

# SOLAR PERMITTING GUIDELINES



Effective August 15, 2018



## **Introduction**

Solar Permitting Process in the District	3
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## **Preparing the Plan Set**

Zoning Review	3
Construction Documents	4
Neighbor Notification	4
Electrical Engineering Review	4
Fire Engineering Review	4
Structural Engineering Review	4

## **The Solar Permit Application**

ProjectDox	6
Advantages	6
Cautions	6

## **Solar Permit Fees and Issuance**

Solar Electric (PV)	8
Solar Thermal	8
Building Permit Issuance	10
Permit Revisions	10
Inspections	10
Solar PV Agency Contacts	11
Supporting Resources	11



## CONSTRUCTION DOCUMENTS

This refers to scaled plans, specifications and details. All plans should be submitted as single-page PDF's and uploaded in the drawings folder of ProjectDox. Refer to the [ProjectDox User Manual](#) for further information. Further guidance on ProjectDox submittals is also offered below. The architectural plans should include roof layout and schematic detailing of the solar module and roof attachment details.

Engineering plans include electrical, fire protection, structural, plumbing, and mechanical (as applicable) details with associated calculations. Note, that extended calculations and engineering documentation can be uploaded in ProjectDox supporting documents tab.

A Site Plan includes the location of all major components including modules, inverter(s), disconnects, main electrical service, and meter. Please refer to the DCRA [ProjectDox Applicant User Guide](#) for further details on ProjectDox protocol.

## NEIGHBOR NOTIFICATION

DCRA has a [Neighbor Notification process](#), however, it is not typically required for solar projects unless they involve the installation of structural support of an adjacent building structure or the underpinning of a party wall. If the Code Official or designee determines a project does involve such work, the project is subject to Sections 3307.2 or 3307.3 of the building code, and the applicant will be required to provide neighbor notification pursuant to those sections of the DC Building Code.

A solar system attached to a party wall and “that could affect the structural integrity of a party wall” does not require neighbor notification, but pursuant to 3307.4:

*“[T]he person causing the work shall preserve the party wall from injury and ensure the structural stability of the party wall at said person’s own expense. The party wall shall be maintained weatherproof and structurally stable.”*

## ELECTRICAL ENGINEERING REVIEW

Submit a completed Standard Electrical Plan that includes the following:

- Location/position of the main service or utility disconnect (these can be on the Site Plan referenced above).
- Location of grid intertie (i.e. backfed breaker, lineside tap), and details of the connection. Note, that connections must be made inside rated boxes.
- Total number of modules, the number of modules per string, and the total number of strings.
- Make and models of inverters, combiner boxes, optimizers and other equipment.
- One-line or Three-line diagram of the system.
- Specify grounding/bonding connections & hardware, conduit type and size, the number and size of conductors in each section of conduit. Show calculations to verify proper temperature de-rating, etc.
- Equipment cut sheets including inverters, modules, racking systems, AC and DC disconnects and combiners, pumping stations, storage tanks, etc.
- Intended labeling of equipment as required by NEC sections 690 & 705 (and any other applicable code). See below.

## FIRE ENGINEERING REVIEW

PV systems shall meet code requirements in DC Fire Code 605.11. For commercial systems, this requires as a minimum a 4’ setback from all roof edges (sometimes 6’). The [DC Fire Code](#) is available online. Further requirements including maximum array size, etc. are present in the Fire Code.

## STRUCTURAL ENGINEERING REVIEW

Verify existing structural members, including beams, are in compliance with current building codes, including changes in snow load patterns caused by the modules (drifting and sliding snow), wind loads, dead loads of modules and their mounting system, ballast, etc., as well as, existing roof dead loads both for strength and deflection, as applicable.



Ground snow loads in Washington, DC are 25 psf residential and 30 psf commercial.

An optional Certification of Structural Design is available per 2013 DCMR 12A 106.1.4.1 which involves an application form and indications on related plan pages. The Code Official is authorized to accept the structural portions of the plans, thus certified at the Code Official's discretion. The engineering documentation should show clear evidence that the project was fully evaluated by the engineer.

**Note:** The applicant is responsible for coordinating with Pepco on all interconnection application requirements. Generally, that will initially include Part 1 of the Pepco Interconnection Application. You will have to receive "Permission to Install" from Pepco before starting the installation. For more details on the interconnection application process and the required forms, visit Pepco's NEM and Small Generator Interconnection website at [pepco.com/greenpowerconnection](http://pepco.com/greenpowerconnection).

# Solar Permit Application

Permitting begins online. Start the process at [dcra.dc.gov](http://dcra.dc.gov) at the [Online Construction Permit Intake](#) (OCPI). As you start the Construction Permit application process, select "Solar" as the service type: this will get you to the solar-specific permit application number that begins with "SOL" (ex. SOL159815). Several pages further, you will enter the details of the system. The precise fields required will depend somewhat on prior choices (i.e. solar PV systems vs. solar thermal). Note, that in the case of PV, you will enter the number, and size of modules in Watts (i.e., 280 W), and the total system size in kW.

After completing the online application, the

applicant will typically pay online. After the application is processed, the applicant is sent an email invitation to upload their plans into [ProjectDox](#), DCRA's online electronic permitting application. Once the applicant has logged into ProjectDox, the plans are submitted as PDF files online. Review proceeds concurrently by all departments.

## ADVANTAGES

- Concurrent review by all departments allows for a quicker turnaround than a sequential approach.
- Online application means plans are submitted, monitored and updated without requiring visits to DCRA.
- Digital/Electronic plans mean no copy costs, free use of color, simpler permit sizing constraints, and easy sharing and transmission of permits in both application and issued stages.

## CAUTIONS

- Very specific plan formatting requirements for file names, page layouts and other plan features have to meet system requirements precisely (see online [ProjectDox Applicant User Manual](#)).
- Learning curve for the applicant: requires some computer skills.
- Currently, the applicant must visit DCRA at least once for permit issuance and any required final payment. In general, this can be a relatively brief visit.

The following reviews are most likely to be necessary when installing a solar photovoltaic system: **Electrical, Fire Protection, Structural, and Zoning** (or self-certification); less common are Plumbing, Mechanical, and Historic Preservation (bold disciplines are always required).

ProjectDox can accept other file formats, but converts them all to pdf. The online [DC ProjectDox Applicant User Guide](#) goes into the details of the ProjectDox submittal process.



# Solar Permit Fees & Issuance

Solar Electric (PV) systems fees will be assessed at the following rates:

DCRA SCHEDULE OF FEES <sup>1</sup> FOR SOLAR PV SYSTEMS				
	< 15 kW	15-99 kW	100-200 kW	200 kW
Building Permit Fee	\$250 Residential/ \$300 Commercial	\$300+ \$11.25/kW >15	\$1250 + \$2.50/kW >100	\$1500 + \$1/kW >200
Enhancement Fee	10% of total fee			

Solar Thermal system fees will be assessed at the following rates:

DCRA SCHEDULE OF FEES FOR SOLAR THERMAL SYSTEMS				
	Fewer Than 10 Panels	10-24 Panels	25-49 Panels	50 Panels and More
Building Permit Fee	\$250 Residential \$300 Commercial	\$300 + \$25 per each panel > 10	\$650 + \$15 per add. panel > 25	\$1010 + \$10 per add. panel > 50
Enhancement Fee	10% of total fee			

The solar permitting fees above became effective on October 1, 2014. In addition to the building permit, there will be required trade permits (i.e. Electrical, Mechanical, and/or Plumbing). The most common of these will be Electrical permits for residential PV. Only a DC-licensed master tradesperson may apply for trade permits. Electrical/Trades permits MUST reference the associated Sol Permit or they will not be considered to be applicable. Typical residential PV Electrical trade permit requirements are:

- \$33 for Inverter/transformer 1-10 kVA

(Group 9)

- Commercial and larger residential jobs will have larger inverters
- \$39 Service through 200A (Group 8)
- With fees, the total will probably be around \$80 (all fees subject to change) for residential projects

Further information on the requirements of Historic Preservation is available online. Check [here for a full schedule of permit fees.](#)



## BUILDING PERMIT ISSUANCE

After the assigned reviews have been completed, the customer comes into DCRA, goes to the Issuance desk, documents are checked for completeness, remaining fees are paid, and the building permit is issued. Since fees for solar are often confirmed during the structural review, the customer sometimes receives an invoice at this point and pays the fees to the cashier, if they have not done so. Fees can be paid by cash, check, and credit card.

## PERMIT REVISIONS

In some cases, after a permit is issued, design changes occur: most commonly, additional modules are added or array layout is changed. Sometimes, an inspector determines something has not been installed per the permitted plans, but is a legal installation. In these cases, it is necessary to do a permit revision, so that the plans accurately reflect the final installed solar system. Doing a permit revision is simple and inexpensive.

## PERMIT REVISION STEPS

Start your permit revision process in the [Online Construction Permit Intake](#) system as usual. In the project description, describe the project as a permit revision, and include the old Permit number. Make note of what the revisions entail, since that may determine what reviews it is subject to (i.e. minor electrical revision - no changed components or locations/sizes). Do not pay! When you get to the end, "save" but don't "finish". You will then need to either come in, or email [Keith](#).

[Winston@dc.gov](mailto:Winston@dc.gov) /Green Building Code Inspector, or contact the Permit Center at 202-442-4400, to have the fees changed to those of a permit revision (\$36.30). After you have paid the fee online, you should be in a normal permit workflow (that is, you will get a ProjectDox invitation). Upload the entire original stamped plan set into the Supporting Documents folder - it can be a single, multi-page file or single pages. Upload only the new pages into the Drawings folder. Your cover sheet for the revision should meet ProjectDox requirements.

## INSPECTIONS

Following construction, DCRA must conduct inspections of Solar installations to ensure compliance with the approved plans and the D.C. Construction Codes - these consist of a Final Building Inspection and a Final Electrical Inspection, and others as applicable. Such inspections are scheduled through [DCRA's phone-in inspection scheduling system \(IVR\)](#). Further information can be found here: [dcra.dc.gov/service/schedule-construction-inspection](http://dcra.dc.gov/service/schedule-construction-inspection).

After inspections, the contractor or owner will be required to submit a copy of your DCRA On-Site Inspection Record to Pepco along with Part II of your Pepco Interconnection. For more details on the interconnection application process and to access all the required forms, visit Pepco's NEM and Small Generator Interconnection website at [pepco.com/greenpowerconnection](http://pepco.com/greenpowerconnection).



## SOLAR PV AGENCY CONTACTS

AGENCY	DIVISION	CONTACT	EMAIL
DCRA	Office of the Zoning Administrator	Kathleen Beeton	<a href="mailto:kathleen.beeton@dc.gov">kathleen.beeton@dc.gov</a>
DCRA	Green Building	Keith Winston	<a href="mailto:keith.winston@dc.gov">keith.winston@dc.gov</a>
DOEE	Energy Administration	Torrey Beek Daniel White	<a href="mailto:torrey.beek@dc.gov">torrey.beek@dc.gov</a> <a href="mailto:daniel.white2@dc.gov">daniel.white2@dc.gov</a>
Pepco	Green Power Connection	Team	<a href="mailto:gpc-south@pepco.com">gpc-south@pepco.com</a>

### SUPPORTING RESOURCES

DCRA has created several resources to assist in understanding solar installation requirements, and to aid in plan design directly. Please find them at the [Solar Portal](#) on BuildGreenDC.org. Contact our Green Building Division directly at [green.building@dc.gov](mailto:green.building@dc.gov).



[DCRA.dc.gov](http://DCRA.dc.gov)