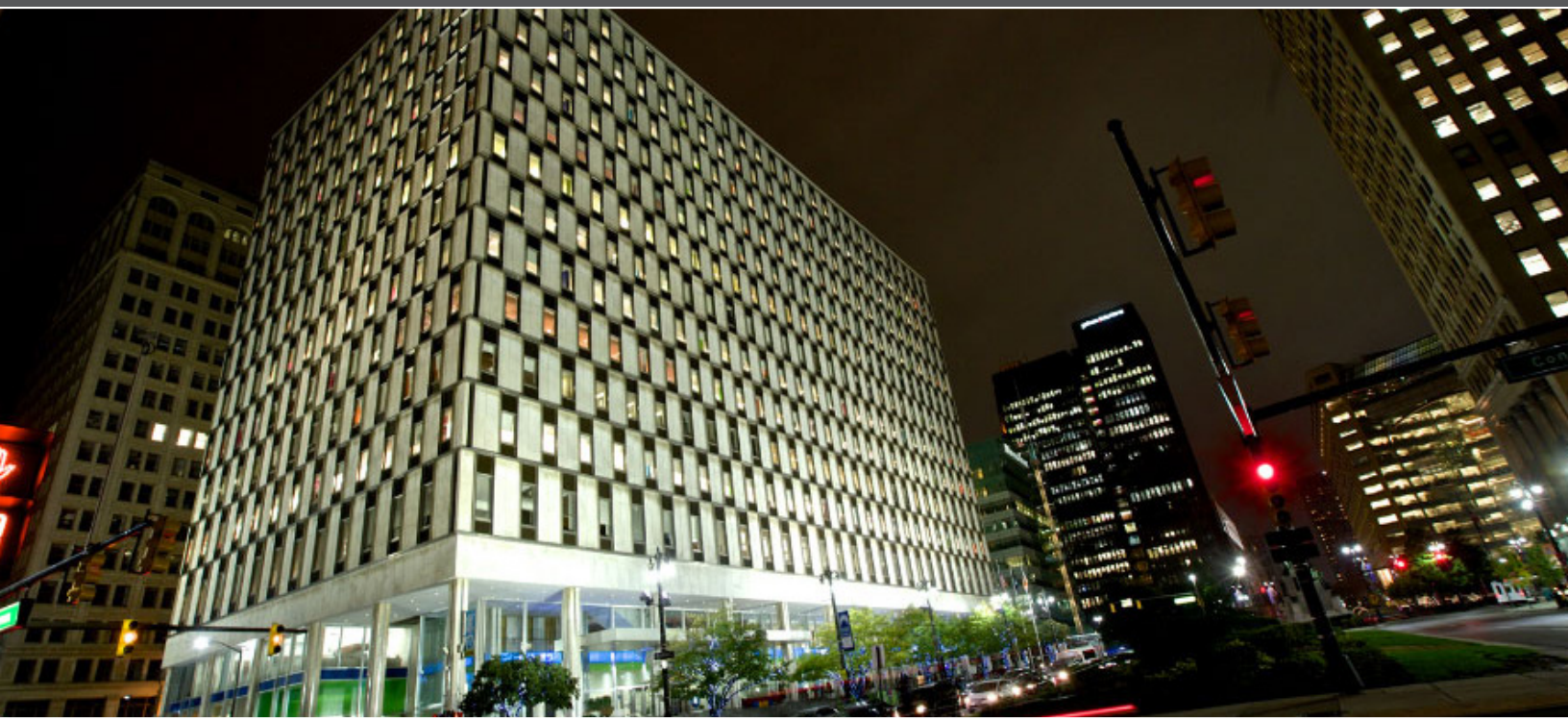
# Quicken Loans Building "The Qube"

Detroit, Michigan

CASE STUDY | corporate headquarters



Client - Quicken Loans

Rep Office - Fontanesi & Kann

Architect - Rosetti Architects

Engineers - MA Engineering

LEED Certification - None

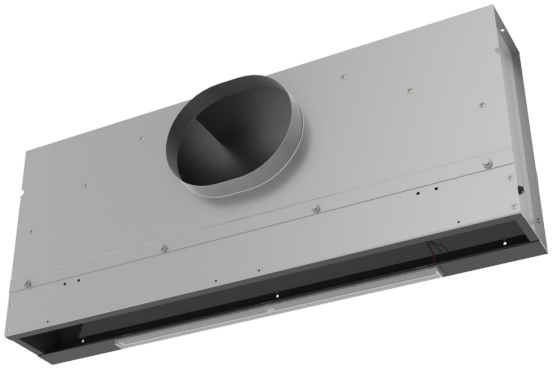
## Project Highlights:

- 500,000 square feet
- Complete renovation of historic 1960s bank building
- Structural columns are exaggerated shapes & covered in IdeaPaint for doodling or note taking
- Sit-to-stand flexible work stations
- Completed September 2012

## ABOUT THE PROJECT

The Qube, formerly known as Chase Tower, has been a landmark of the Detroit skyline since 1959. Standing at 14 stories high, it also occupies the site of Detroit's first skyscraper.  Having been purchased by Quicken Loans, the company moved forward on a complete remodel of the facility in 2011. The remodel was intended to bring the building up to date and add designs to match the company's modern style. MA Engineering was brought in to take on the mechanical engineering aspects of the project. As a firm that incorporates aspects of sustainable design into every project, they were a good fit for ensuring good indoor air quality, comfort and sustainability.

Based in Birmingham, Mich, John Richards at MA Engineering, served as the lead mechanical engineer and project manager of the renovation. His team was tasked with the complete renovation for nine of 14 floors, equaling 280,000 square feet. One of the renovation challenges was that the project did not call for new infrastructure. This meant that MA Engineering had to find a way to reuse the dual duct system that included all overhead air distribution. MA Engineering was concerned about occupant comfort near the windows because the original building design incorporated a slot air distribution device in the base of each window, creating a blanket of air over the buildings single pane windows.  The new architectural design eliminated the slot at the base of the windows, but the single pane windows remained,



EOS

creating a challenge to maintain comfort along the windows. In addition, the new office layout included workstations directly along the windows.

## THE TITUS SOLUTION

### COMFORT

Richards turned to Fontanesi and Kann, a company committed to providing the very best products, services and support to owners, contractors and design engineers through their variety of professional project and construction management services. As a result the two approached Titus HVAC, the world leader in air distribution to help solve the challenge. "Our firm is always watching for new, sustainable technologies to provide additional value to customers and Titus offers the best technology for perimeter challenges," said Richards. "That's why we decided to look at the Titus EOS for this project."

The EOS is the industry's first light-powered, energy-harvesting diffuser. With its wireless, energy-harvesting technology it pushes the HVAC science of air distribution to new heights. It was designed to improve comfort and save energy while providing a solution to challenging building perimeter applications.

Having previous experience with the Titus Dynafuser, Richards and his team were familiar with the overall concept of the new EOS technology. As Richards describes it, "EOS is better than typical diffusers because it has a 'brain' and can automatically adjust according to the temperature need so the area by the windows now maintains better comfort in both heating and cooling modes."

The EOS is designed to address the imperfect split compromises that are commonly found in the perimeter of a building's system, like the Qube. Its smart system delivers both heating and cooling by utilizing an auto-changeover function that eliminates wasteful compromise by automatically changing the air distribution pattern. Because comfort was the primary objective it became clear that the EOS was the right diffuser for the job.

"With the EOS, the air is sent horizontally in the cooling mode and vertically down over the single pane window, creating a blanket in the heating mode. In addition, the unit runs on solar power which makes it more appealing to the client and can also save on energy costs," said Richards.

## THE END RESULT

### ADVANCING THE SCIENCE OF AIR DISTRIBUTION

Another challenge on the project was that the office space featured an open ceiling with exposed ductwork and air diffusers. As a result, MA Engineering worried that a normal diffuser might not get the cooling flow needed. In order to make sure the cooling mode could project the air out into the space; Joe Fontanesi worked with the Titus HVAC lab to engineer a "lip" that helped make the air projection horizontal instead of vertical. The lip would ensure that the EOS distributed air more evenly and throughout the entire building rather than just one area. The Titus HVAC lab used videos to show the engineers how the new lip would work.

"Being able to see the demonstration videos and the projection the lip would

make was incredibly helpful," said Richards. "Titus eliminated the guess work and helped us to better understand and explain how it would work in this particular building."

## SUSTAINABLE

Having been listed as one of the 'Top Places to Work in America' for many years running, the solar aspect of EOS was important to Quicken Loans. As a light-powered energy-harvesting diffuser, the EOS is powered completely by natural light making this smart system cost effective and sustainable. In fact, the energy harvesting feature on the EOS can provide up to 30 percent energy savings during heating over a split compromise system. The solar aspect also supports the company's progressive brand image as solar powered and green systems are popular aspects among the young professionals the company is looking to attract. Not only does the company win in the eyes of its employees, but Quicken Loans is able to improve their bottom line.

Because MA Engineering had so much success with the EOS on the Qube project, they are already incorporating it into other projects as well. As Richards pointed out, "The EOS and support from both Fontanesi and Kann and Titus far exceeded expectations," said Richards. "They provided us with the technology that allowed our engineers to be successful on the job. We intend to work with them and use the EOS on future projects."

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