



CITY OF DARIEN

SOLAR ENERGY SYSTEMS (SES) PERMIT GUIDELINES

This information sheet summarizes City code, plans requirements, inspections, and fees.
Revised January 2020

- **ZONING:** Building-mounted SES are permitted as an accessory use in all zoning districts. Questions may be directed to the City Planner, Jordan Yanke, jyanke@darienil.gov, 630-353-8113.
- **PERMITS:** For small-scale, standard SES design, permits are typically issued within 10 days after all documents submitted in person to the Community Development Department, Monday-Friday 8:30am-5:00 pm including:
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 - Building Permit application form
 - Contractor License application form with Certificate of Insurance and Bond
 - Plat of Survey with plan sketch showing where panels will be located with dimensions
 - Structural calculations signed and sealed by a licensed structural engineer that certifies that the mounted building wall or roof is structurally sound and will bear weight of the SES.
 - Construction plans in compliance with **2015 International Solar Energy Provisions Code** (See attached page for plan submittal requirements)
- **FEE:** \$215 for small scale, standard SES design. Total fee is payable by check or cash when permit is issued. (Additional fees may be required for large scale or non-standard SES designs.)
- **INSPECTIONS:** Two inspections are typically required (1) Final Electric (2) Final Building – when installation complete. To schedule inspections, call 630-353-8115 by 2:00 on business day before inspection requested. Inspections typically are done between 8:00 am-12:00 pm. Contractor must be present (Additional inspections may be required for non-standard SES or if roof or wall modifications are needed.)
- **QUESTIONS:** On permits and inspections may be directed to Mary Belmonte, mbelmonte@darienil.gov, 630-353-8115.

Signature _____

Solar PV Review Guideline
2015 IRC 2015 IBC 2015 IFC 2014 NEC 2015 ISEP and Amendments

- Provide a site plan showing the location of the array and major components.
- Provide a line diagram that shows the PV array configuration, conductors, conduit, overcurrent protection, inverter(s), disconnects, and point of utility interconnection.
- Provide specifications sheets for all equipment: modules, inverter, racking, etc.
- A licensed Illinois Structural Engineer is required to provide documentation verifying the existing roof structure is capable of supporting the new load. If any additional structural elements are required to be installed this shall be noted.
- Larger systems require a licensed Illinois Professional Engineer.
- Indicate the method of attachment (ie sheathing, rafter, etc.).
- Pathways shall comply with section 605.11 International Fire Code.
- Weather sealing at the attachment points shall comply with section 909.3 International Residential Code.
- AC and DC conductor size and type shall comply with Chapter 3 National Electric Code, and article(s) 690.7, 690.8, 690.31, 690.35, and 705.60 National Electric Code.
- Equipment grounding and bonding shall comply with UL 1703, UL 2703, and article(s) 690.43 and 690.45 National Electric Code.
- Overcurrent protection device shall comply with article(s) 690.8, 705.12 and 705.60 National Electric Code.
- All disconnecting means, types, and locations shall specified in accordance with article(s) 690.13-690.17 National Electric Code and/or utility.
- Provide details of all marking and labeling in accordance with section 605.11 International Fire Code and article(s) 690.17, 690.31, 690.53 and 690.56 National Electric Code.
- Provide a rapid shutdown system (RSS) in accordance with article 690.12 National Electric Code.
- Provide pictures at various stages showing the flashing at the attachment points and of the listed modules at the time of the final inspection.
- Indicate the size of the service and whether or not the service is new or existing.
- Fire classification shall comply with section 1505 International Building Code.
- Radiant barriers shall comply with section 1509 International Building Code.
- Roofing and flashing shall comply with section 1511 International Building Code.

EXPEDITED PERMIT PROCESS FOR SMALL-SCALE PV SYSTEMS

The information in this guideline is intended to help local jurisdictions and contractors identify when PV system installations are simple, needing only a basic review, and when an installation is more complex. It is likely that 50%-75% of all residential systems will comply with these simple criteria. For projects that fail to meet the simple criteria, resolution steps have been suggested to provide as a path to permit approval.

Required Information for Permit:

1. Site plan showing location of major components on the property. This drawing need not be exactly to scale, but it should represent relative location of components at site (see supplied example site plan). PV arrays on dwellings with a 3' perimeter space at ridge and sides may not need separate fire service review.
2. Electrical diagram showing PV array configuration, wiring system, overcurrent protection, inverter, disconnects, required signs, and ac connection to building (see supplied standard electrical diagram).
3. Specification sheets and installation manuals (if available) for all manufactured components including, but not limited to, PV modules, inverter(s), combiner box, disconnects, and mounting system.

Step 1: Structural Review of PV Array Mounting System

Is the array to be mounted on a defined, permitted roof structure? Yes No

If No due to non-compliant roof or a ground mount, submit completed worksheet for the structure WKS1.

Roof Information:

1. Is the roofing type lightweight (Yes = composition, lightweight masonry, metal, etc...) _____
If No, submit completed worksheet for roof structure WKS1 (No = heavy masonry, slate, etc...).
2. Does the roof have a single roof covering? Yes No
If No, submit completed worksheet for roof structure WKS1.
3. Provide method and type of weatherproofing roof penetrations (e.g. flashing, caulk) _____

Mounting System Information:

1. Is the mounting structure an engineered product designed to mount PV modules with no more than an 18" gap beneath the module frames? Yes No
If No, provide details of structural attachment certified by a design professional.
2. For manufactured mounting systems, fill out information on the mounting system below:
 - a. Mounting System Manufacturer _____ Product Name and Model# _____
 - b. Total Weight of PV Modules and Rails _____ lbs
 - c. Total Number of Attachment Points _____
 - d. Weight per Attachment Point (b ÷ c) _____ lbs (if greater than 45 lbs, see WKS1)
 - e. Maximum Spacing Between Attachment Points on a Rail _____ inches (see product manual for maximum spacing allowed based on maximum design wind speed)
 - f. Total Surface Area of PV Modules (square feet) _____ ft²
 - g. Distributed Weight of PV Module on Roof (b ÷ f) _____ lbs/ft²
If distributed weight of the PV system is greater than 5 lbs/ft², see WKS1.

Step 2: Electrical Review of PV System (Calculations for Electrical Diagram)

In order for a PV system to be considered for an expedited permit process, the following must apply:

1. PV modules, utility-interactive inverters, and combiner boxes are identified for use in PV systems.
2. The PV array is composed of 4 series strings or less per inverter.
3. The total inverter capacity has a continuous ac power output 13,440 Watts or less
4. The ac interconnection point is on the load side of service disconnecting means (690.64(B)).
5. One of the standard electrical diagrams (E1.1, E1.1a, E1.1b, or E1.1c) can be used to accurately represent the PV system. Interactive PDF diagrams are available at www.solarabcs.org/permitting.

Fill out the standard electrical diagram completely. A guide to the electrical diagram is provided to help the applicant understand each blank to fill in. If the electrical system is more complex than the standard electrical diagram can effectively communicate, provide an alternative diagram with appropriate detail.