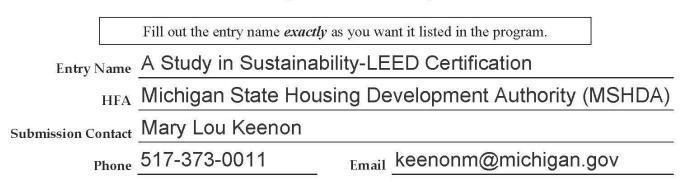
### 2014 Entry Form (Complete one for each entry.)



Qualified Entries must be received by Tuesday, July 1, 2014.

For more information about Qualified Entries, click here to access the 2014 Entry Rules.

Use this header on the upper right corner of each page.

HFA Michigan State Housing Development Authority

A Study in Sustainability-LEED Certification

Entry Name

Special Needs Rental Communications Homeownership Housing Housing 🗌 Annual Report Empowering New Combating Buyers Management Homelessness Promotional Home Improvement Preservation and Housing for Persons Materials and Newsletters and Rehabilitation Rehabilitation with Special Needs Creative Media Encouraging New Encouraging New Production Production Legislative Management Special Are you providing Advocacy Innovation Achievement visual aids? State Advocacy 🗌 Financial Special Achievement YES Federal Advocacy Human Resources NO Operations Technology

## HFA: Michigan State Housing Development Authority Category: Management Innovation Subcategory: Operations Entry Name: A Study in Sustainability-LEED Certification

## **Overview and Objectives**

In 2000 MSHDA completely gutted and rebuilt the existing State of Michigan Library Building located at 735 East Michigan Avenue in Lansing, Michigan. The building was originally constructed in 1928. The 105,500 square foot building is used as office space. Annual energy consumption averages 1,340,000 kWh and 19,000 therms at a cost of \$172,000. The facility is 100 percent occupied, typically Monday through Friday from 7:30 a.m. to 5:30 p.m., with an average occupancy rate of 270.

MSHDA leadership determined that since "green" building and sustainability were requirements for the development of its affordable housing projects, then our own office facility should set an example as well. With that objective in mind, MSHDA began the journey to sustainability in 2012, following prescribed **LEED for Existing Buildings** strategies. The desired outcome was to provide operational benefits throughout the life of the building. By sustaining these strategies, the building can maintain and even improve its performance over time while saving energy, lowering costs and being good stewards of the environment.

## The Strategy

At this point in the project, we created the Green Initiatives Group (GIG), which determined three main areas of focus: support and technical assistance for external partners, the development of green policies and procedures and improvement of efficiencies and ongoing sustainability of internal operations.

In addition to sending a clear message to public and private partners that we were serious about "practicing what we preached" in our support of placemaking and economic gardening initiatives, pursuit of a LEED-EB: O&M certification would simultaneously address all three focus areas.

In early 2013, we elected to enroll the project in the LEED v4 Beta program.

## What We Did to Earn the Silver Certification Level Under the LEED v4 Building Operations and Maintenance Rating System (See Attachments)

A comprehensive transportation survey was conducted to determine how building occupants got to work each day. The survey determined that 36 percent of employees and visitors used alternative forms or transportation such as carpooling, biking, walking or busses to get to the building. A detailed site management policy was developed to preserve ecological integrity and encourage environmentally sensitive site management practices. Full cut-off exterior lights are used to reduce light pollution.

Landscape plantings were selected to require less irrigation and watering schedules were finetuned resulting in a 36 percent reduction in the use of potable water. In addition, a 21 percent reduction in indoor potable water and sewage usage was achieved by careful selection of retrofits for plumbing faucets and flush valves to increase water efficiency. Water usage is monitored and cooling tower consumption was fine-tuned.

Even though the building had been operating efficiently, an in-depth energy audit identified opportunities for improvement. Operations and maintenance (O&M) measures and capital

## Michigan State Housing Development Authority A Study in Sustainability – LEED Certification

energy efficiency measures were identified that would result in an estimated \$31,500 in annual savings. In 2013, all of the O&M measures and four of the capital measures were implemented at a cost of \$18,500 with estimated annual energy saving of \$15,000 resulting in a 1.23 year payback. Carbon offsets were purchased to offset 100 percent of the electricity and natural gas used. Annually 3,535,970 pounds of CO<sup>2</sup> emissions will be offset, which is equivalent to taking 334 cars off the road or planting 41,125 trees.

Detailed ongoing purchasing and waste as well as facility maintenance and renovation policies were developed and implemented. Solid waste management over the initial performance period resulted in diverting 19,500 pounds of metal, plastic and glass, 144,300 pounds of paper and 15,200 pounds of cardboard from the landfill, for a total diversion rate of 86 percent. Low mercury, long life lamps that are 22 percent more energy efficient were installed throughout the building. Sustainable carpeting and low VOC adhesives were used for the flooring upgrade.

An indoor air quality management plan was implemented that included verification of ventilation air quality and quantities, enhanced air filters and an integrated pest management program that largely eliminates the use of harmful chemicals. A green cleaning program to reduce levels of chemical, biological and particulate contaminants that can compromise air quality, human health and the environment was also implemented.

The Green Initiatives Group, known internally as the Green Team, engaged MSHDA staff in the crusade for greener living both at the office and at home. Green tips to reduce impact on the environment were published weekly in the Monday Morning News (see some articles attached). Recycle bins were placed in every kitchen area throughout the agency with recycling instructions. Employees were encouraged to bring their own reusable tableware to every employee event and motivated further with raffle drawings for prizes. Today, 90 percent of our staff has tableware, silverware and cups stored in their offices to use at MSHDA events.

The Green Team also initiated Bike Week, Arbor Day and Earth Day activities as well as other environmentally friendly projects for employees such as organizing a convoy of MSHDA employees to walk to the Capital Building just down the street to participate in the "Farmers Market on the Capital Lawn." Recyclable "green" bags were purchased by employees to use in transporting their purchases back to the MSHDA offices.

### **Summary**

After a long and arduous journey, MSHDA was awarded the first LEED v4-EB: O&M Silver Certification in the state of Michigan in March 2014 and we are now conducting tours of our building with pride. (The official letter from the US Green Building Council is attached). The total budget for this project was approximately \$85,000 but we came in at approximately \$60,000, a total savings of just under 30 percent. We anticipate the payback for this project to be under three years.

Please note the following attachments including a news release announcing the recognition.

Michigan State Housing Development Authority A Study in Sustainability – LEED Certification

# ATTACHMENTS Michigan State Housing Development Authority A Study in Sustainability-LEED Certification

## Michigan State Housing Development Authority



Lansing, Michigan

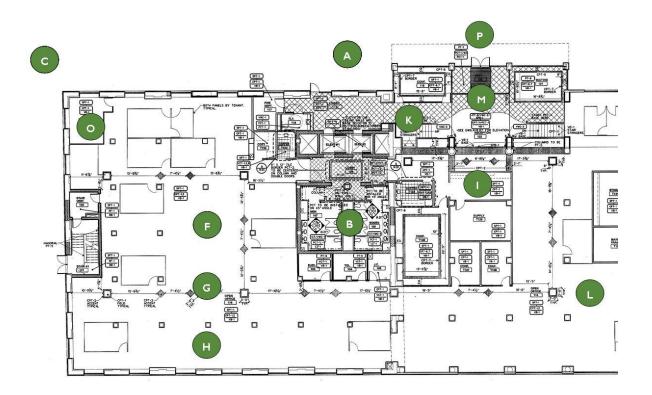
## A STUDY IN SUSTAINABILITY

The Michigan State Housing Development Authority (MSHDA), established in 1966, enhances Michigan's economic and social health through housing and community development activities. MSHDA invests in people and places in order to build a strong and vibrant Michigan. We forge create and collaborative partnerships, share knowledge and target resources to improve quality of life.

In 2000 MSHDA completely gutted and rebuilt the existing State of Michigan Library Building located at 735 Michigan Ave. Lansing, Michigan (originally constructed in 1928). The 105,500 square foot building is used as office space. Annual energy consumption averages 1,340,000 kWh and 19,000 therms at a cost of \$172,000. The facility is 100% occupied, typically Monday - Friday 7:30AM - 5:30PM, with an average of 270 occupants during typical use.

In an effort to synchronize the Authority's sustainability goals, MSHDA began to research the efficacy of pursuing a LEED – Existing Buildings Operations & Maintenance (LEED-EB: O&M) certification for the MSHDA office building in Lansing in 2012. LEED for Existing Buildings: O&M promotes the ongoing implementation of leading practices in building operations and sustaining high levels of performance. Built-in prescriptive and performance strategies are intended to provide operational benefits throughout the life of the building. By sustaining these strategies, the building can maintain and even improve its performance over time.

At that point, the MSHDA Green Initiatives Group (GIG) had prioritized three main areas of focus: support and Technical Assistance for external projects, developing green policies and procedures, and improving the efficiencies and ongoing sustainability of internal operations. In addition to sending a clear message to public and private partners that the Authority was serious about "practicing what we preach" in our support of place making and economic gardening initiatives, pursuit of a LEED-EB: O&M certification would simultaneously address all three GIG focus areas. In early 2013 MSHDA elected to enroll the project in the LEED v4 Beta Program. The initial LEED-EB: O&M Performance Period was January through December 2013. MSHDA was awarded the first LEED v4-EB: O&M Silver Certification in Michigan in early 2014. Tours may be arranged, by appointment, by calling Peter Hughes at (517) 373-3980.





Landscape plantings were selected that need less water and irrigation schedules were fine-tuned reducing use of potable water by 36%



A Site Management Policy requires the use of sustainable site maintenance practices such as ice melt chemicals that are less harmful to rivers and streams

HVAC and lighting systems are well main-

tained and employ efficient equipment and

technologies resulting in an Energy Star



A 21% reduction in potable water and sewage usage was achieved by selection of water efficient retrofit kits for plumbing faucets and flush valves

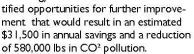


The building's location is conducive for alternative transportation reducing the use of fossil fuels



Light pollution is reduced by the use of full cut-off light fixtures and low wattage LED flag pole lights.

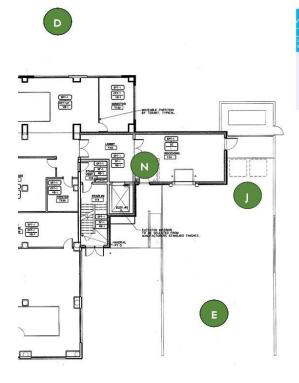
score of 84, on a scale of 1-100 An energy audit was conducted that iden-





G

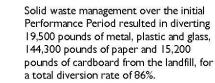
Carbon offsets were purchased to offset 100% of the electricity and natural gas used. Annually 3,535,970 pounds of CO<sup>2</sup> emissions will be offset, which is equivalent to taking 334 cars off the road or planting 41,125 trees.







Detailed Ongoing Purchasing and Waste Management as well as Facility Maintenance and Renovations Policies were developed and implemented.





Low mercury, long life lamps that are 22% more energy efficient were installed throughout the building.



Low-emitting carpeting, wall base and adhesives, used for the flooring upgrade project, met rigorous VOC standards. M

An indoor air quality management plan was implemented that included verification of ventilation air quality and quantities, enhanced air filters and placement of walk-off entrance mats to reduce contaminants.



An Integrated Pest Management program is used in order to protect the health of the occupant and to prevent harm to the environment.



A Green Housekeeping program is used in order to protect the health of the occupants and to not cause harm to the environment. All toilet room paper products and trash bags are manufactured from recycled materials.



The building is used as an educational tool and provides for a clear message to public and private partners that the Authority is serious about "practicing what we preach" in our support of place making and sustainable, healthy, efficient construction.

## SUSTAINABLE HIGHLIGHTS

#### SUSTAINABLE SITE/LOCATION & TRANSPORTATION

A comprehensive Transportation Survey was conducted to determine how building occupants got to work each day. The survey determined that 36% of employees and visitors used alternative forms or transportation such as carpooling, biking, walking or busses to get to the building. A detailed Site Management Policy was developed to preserve ecological integrity and encourage environmentally sensitive site management practices. Full cut-off exterior lights are used to reduce light pollution.

#### WATER EFFICIENCY

Landscape plantings were selected to require less irrigation and watering schedules were fine-tuned resulting in a 36% reduction in the use of potable water. In addition, a 21% reduction in indoor potable water and sewage usage was achieved by careful selection of retrofits for plumbing faucets and flush valves to increase water efficiency. Water usage is monitored and cooling tower consumption was fine-tuned.

#### **ENERGY EFFICIENCY**

An in-depth energy audit was conducted on the MSHDA building. Even though the building has been operating efficiently, opportunities for improvement were identified by the energy audit. Operations and maintenance (O&M) measures and capital energy efficiency measures were identified that would result in an estimated \$31,500 in annual savings. In 2013, all of the O&M measures and 4 of the capital measures were implemented at a cost of \$18,500 with estimated annual energy saving of \$15,000 resulting in a 1.23 year payback. Carbon offsets were purchased to offset 100% of the electricity and natural gas used. Annually 3,535,970 pounds of CO<sup>2</sup> emissions will be offset, which is equivalent to taking 334 cars off the road or planting 41,125 trees.

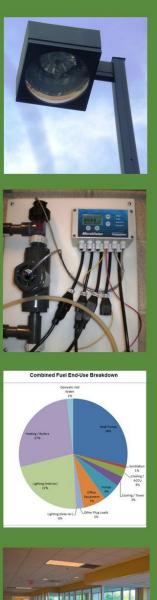
#### **MATERIALS AND RESOURCES**

Detailed Ongoing Purchasing and Waste as well as Facility Maintenance and Renovations Policies were developed and implemented. Solid waste management over the initial Performance Period resulted in diverting 19,500 pounds of metal, plastic and glass, 144,300 pounds of paper and 15,200 pounds of cardboard from the landfill, for a total diversion rate of 86%. Low mercury, long life lamps that are 22% more energy efficient were installed throughout the building. Sustainable carpeting and low VOC adhesives were used for the flooring upgrade.

#### INDOOR ENVIRONMENTAL QUALITY

An indoor air quality management plan was implemented that included verification of ventilation air quality and quantities, enhanced air filters and an Integrated Pest management program that largely eliminates the use of harmful chemicals. A Green Cleaning Program to reduce levels of chemical, biological, and particulate contaminants that can compromise air quality, human health, and the environment was also fully implemented.









Certificate & Letter



MSHDA's Peter Hughes, the project lead with official letter and certificate







## Monday, February 3, 2014

- <u>MSHDA's Award and</u> <u>Recognition Ceremony</u> <u>and Lunceon a Big</u> <u>Success</u>
- MSHDA Green Corner
- Detroit Office Wins Tim Horton Breakfast from MIX 92.3 FM Radio
- Important Message from the Green Team
- <u>Congratulations to</u> <u>MSHDA's 2014</u> <u>Leadership Academy</u> Candidates
- Homeownership Division
  Has Great Year Production Rises
  Drastically!
- <u>VME's SOUPer Bowl</u> <u>Thursday Provides Staff</u> <u>with Fun AND a Wide</u> <u>Variety of Super Soups!</u>
- <u>Detroit Office Celebrates</u> with Soup and Salad Bar
- <u>Wife of Wayne State</u> <u>University President</u> <u>Wages War on Student</u> <u>Homelessness</u>
- <u>Volunteers Work to Count</u> Homeless in Lansing
- Detroit Comes Together
  to Connect Arts-Culture

Important Message from the Green Team



As you all know, MSHDA is known for its many events where food is served. The Green Team urges each of you to bring <u>REUSABLE</u> tableware to each event whether it is a VME, all-staff or HR occasion. If we each bring our own plates, bowls, silverware and cups each and every time food is served, we can do a lot to reduce our carbon footprint as well as save money, enabling even more fun and exciting all-staff happenings. To make it even easier, keep your tableware handy in your office space so you will be ready whenever the occasion arises. And you never know, your efforts may be rewarded by winning a Green Team raffle prize. The Green Team thanks you for your good environmental stewardship!

Congratulations to MSHDA's 2014 Leadership Academy Candidates

## Campaign

- <u>MSHDA Employee</u> <u>Announces Birth of First</u> <u>Great-Grandchild</u>
- <u>MSHDA Wins Awards at</u> <u>the NCSHA Annual</u> <u>Conference</u>
- Iconic Michigan Bell Building Rededicated as Center For Homeless
- MSHDA Awards More
  Than \$1 Million in
  Housing Resource Fund
  Grants to Five Counties
- <u>Compliance Unit and</u>
  <u>Asset Management</u>
  <u>Division Win Award for</u>
  Innovation and Teamwork
- Homeless Care
  Providers Gear Up for
  National Homeless
  Awareness Month AND
  Homeless Awareness
  Week

## **Engage With MSHDA**

Feel free to re-tweet, re-post, join in conversations and share MSHDA social media postings with your friends and followers on your social media sites. See how by clicking here.



## Introducing the MSHDA "Green Corner" in the MMN

Look for green tips and status reports from the Green Initiatives Group (GIG) in the Monday Morning News (MMN)



The Green Initiatives Group (GIG) is a group of MSHDA employees just like you who have a burning desire to be environmentally responsible both at the office and at home. The *Green Corner* is intended to help in communicating that mindfulness to internal staff and to our developer community.

Look for the Green Corner (beginning today) in the left hand column of the MMN for useful tips, interesting links and articles, MSHDA green projects and events and status reports on MSHDA's journey toward becoming the first state agency to achieve LEED certification.

If you would like to join the troops here at MSHDA to make a difference, join the GREEN TEAM by emailing or calling Peter Hughes and expressing your interest at hughesp@michigan.gov or 517.373.3980.

## Green Team Gets LEED Tour of MSHDA Building



As MSHDA gets closer to achieving LEED certification for the Lansing office, the Green Team gathered in the lobby last week for a guided tour from Gavin Gard (pictured above, front row center), the LEED consultant working with MSHDA for the certification.



Did you ever wonder where the "P" on the north elevator would take you? It goes to the penthouse, the heart of the Lansing facility. Green Team members had the opportunity to see what keeps our building running energy efficiently and cost effectively



Solid waste management over the initial performance period resulted in diverting 19,500 pounds of metal, plastic and glass, 144,300 pounds of paper and 15,200 pounds of cardboard from the landfill, for a total diversion rate of 86 percent. A great deal of credit goes to staff for taking the initiative to recycle whenever possible!



The process to become LEED certified is an arduous one and Peter Hughes (Downtown and Community Services) and his team have done an amazing job. You will be able to see more of the entire project in a case study posted to the Green Initiatives Group (GIG) web page as well as a tour of the sustainable features of the Lansing MSHDA facility in the near future. Stay tuned to the MMN and the "Green Corner" for updates.



USGBC 2101 L STREET, NW SUITE 500 WASHINGTON DC 20037 202 828-7422 USGBC.ORG

PRESIDENT, CEO & FOUNDING CHAIRMAN S. Richard Fedrizzi

OFFICERS CHAIR George Bandy Jr. Interface

CHAIR ELECT Marge Anderson Energy Center of Wisconsin

IMMEDIATE PAST CHAIR Allan Skodowski Jr. Transwestern

TREASURER Stuart Carron ENERGIZE RE, LLC SECRETARY

Elizabeth Whalen CalAg, LLC

FOUNDERS David Gottfried Michael Italiano S. Richard Fedrizzi March 12, 2014

Scott Woosley, CFA Executive Director Michigan State Housing Development Authority 735 East Michigan Avenue Lansing, MI 48912

Greetings,

On behalf of the U.S. Green Building Council, I would like to congratulate you on achieving Leadership in Energy and Environmental Design (LEED®) certification for Michigan State Housing Development Authority. Your project's final LEED rating reflects 55 documented and approved points, which corresponds to the Silver certification level under the LEED v4 for Building Operations and Maintenance Rating System.

LEED certification identifies Michigan State Housing Development Authority as a pioneering example of sustainable design and demonstrates your leadership in transforming the building industry. In honor of this impressive achievement and in appreciation of your participation in LEED, we are pleased to present you with the enclosed certificates recognizing your accomplishment.

We encourage owners of certified projects to enroll in USGBC's Building Performance Partnership (BPP). BPP allows building owners to track and analyze operational performance relative to LEED credit achievement. USGBC's BPP participants are eligible for annual performance reports, report cards and real-time data interfaces to aid in their building performance goals. For information on BPP: www.usgbc.org/bpp. If you have any questions or comments, please contact us at www.usgbc.org or www.gbci.org.

Congratulations once again on earning LEED certification, and thank you for your commitment to our common goal of building a healthy, sustainable future.

Sincerely,

S. Richard Fedrizzi President, CEO & Founding Chairman U.S. Green Building Council

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FOR IMMEDIATE RELEASE

Contact: Katie Bach 517.335.4786 bachk@michigan.gov

June 30, 2014

# MSHDA is First State Government Agency in Michigan to Earn LEED Certification for Lansing Office

LANSING, Mich. -- Scott Woosley, executive director of the Michigan State Housing Development Authority (MSHDA), today announced MSHDA has been awarded LEED" Silver certification by the U.S. Green Building Council (USGBC). The LEED rating system is the foremost program for buildings, homes and communities that are designed, constructed, maintained and operated for improved environmental and human health performance.

MSHDA is the first State of Michigan agency to achieve LEED status for its 735 E. Michigan Ave., Lansing office. It's a 105,500-square-foot, four-story rented building that on any given day has about 270 employees.

"This achievement shows our commitment to the goal of building a healthy, sustainable future," Woosley said. "The relatively small, incremental changes we have implemented have resulted in big benefits, including a healthier and more energy efficient building, and long-term cost savings. We believe these are best practices that can and should be replicated on MSHDA-funded projects whenever possible."

Peter Hughes, LEED-accredited sustainable development specialist in MSHDA's Downtown and Community Services Division, spearheaded the 18-month effort, aided by facility and office services staff, including Chris Hudson, Keith Tripp and Deanna Anderson. Receiving the green light from MRT Management staff, rental property managers of the MSHDA building, was instrumental in getting the project off the ground.

"We took this on because we wanted to practice what we were preaching about building energy efficient, durable housing for the people we are here to serve," Hughes said. "It was hard for me to look at a developer and say, 'You should take on these cost premiums,' because when I looked around our own 'house' I saw that we didn't have single stream recycling, energy efficient light fixtures or efficient water usage. Now, we can say to developers, 'Look, we did it, under budget, on time, and it shouldn't be that complicated for you to do it, too.""

MSHDA managers approved the \$85,500 budget, based on the project funding itself in 4-1/2 years. That included consulting costs, lighting and water fixture changes, new landscaping and changing policies and procedures and doing some fine-tuning based on an energy audit.

"Everyone was pleasantly surprised when we ended up with more savings than anticipated at a lower cost," Hughes said. Actual project costs came in at \$59,431, a 30 percent savings. While 10 percent energy savings and 15 percent water savings were projected, the savings came in at 10 percent and 21 percent, respectively. The end result is savings of \$17,000 a year, meaning the project will be paid off in 3-1/2 years.

Hughes said he enjoyed bird-dogging the project, but lauded consultant Gavin Gardi of The Christman Company and G2 Consulting, Inc., for helping pave the way in achieving the LEED v4 Beta Program objectives and the extra help they got from the USGBC for participating in the more rigorous pilot program. The MSHDA project was the second LEED v4 0+M certified in the world.

"MSHDA is committed to sustainable, healthy buildings, so as LEED projects go, this was not a heavy lift," Gardi said. "MSHDA had the team to drive and nurture the project along. I worked in tandem with them to offer a complete range of experience-based professional services from reviews, team assignments, evaluation, tracking and documentation until the project received certification."

Here are just some of the project highlights:

- Less irrigation and watering of landscaping resulted in a 36 percent reduction in the use of potable water
- Reduced indoor water and sewage usage by 21 percent with retrofits for plumbing faucets and flush valves
- Diverted 19,500 pounds of metal, plastic and glass, 144,300 pounds of paper and 15,200 pounds of cardboard from the landfill for a total diversion rate of 86 percent
- Heat pump-based HVAC and lighting systems are well maintained and employ efficient equipment and technologies resulting in an Energy Star score of 84 (on a 100-point scale)
- Switched to low mercury, long life lamps that are 22 percent more energy efficient
- Sustainable carpeting and low volatile organic compounds (VOC) adhesives were used in flooring upgrade
- A green housekeeping program is used to protect the health of staff and to not cause harm to the environment

"MSHDA's LEED certification demonstrates tremendous green building leadership," said Rick Fedrizzi, president, CEO and founding chair of the U.S. Green Building Council. "The urgency of USGBC's mission has challenged the industry to move faster and reach further than ever before, and MSHDA serves as a prime example with just how much we can accomplish."

Hughes said another satisfying aspect of the certification process has been seeing a significant culture shift at MSHDA, in the way people go about doing things and wanting to be green on a daily basis.

"When I looked at the various certification tracts that LEED offered, I knew we were never going to build a brand new office that would be solar paneled, all glass so no one needs lights which would be sunlit and amazing. But I thought, wouldn't it be even more satisfying to take an existing building and make it into something better. I'm proud to say we achieved that."

For those interested in learning more about MSHDA's LEED certification, Hughes offers tours of the building. To schedule a tour, call 517.373.3980.

The Michigan State Housing Development Authority (MSHDA) provides financial and technical assistance through public and private partnerships to create and preserve decent, affordable housing for low- and moderate-income residents and to engage in community economic development activities to revitalize urban and rural communities.\*

\*MSHDA's loans and operating expenses are financed through the sale of tax-exempt and taxable bonds as well as notes to private investors, not from state tax revenues. Proceeds are loaned at below-market interest rates to developers of rental housing, and help fund mortgages and home improvement loans. MSHDA also administers several federal housing programs.

For more information, visit <u>www.michigan.gov/mshda</u>.