

# ANN ARBOR HISTORIC DISTRICT COMMISSION

## Staff Report

**ADDRESS:** 224 Eighth Street, Application Number HDC13-177

**DISTRICT:** Old West Side Historic District

**REPORT DATE:** October 10, 2013

**REPORT PREPARED BY:** Jill Thacher, Historic Preservation Coordinator

**REVIEW COMMITTEE DATE:** Monday, October 7, 2013

### OWNER

**Name:** Veronica Richard  
Gary Hayenga  
**Address:** 224 Eighth Street  
Ann Arbor, MI 48103  
**Phone:** (734) 763-7191

### APPLICANT

Meadowlark Energy, LLC  
  
3250 W Liberty Rd  
Ann Arbor, MI 48103  
(734) 619-8024

**BACKGROUND:** This 2 ½ story L-shaped home features corner returns on the front and side gables and a full-width front porch. It first appears in Polk City Directories in 1916 as the home of contractor Frederick C. Breisch and his wife Emma. From 1917 to at least 1940, Ida Zahn lived in the home.

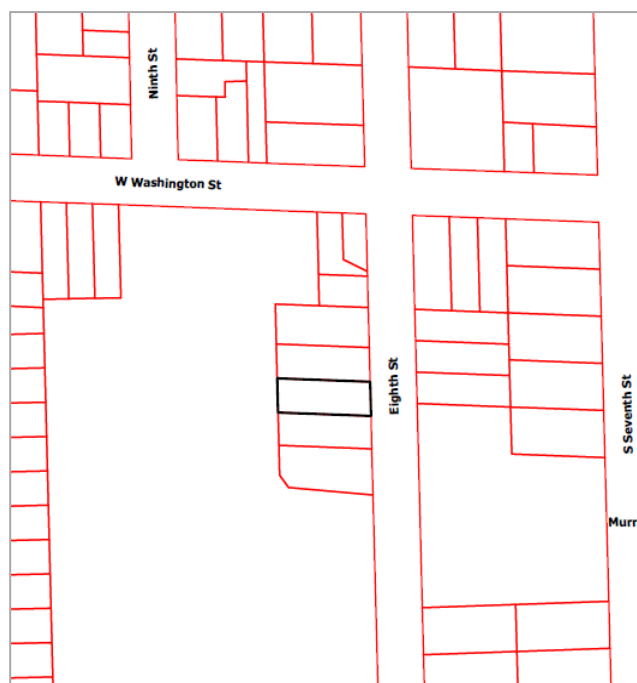
**LOCATION:** The site is located on the west side of Eighth Street, south of West Washington and north of West Liberty.

**APPLICATION:** The applicant seeks HDC approval to install solar shingles on two roof faces and asphalt shingles on the remainder. The south-facing roof would have 201 square feet of solar shingles, and the west-facing roof would have 91 square feet. Meters would be located inside the attached carport.

### APPLICABLE REGULATIONS:

#### From the Secretary of the Interior's Standards for Rehabilitation:

- (2) The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
- (9) New additions, exterior alterations, or related new construction shall not destroy historic materials that



characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

- (10) New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

### **From the Secretary of the Interior's Guidelines for Rehabilitating Historic Buildings:**

#### **Roofs**

Recommended: Identifying, retaining, and preserving roofs--and their functional and decorative features—that are important in defining the overall historic character of the building.

Not Recommended: Changing the configuration of a roof by adding new features such as dormer windows, vents, or skylights so that the historic character is diminished.

#### **Energy Efficiency**

Recommended: Placing a new addition that may be necessary to increase energy efficiency on non-character-defining elevations.

Not Recommended: Designing a new addition which obscures, damages, or destroys character-defining features.

### **From the Ann Arbor Historic District Design Guidelines (other Guidelines may apply):**

#### **Solar**

Appropriate: Mounting solar panels at grade or on ground pole mountings. In the absence of an appropriate ground-based mounting location, panels should be mounted on side or rear facing roof surfaces.

Installing mechanical and service equipment on the roof related to the solar units and their related devices so that they are inconspicuous from the public right-of-way and do not damage or obscure character-defining features.

For sloped roof installations, mounting solar panels parallel to and within 8" of roof surface.

Not Appropriate: Mounting solar panels and their related devices on primary elevations or roofs that face the primary elevation or in planes that are highly visible from the street view. This location has the highest impact on the historic character of the historic building and all other options should be thoroughly explored.

Any other alteration or installation procedure that will cause irreversible changes to historic features or materials.

**STAFF FINDINGS:**

1. The Dow Powerhouse solar shingles have a 10" by 22.8" reveal, and are ½" thick. The surface is glassy, like a regular solar panel, but the profile is flush with the asphalt roofing. Some photos of the shingles installed on other houses are included at the end of this report. On the south-facing roof, the array would be 10'10" tall by 20' wide and centered on the roof face. The west-facing roof's array would be 5' by 18'1". Both would be installed approximately 2' from the eave and rake edges of the roof.
2. The new asphalt shingles would be dark gray, slightly darker than the current roof shingles.
3. The west roof face is not visible from the street or sidewalk. The south roof face is quite high off the ground, since the house is a full two stories and the slope of the lot is six feet lower on the south side of the house than the north side.
4. Staff believes that the materials and design of the solar shingles are compatible with the existing structure, neighboring buildings, and the surrounding historic district, and meet both the Secretary of the Interior's Standards and the *Ann Arbor Historic District Design Guidelines*.

**POSSIBLE MOTIONS:** (Note that the motion is only a suggestion. The Review Committee, consisting of staff and at least two Commissioners, will meet with the applicant on site and then make a recommendation at the meeting.)

I move that the Commission issue a certificate of appropriateness for the application at 224 Eighth Street, a contributing property in the Old West Side Historic District, to install 201 square feet of solar shingles on the south-facing roof and 91 square feet of solar shingles on the west-facing roof, and asphalt shingles on the remainder. As proposed, the work is compatible in exterior design, arrangement, texture, material and relationship to the rest of the building and the surrounding area and meets *The Secretary of the Interior's Standards for Rehabilitation* and *Guidelines for Rehabilitating Historic Buildings*, in particular standards 2, 9 and 10 and the guidelines for roofs and energy efficiency, as well as the *Ann Arbor Historic District Design Guidelines*, particularly as they pertain to solar installations.

**MOTION WORKSHEET:**

I move that the Commission issue a Certificate of Appropriateness for the work at 224 Eighth Street in the Old West Side Historic District

\_\_\_\_\_ Provided the following condition(S) is (ARE) met: 1) STATE CONDITION(s)

The work is generally compatible with the size, scale, massing, and materials and meets the Secretary of the Interior's Standards for Rehabilitation, standard(S) number(S) (*circle all that apply*): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

**ATTACHMENTS:** application, drawings, photo, technical information.

224 Eighth Street (2008 Survey Photo, showing north and east roof faces)



Other 2013 installations of solar shingles (from Dow's facebook page)  
*Saginaw, MI*



*Long Island, NY*







## City of Ann Arbor

### PLANNING & DEVELOPMENT SERVICES — PLANNING SERVICES

Mailing: 301 E. Huron Street | P.O. Box 8647 | Ann Arbor, Michigan 48107-8647

Location: Larcom City Hall | First Floor | 301 E. Huron St. | Ann Arbor, MI 48104-6120

p. 734.794.6265 | f. 734.994.8312 | [planning@a2gov.org](mailto:planning@a2gov.org)

### ANN ARBOR HISTORIC DISTRICT COMMISSION APPLICATION

#### Section 1: Property Being Reviewed and Ownership Information

Address of Property: 224 8TH STREET

Historic District: OWS

Name of Property Owner (If different than the applicant):

VERONICA RICHARD / GARY HAYENGA

Address of Property Owner: 224 8TH ST.

Daytime Phone and E-mail of Property Owner: 734-763-7191 vrichard@umich.edu

Signature of Property Owner: Gary Hayenga Date: 9/19/13

#### Section 2: Applicant Information

Name of Applicant: MEADOWLARK ENERGY, LLC

Address of Applicant: 3250 W. LIBERTY RD

Daytime Phone: (734) 619-8024 Fax: (734) 619-8025

E-mail: info@meadowlarkenergy.com

Applicant's Relationship to Property: owner architect ☒ contactor other

Signature of applicant: [Signature] Date: 9/19/13

#### Section 3: Building Use (check all that apply)

☒ Residential ☒ Single Family ☐ Multiple Family ☐ Rental

☐ Commercial ☐ Institutional

#### Section 4: Stille-DeRossett-Hale Single State Construction Code Act

(This item **MUST BE INITIALED** for your application to be **PROCESSED**)

Public Act 169, Michigan's Local Historic Districts Act, was amended April 2004 to include the following language: "...the applicant has certified in the application that the property where the work will be undertaken has, or will have before the proposed completion date, a fire alarm or smoke alarm complying with the requirements of the Stille-DeRossett-Hale Single State Construction Code Act, 1972 PA 230, MCL 125.1501 to 125.1531."

Please initial here: DS

**Section 5:**

**1. Provide a brief summary of proposed changes:**

- a. Re-roofing with asphalt shingles. South and West sides would receive Dow Powerhouse Solar Shingles in the pattern shown on the attached documentation.
- b. West side is not visible from the street. South side is visible.
- c. Color of new shingles would be similar to existing shingles, but slightly darker.
- d. Solar shingle surface looks “glassy” and has a different texture from the asphalt shingles, but are a shingle material and are significantly less obtrusive than traditional solar panels.

**2. Provide a description of existing conditions:**

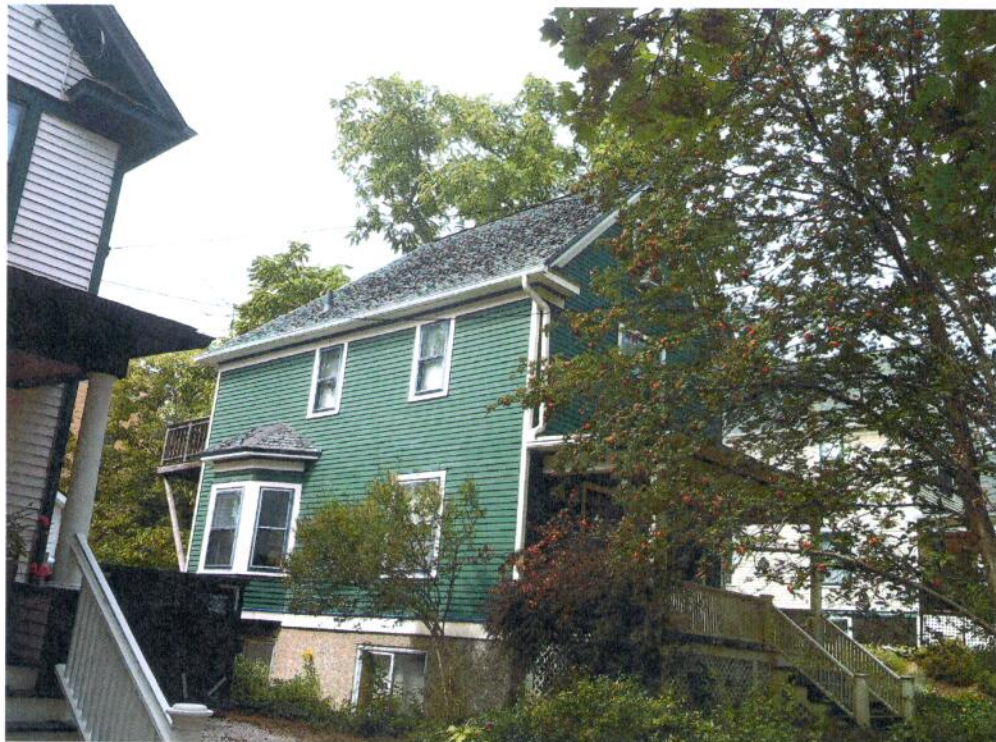
- a. Asphalt shingles in poor condition.

**3. What are the reasons for the proposed changes?**

- a. A new roof is needed and solar electricity production is desired to make the home more efficient. It is an opportunity to green the historic house with a part of the home (the roof) that needs replacement, and is not historic.

**4. Attach any additional information that will further explain or clarify the proposal, and indicate these attachments here.**

- a. Proposed solar shingle diagrams attached
- b. Picture of South side roof below as visible from the street
- c. Literature from Dow Solar attached.





**Section 5: Description of Proposed Changes (attach additional sheets as necessary)**

1. Provide a brief summary of proposed changes.

- Re-roofing w/ Solar shingles + Asphalt shingles
- Color similar to existing shingles
- Solar shingles are "shiny" and look different from asphalt shingles, but match the dimensional profile

2. Provide a description of existing conditions. asphalt shingles

in poor shape - dark gray & weathered

3. What are the reasons for the proposed changes?

need a new roof

Solar production desired

4. Attach any additional information that will further explain or clarify the proposal, and indicate these attachments here.

- Proposed solar diagrams attached

- These are solar panels shaped like individual roof shingles for use on South & West side - South side visible from street

5. Attach photographs of the existing property, including at least one general photo and detailed photos of proposed work area.

**STAFF USE ONLY**

Date Submitted: \_\_\_\_\_ Application to \_\_\_\_\_ Staff or \_\_\_\_\_ HDC

Project No.: HDC Fee Paid: \_\_\_\_\_

Pre-filing Staff Reviewer & Date: \_\_\_\_\_ Date of Public Hearing: \_\_\_\_\_

Application Filing Date: \_\_\_\_\_ Action: \_\_\_\_\_ HDC COA \_\_\_\_\_ HDC Denial

Staff signature: \_\_\_\_\_ \_\_\_\_\_ HDC NTP \_\_\_\_\_ Staff COA

Comments:



1080 PD A1

STC system rating - DC Watts:  
Est. 1st year production - AC kWh:  
Total Sq. Ft. Roof Area / Solar Array Area:

2088  
2135 < 3 >  
2023 / 291.9

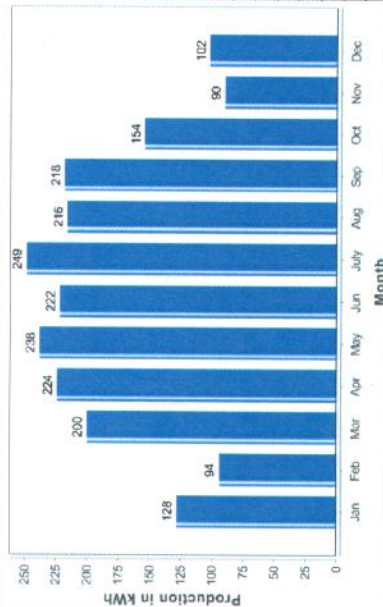
## Project Overview

**Builder:** Meadowlark Energy  
Dow Solar Contact: John Horwath (989) 636-5681  
**Electric Utility:** Detroit Edison Co.

NOTES:

1. Drawings are per NEC2011. Project design must be evaluated against local governing codes.
2. Installation shall be consistent with Dow Solar installation specifications and the National Electric Code.
3. Estimated first year production reflects shading impact. Shading analysis based on supplied Solmetric SunEye measurements.

ESTIMATED 1ST YEAR PRODUCTION (kWh) &lt; 3 &gt;



Annual	2135
Jan	128
Feb	94
Mar	200
Apr	224
May	238
Jun	222
July	249
Aug	216
Sep	218
Oct	154
Nov	90
Dec	102

## System Data

STC system rating - DC Watts:

Est. 1st year production - AC kWh:

Total Sq. Ft. Roof Area / Solar Array Area:

2088

2135 &lt; 3&amp;gt

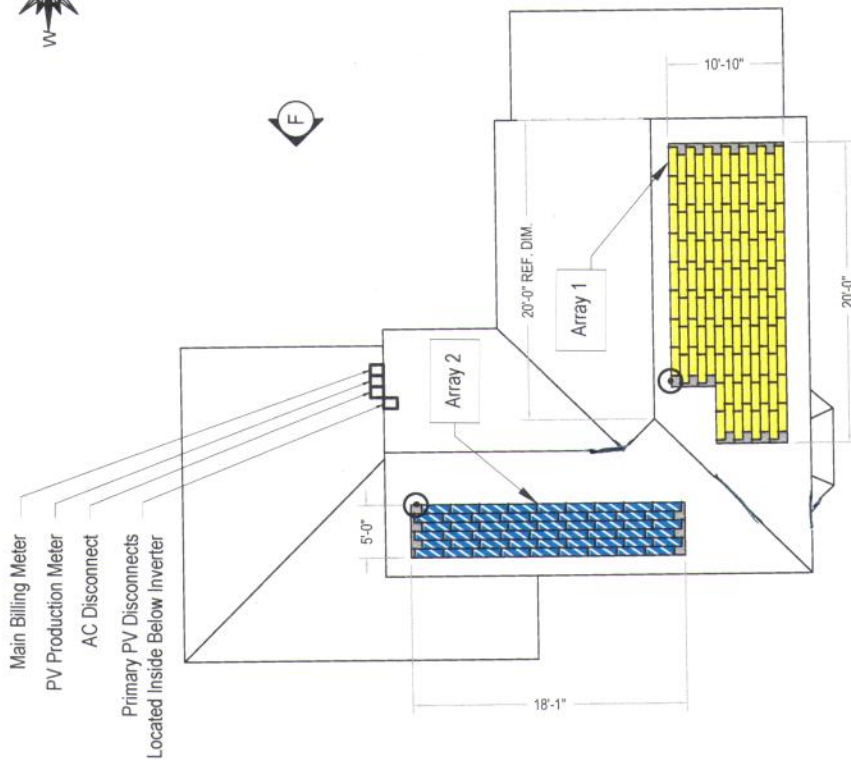
2023 / 2919

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1

Array #	Inverter #	String #	Pitch	Solar Azimuth	True North Azimuth	Shingles	DC Watts	Sq. Ft
1	1	1	12:12	1°E	179°	120	1440	201.2
2		2	12:12	89°W	269°	54	648	90.7
Totals						174	2088	291.9

REV	Change Description	DRW	RW	APV	Date
A	SurfEye Information	EMC	NA	BSS	06/02/2013

224 8TH ST.  
ANN ARBOR, MI 48103

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documented permission in any  
media format is strictly prohibited.

EMC	Drawn By:	Scale:	NTS	Reviewed:	DLA	Approved:	BSB	Date:	04/02/
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**Dow Solar**  
(855) 369-7657  
200 Larkin  
1605 Joseph Dr  
Midland, MI 48674

**POWERHOUSE**  **SOLAR**  
Dow Solar Project ID: 1080\_PD\_A1

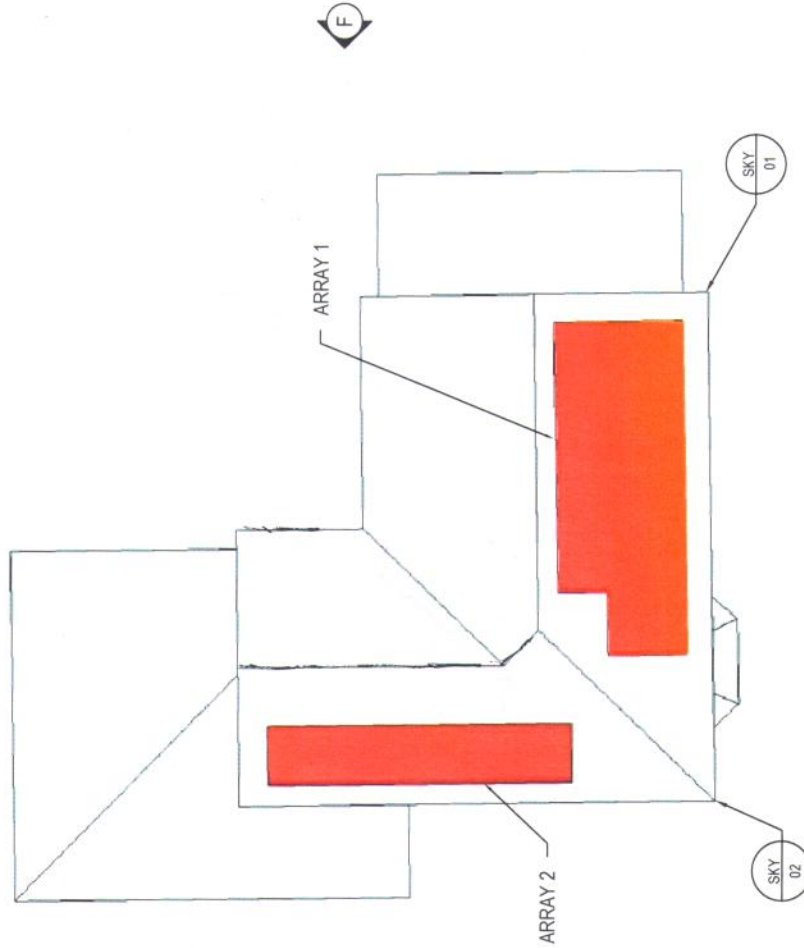
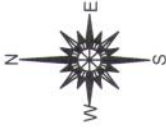
Sheet  
G1

224 EIGHTH STREET

# Shading Analysis - With Solmetric SunEye Measurements Included

Array	Strings	Percentage of Shade	Shading Objects	Estimated Unshaded Annual Yield (kWh)	Estimated Shaded Annual Yield (kWh)
1	1	4.40%	Impact of shade caused by trees	2206	2135
2	2	0.64%	Impact of shade caused by the chimney .		

<Notes>:  
 1. Solmetric SunEye tool measurements have been taken at the indicated locations and are incorporated into the shading analysis.



3 SHADING ANALYSIS  
 REF: DOW SOLAR SCALE: NTS

224 EIGHTH STREET



# POWERHOUSE™

 SOLAR

The hardworking Solar Shingle that  
protects your home and powers your life.





## Renewable energy from a remarkable source.

The DOW POWERHOUSE™ Solar Shingle system installs and protects like a typical asphalt shingle while offering so much more. It also generates clean, renewable energy to power a home. And that's energy you're making — not purchasing from your local utility company. With POWERHOUSE Solar Shingles, it's sustainability, energy savings and seamless design all in one. Welcome to the roof, reinvented.

### Dual functionality

- Protects as a roofing material and provides renewable energy.

### Integrated aesthetics

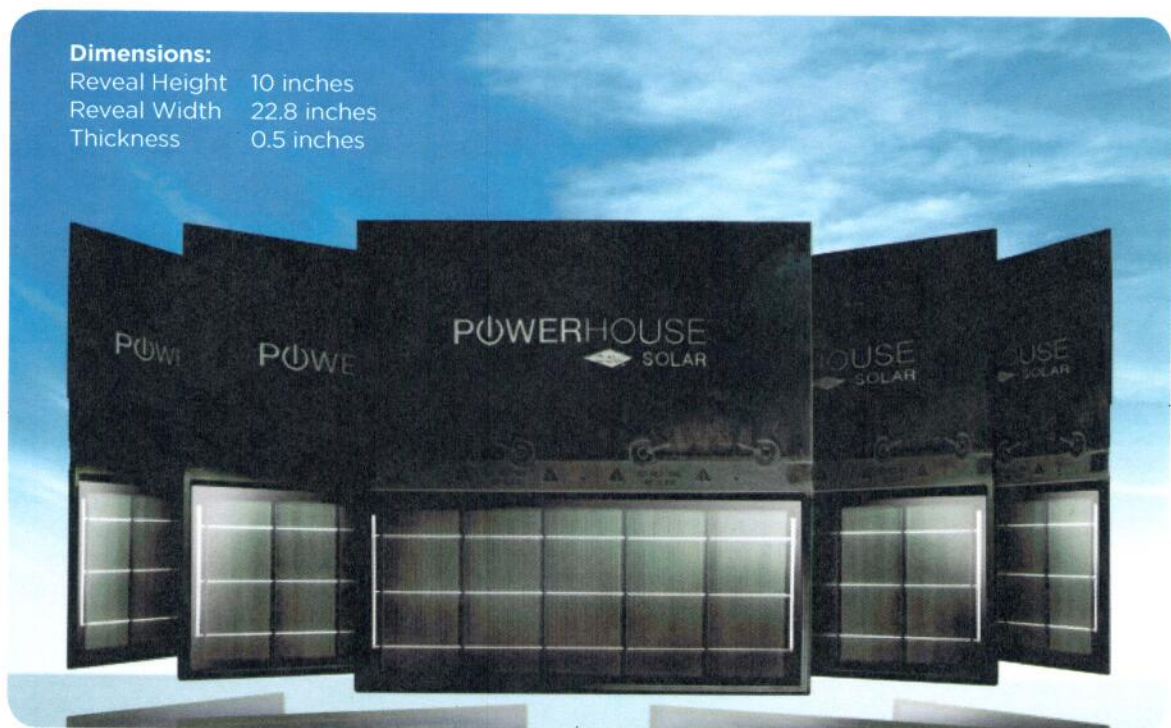
- A custom-designed, building-integrated photovoltaic solution for asphalt-composition shingle roofs that installs flush with asphalt shingles.

### Ease of installation

- No on-roof wiring required. Nails directly to the roof deck, just like traditional asphalt shingles.

### Excellence guaranteed

- Manufactured in Michigan and backed by The Dow Chemical Company, these durable shingles withstand sun exposure, extreme temperatures, wind, hail and other inclement weather.



**POWERHOUSE™ Solar Shingles** feature photovoltaic technology consisting of flexible Copper Indium Gallium diSelenide (CIGS) shingles with high transmission tempered glass.



## DOW POWERHOUSE™ Solar Shingles. A complete solution.

**1** DOW POWERHOUSE™ SOLAR SHINGLE ARRAY  
Custom designed to fit your energy goals and the design features of your home.

**2** MONITORING  
Real-time readouts show how much energy your system is creating and how much your home is using.

**3** INVERTER  
Converts the direct current (DC) to usable alternating current (AC), which powers the home.

**4** NET METERING  
Receive credit for the energy you create.



Made in U.S.A.



## Better technology for a better world.

Dow puts its POWERHOUSE™ Solar Shingles through round after round of testing. From hail and torrential rain to high winds and high temperatures, our Solar Shingles have passed and earned certifications for both performance and safety — providing homeowners with excellent protection while generating significant savings season after season.

### Safety, durability and performance certifications.



#### UNDERWRITERS LABORATORY

- UL 1703 Flat-Plate Photovoltaic Modules and Panels: Safety standard for photovoltaic solar modules and panels that helps ensure that they won't cause harm over a 20-year life span.
- UL 790 Standard Test Methods for Fire Tests of Roof Coverings: Safeguards against embers of one fire spreading to a neighboring house and causing another.
- CEC Class A Fire Rating: The most stringent rating available for exterior fire resistance.
- UL 746, 514 and 486: Sets of tests covering various components of the system.



#### INTERNATIONAL CODE COUNCIL EVALUATION SERVICE

- 2006, 2009, and 2012 International Building Code (IBC) • 2006, 2009, and 2012 International Residential Code.
- These codes cover all buildings and detached one- and two-family dwellings and townhouses up to three stories.
- In accordance with ICC ESR 2991, qualifies for wind zones up to 150 mph per Building Code Table R905.2.4.1(2).



#### INTERNATIONAL ELECTROTECHNICAL COMMISSION

- IEC 61646 Thin-film terrestrial photovoltaic (PV) modules: Covers much of the UL1703 testing while nominally ensuring that panels perform as advertised over their life.



#### CALIFORNIA ENERGY COMMISSION

- CEC-300-2011-005-CMF, Fourth Edition: A power rating test to help determine how much energy a panel will produce to help compare PV modules.



#### AMERICAN SOCIETY FOR TESTING AND MATERIALS

- ASTM D3161-09: A wind test to see how high of a wind speed is needed to rip the shingles off the roof.



#### THE DOW CHEMICAL COMPANY

- Backed by the strength of Dow and a 20-year performance warranty.

#### WARRANTIES

- 20-year material weatherization warranty and a 10-year wind retention warranty.
- 10-year and 20-year power output warranties.
- 10-year manufacturer's inverter warranty.

#### IMPACT RESISTANCE

- Impact resistance to hail: 1¼-inch diameter at 52 mph.

For more information on DOW POWERHOUSE, go to [dowsolar.com](http://dowsolar.com). Or, call 855.DOW.SOLR.

**POWERHOUSE™**  
DOW SOLAR

[dowpowerhouse.com](http://dowpowerhouse.com)



855.DOW.SOLR

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