understand that infrastructure improvements are crucial for the city to grow, and that civil engineers play a pivotal role in the city's revitalization. We will continue to find innovative ways to work with century-old infrastructure and improve the city's transportation network – all for the betterment of Detroit's visitors, workers, and residents.

I invite everyone to visit Detroit – our "work in progress" – to experience the revitalization firsthand and be inspired by the energy and investments that are happening in the city from the ground up.

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