

2018 Modified Roof Setbacks for Residential Solar PV Systems



Presenters

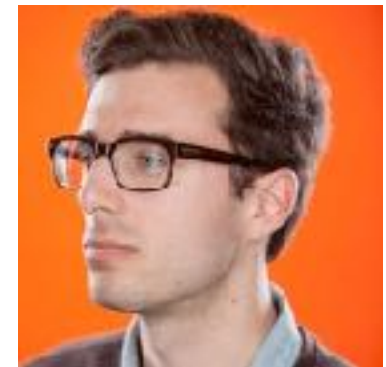
Jeff Spies

- President - Planet Plan Sets
- CALSSA Codes/Standards Committee Chair



Alan Fields

- Design and Engineering Manager - Solar Spectrum / Sungevity
- CALSSA Permitting Committee Chair



Matt Paiss

- Fire Captain
- International Association of Fire Fighters primary representative to the NEC Code Making Panel 4
- President - Energy Response Solutions



2016 CA Intervening Code Cycle Supplement

CA Intervening Code Supplements come into effect 1.5 years after each Triennial Code Cycle is in effect.

On July 1, 2018, Title 24 is modified to include the “Supplements” from the 2016 Intervening Code Cycle.

Changes to CRC and CFC were pulled from 2018 IFC and IRC.

<http://www.bsc.ca.gov/Codes.aspx>

<https://codes.iccsafe.org/public/collections/CA>

IFC / IRC Language - Structural Support of Pathways

IFC 1204.2

IRC R324.6.1

CFC 605.11.1 Access and pathways. Pathways shall be over areas capable of supporting fire fighters accessing the roof. Pathways shall be located in areas with minimal obstructions such as vent pipes, conduit, or mechanical equipment.”

Exceptions:

- *1. Detached, nonhabitable Group U structures including, but not limited to, detached garages serving Group R-3 buildings, parking shade structures, carports, solar trellises and similar structures.*
- *2. Roof access, pathways and spacing requirements need not be provided where the fire code official has determined that rooftop operations will not be employed.*

Structural Support of Pathways

"Pathways shall be over areas capable of supporting fire fighters accessing the roof."

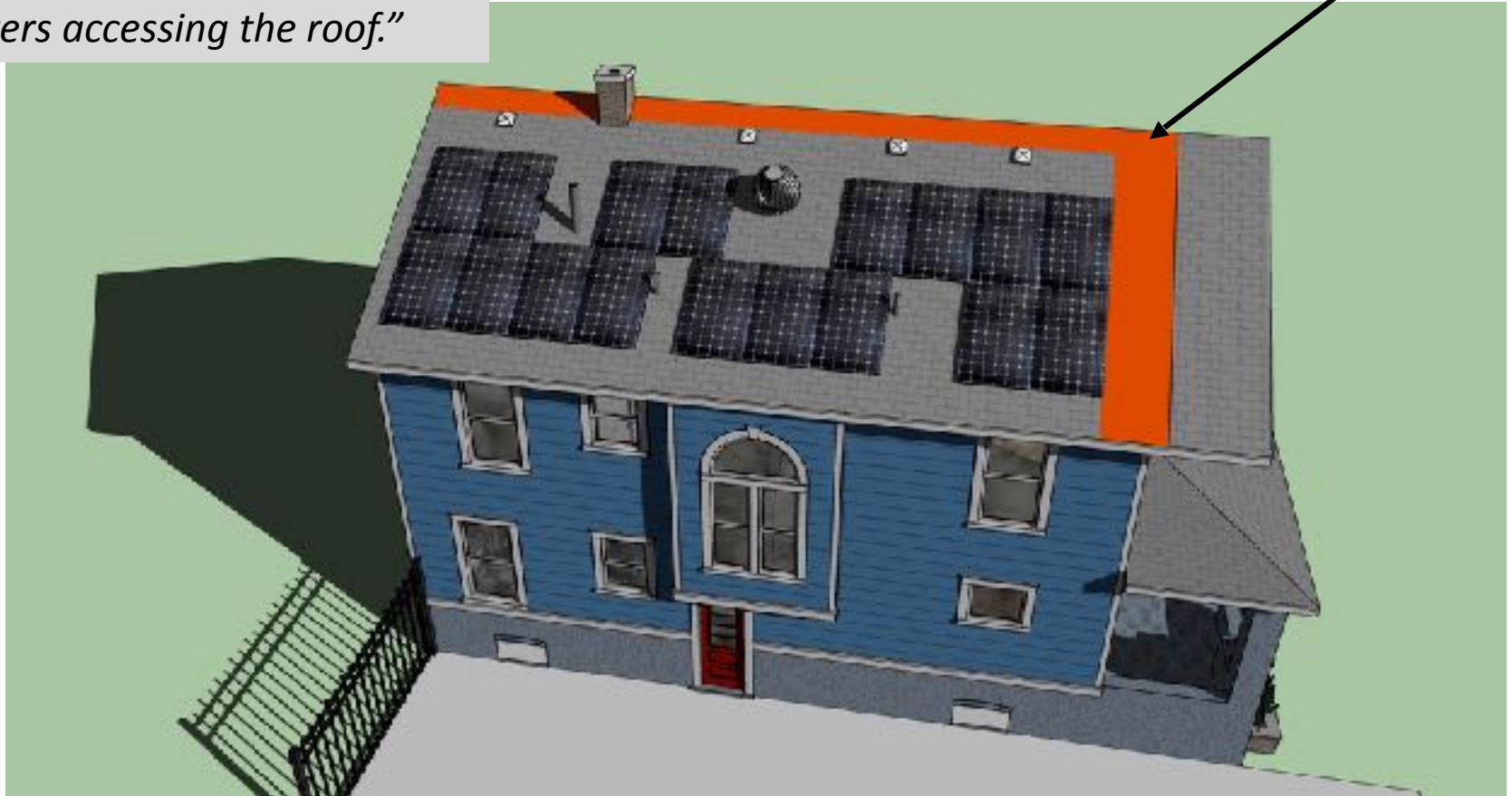
Small roof overhang should allow pathway to extend to edge of roof.



Structural Support of Pathways

"Pathways shall be over areas capable of supporting fire fighters accessing the roof."

Large roof overhang not well supported requires pathway to move over bearing wall.



IFC / IRC Language – Access Pathways

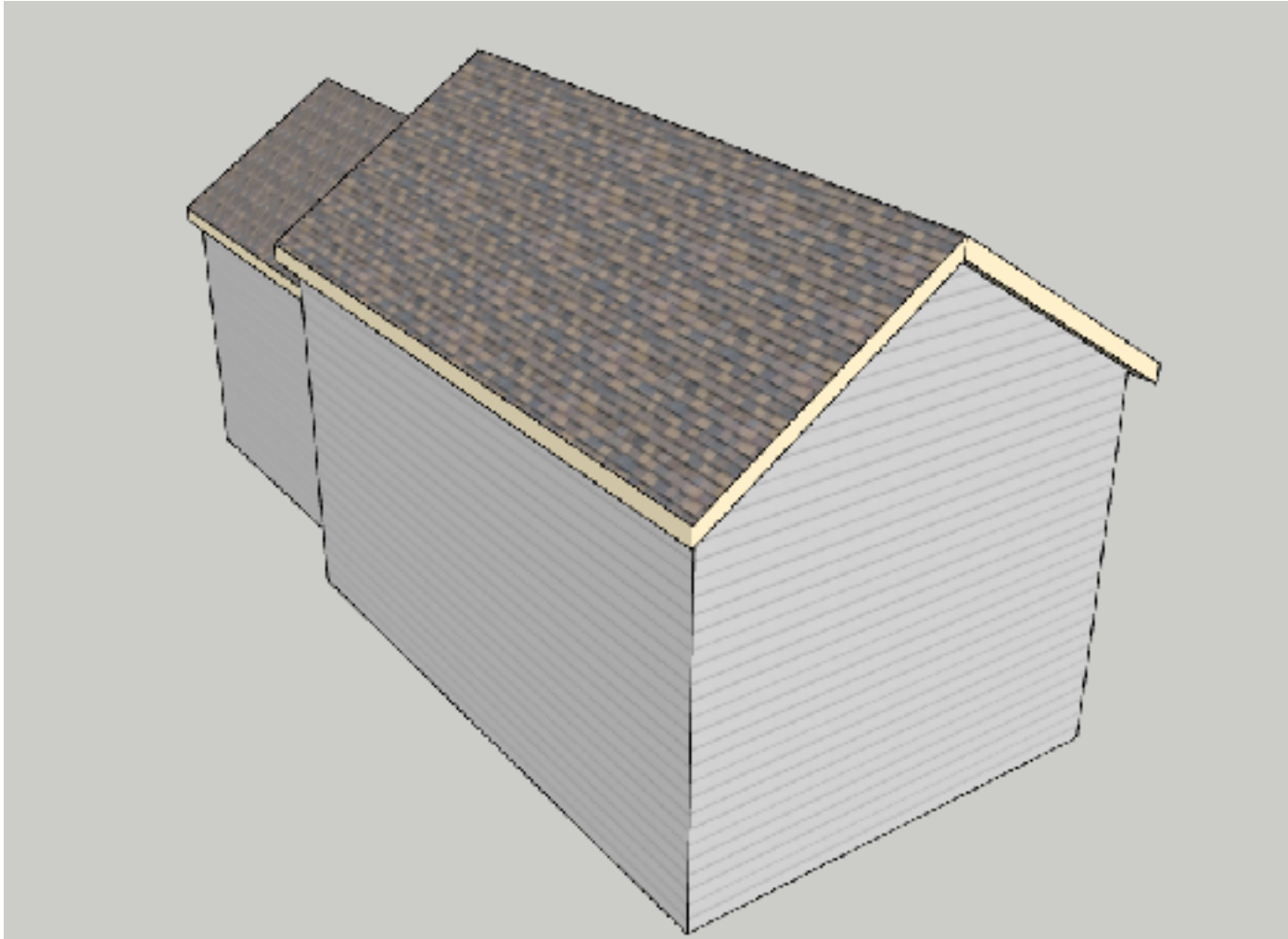
CFC 605.11.1.2.1

IRC R324.6.1

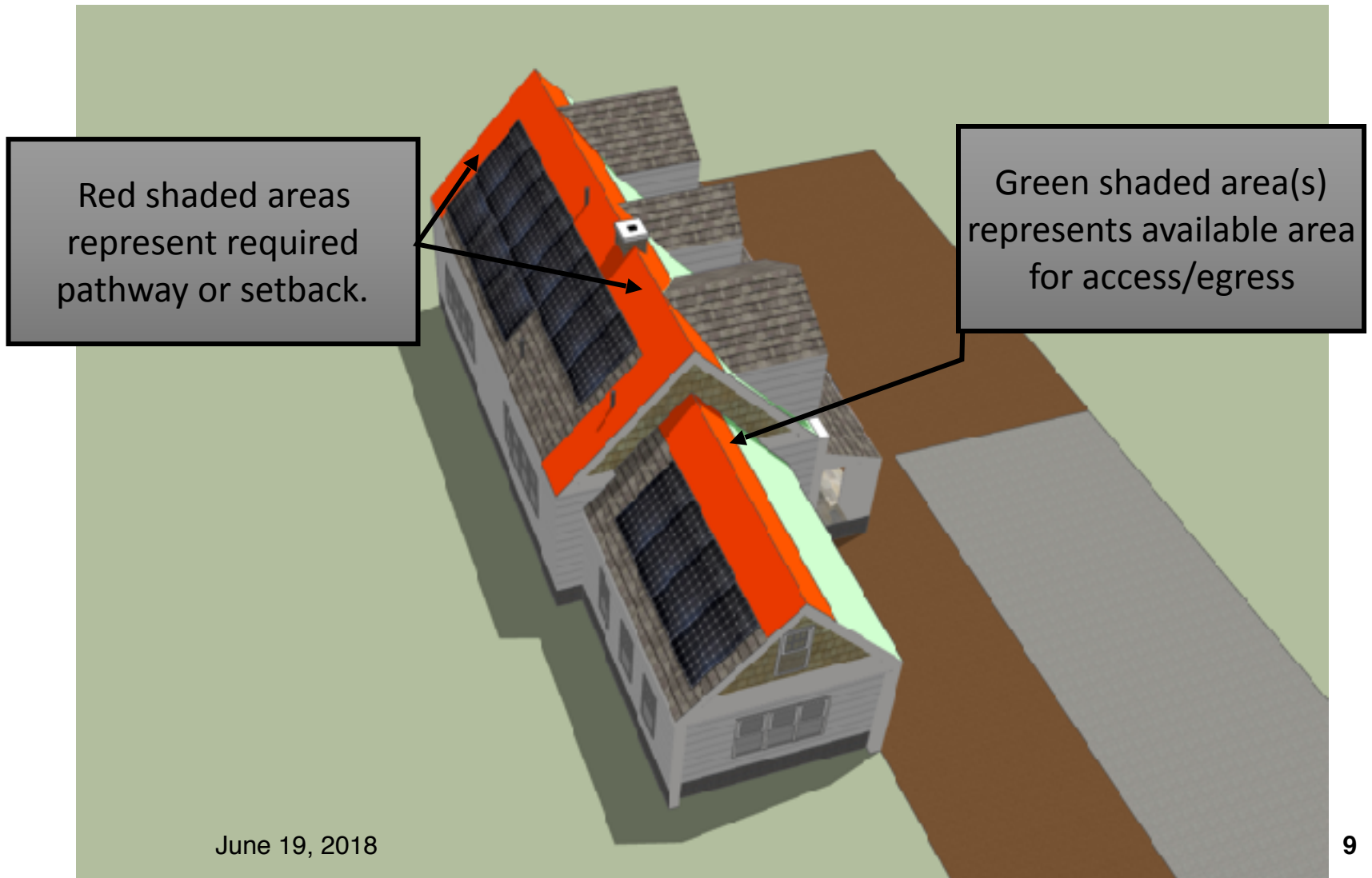
CRC R324.6.1 Pathways to Ridge.

- Not less than two minimum 36-inch wide (914 mm) pathways on separate roof planes, from lowest roof edge to ridge, shall be provided on all buildings. At least one pathway shall be provided on the street or driveway side of the roof.
- For each roof plane with a photovoltaic array, a minimum 36-inch-wide (914 mm) pathway from the lowest roof edge to ridge shall be provided on the same roof plane as the photovoltaic array, on an adjacent roof plane, or straddling the same and adjacent roof planes.
- Pathways shall be over areas capable of supporting fire fighters accessing the roof. Pathways shall be located in areas with minimal obstructions such as vent pipes, conduit, or mechanical equipment.

Example House – 2 Single Ridges



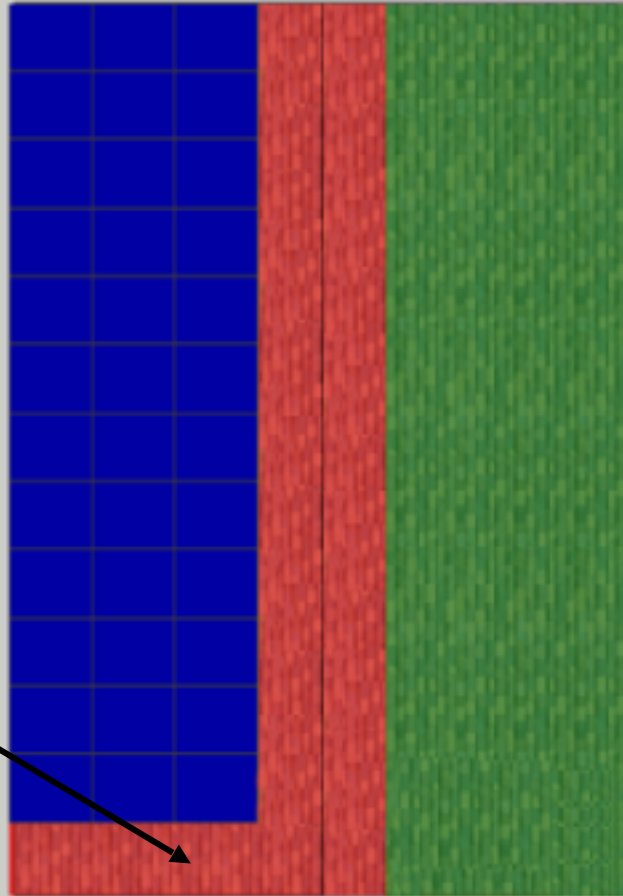
Example PV Array. Other Ridge is Non-Adjacent (Separate)



Pathways to Ridge – Example 1

“Not less than two minimum 36 in. (914 mm) wide pathways on separate roof planes, from lowest roof edge to ridge, shall be provided on all buildings.”

Pathway to Ridge



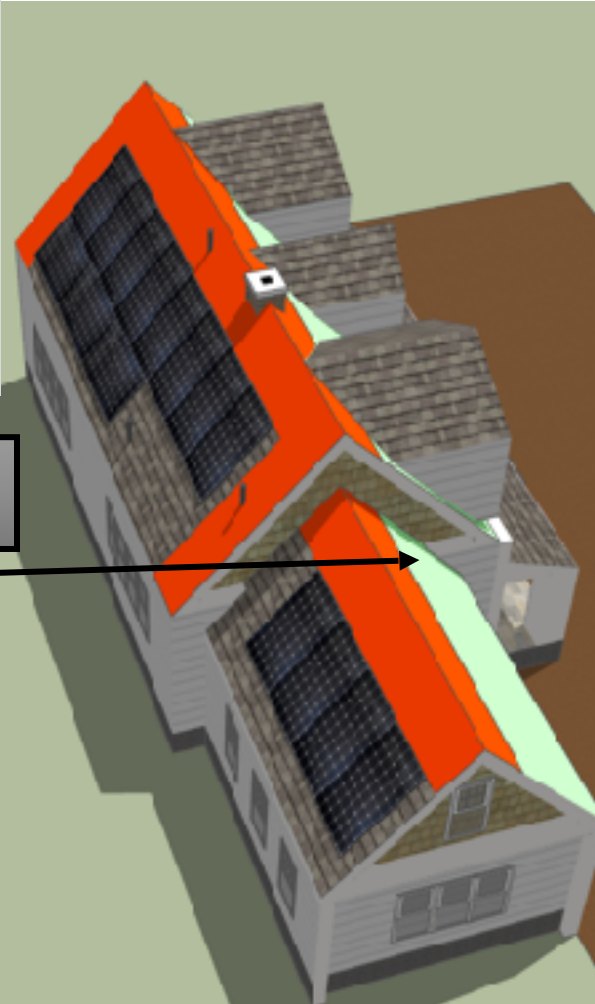
*“For each roof plane with a photovoltaic array, a minimum 36 in. (914 mm) wide pathway from the lowest roof edge to ridge shall be provided on the same roof plane as the photovoltaic array, **on an adjacent roof plane, or straddling the same and adjacent roof planes.**”*

Pathways to Ridge – Example 2

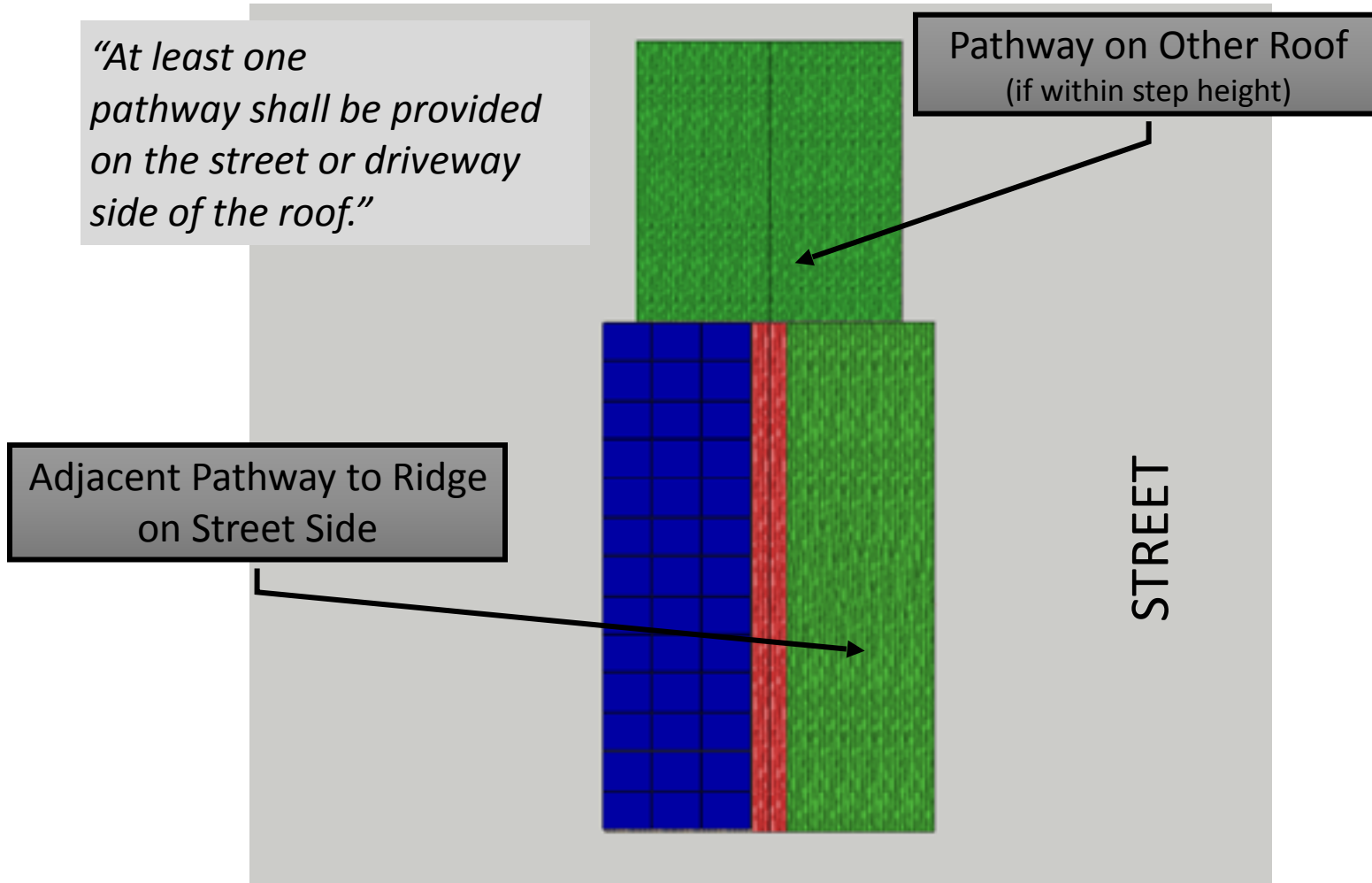
“Not less than two minimum 36 in. (914 mm) wide pathways on separate roof planes, from lowest roof edge to ridge, shall be provided on all buildings.”

Adjacent Roof Pathway(s)

*“For each roof plane with a photovoltaic array, a minimum 36 in. (914 mm) wide pathway from the lowest roof edge to ridge shall be provided on the same roof plane as the photovoltaic array, **on an adjacent roof plane, or straddling the same and adjacent roof planes.**”*



Pathways to Ridge – Street Access



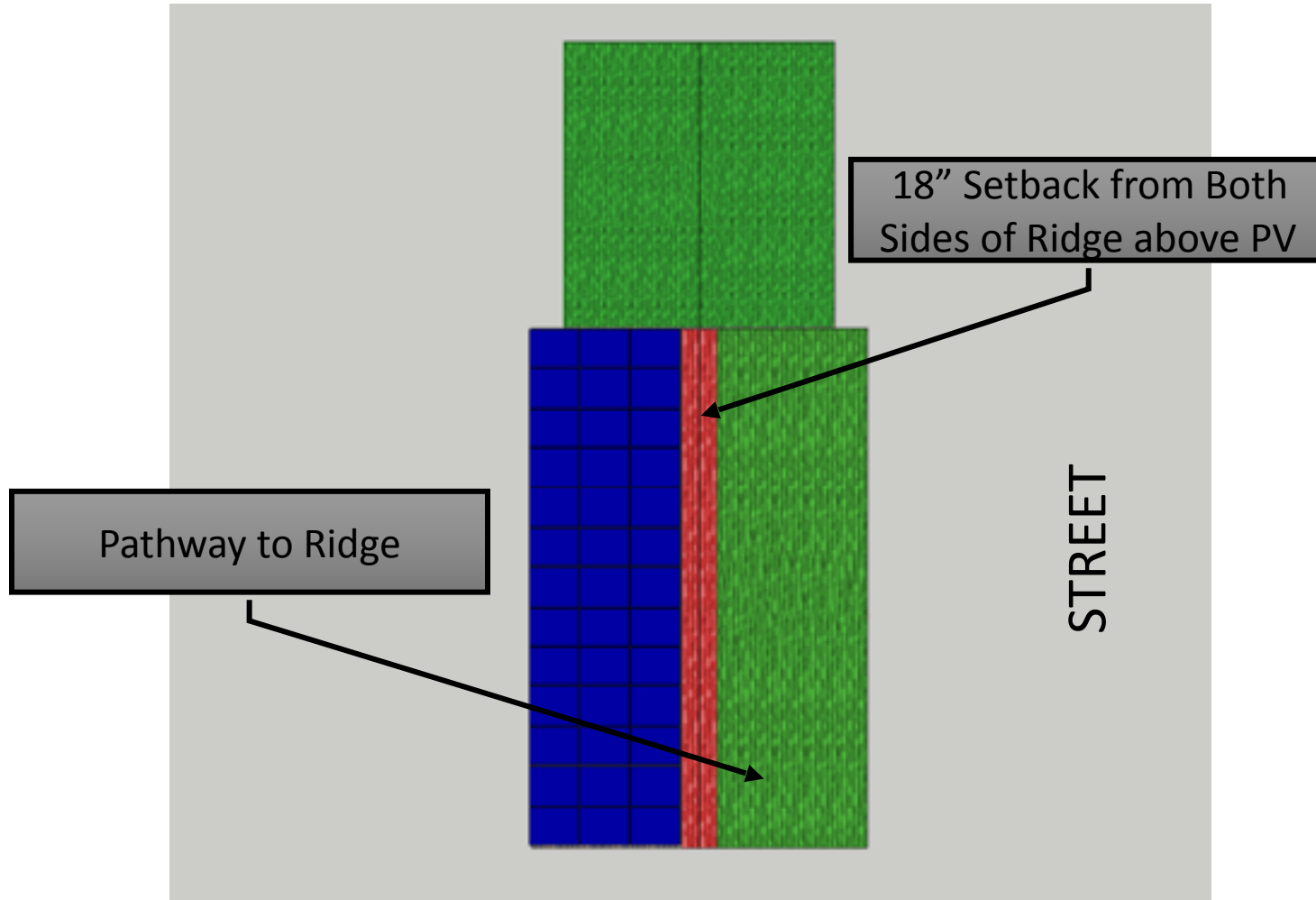
IFC / IRC Language – Setbacks at Ridge

CFC 605.11.1.2.2

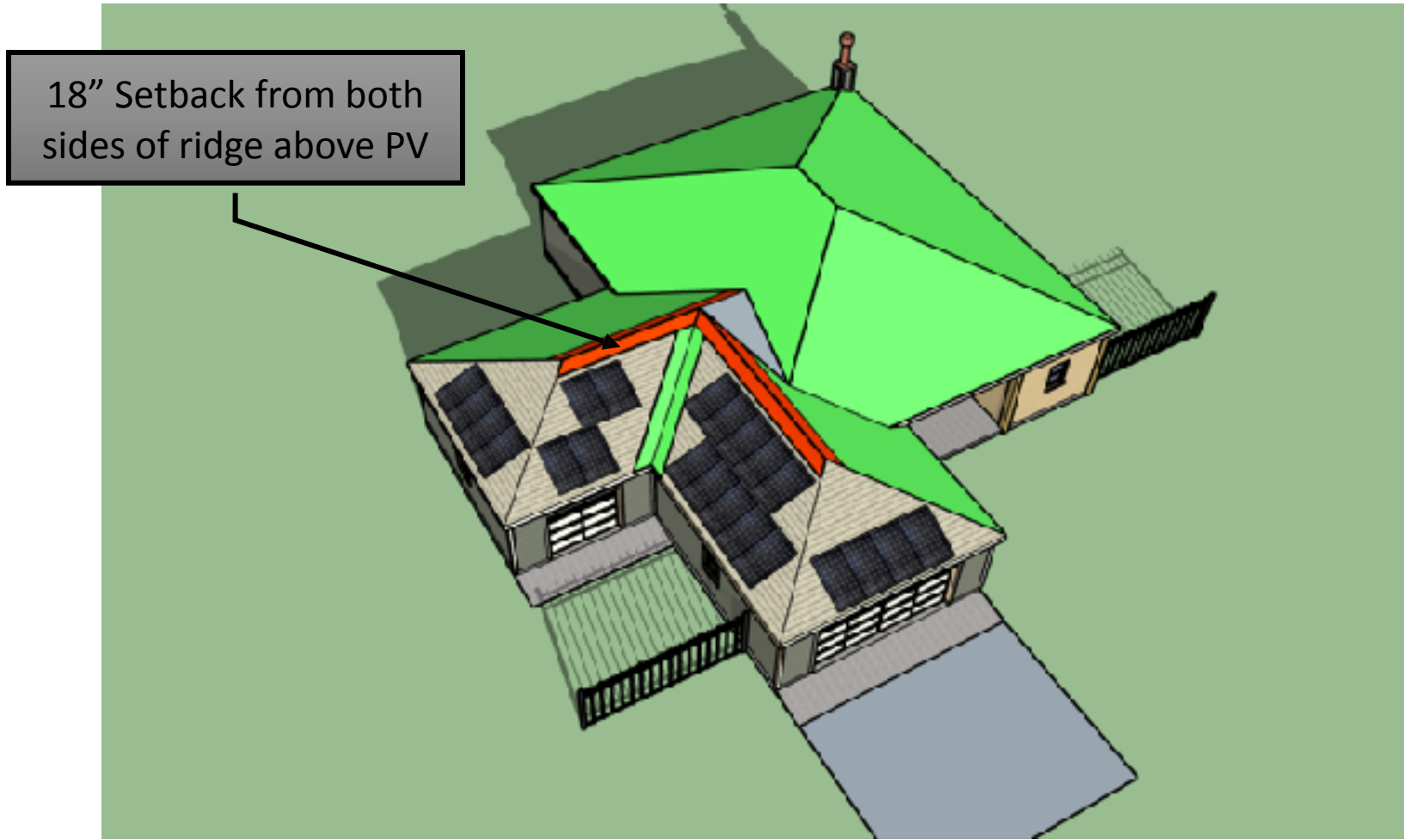
IRC R324.6.2

Setbacks at ridge. For photovoltaic arrays occupying **33 percent or less** of the plan view total roof area, **a minimum 18 in. (457 mm)** setback is required on both sides of a horizontal ridge. For photovoltaic arrays occupying **more than 33 percent** of the plan view total roof area, **a minimum 36 in. (914 mm)** wide setback is required on both sides of a horizontal ridge.

Ridge Setbacks – <33% Total Roof Area



Ridge Setbacks – $<33\%$ Total Roof Area

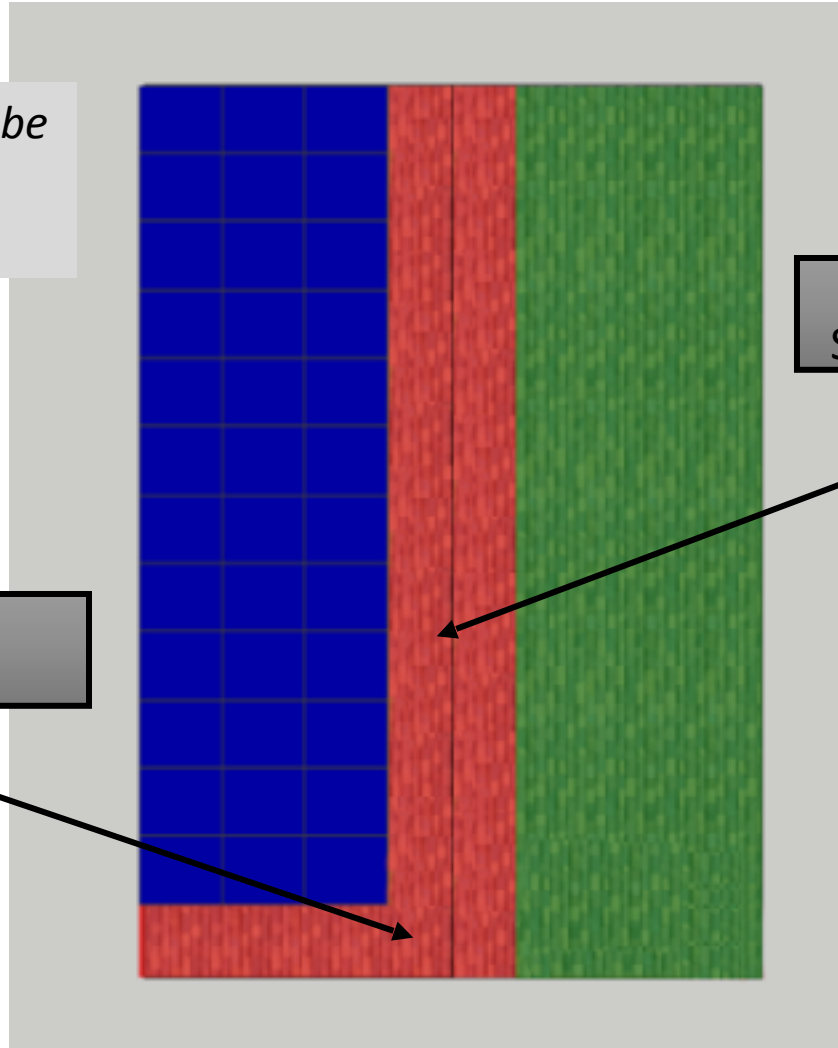


Ridge Setbacks – >33% Total Roof Area

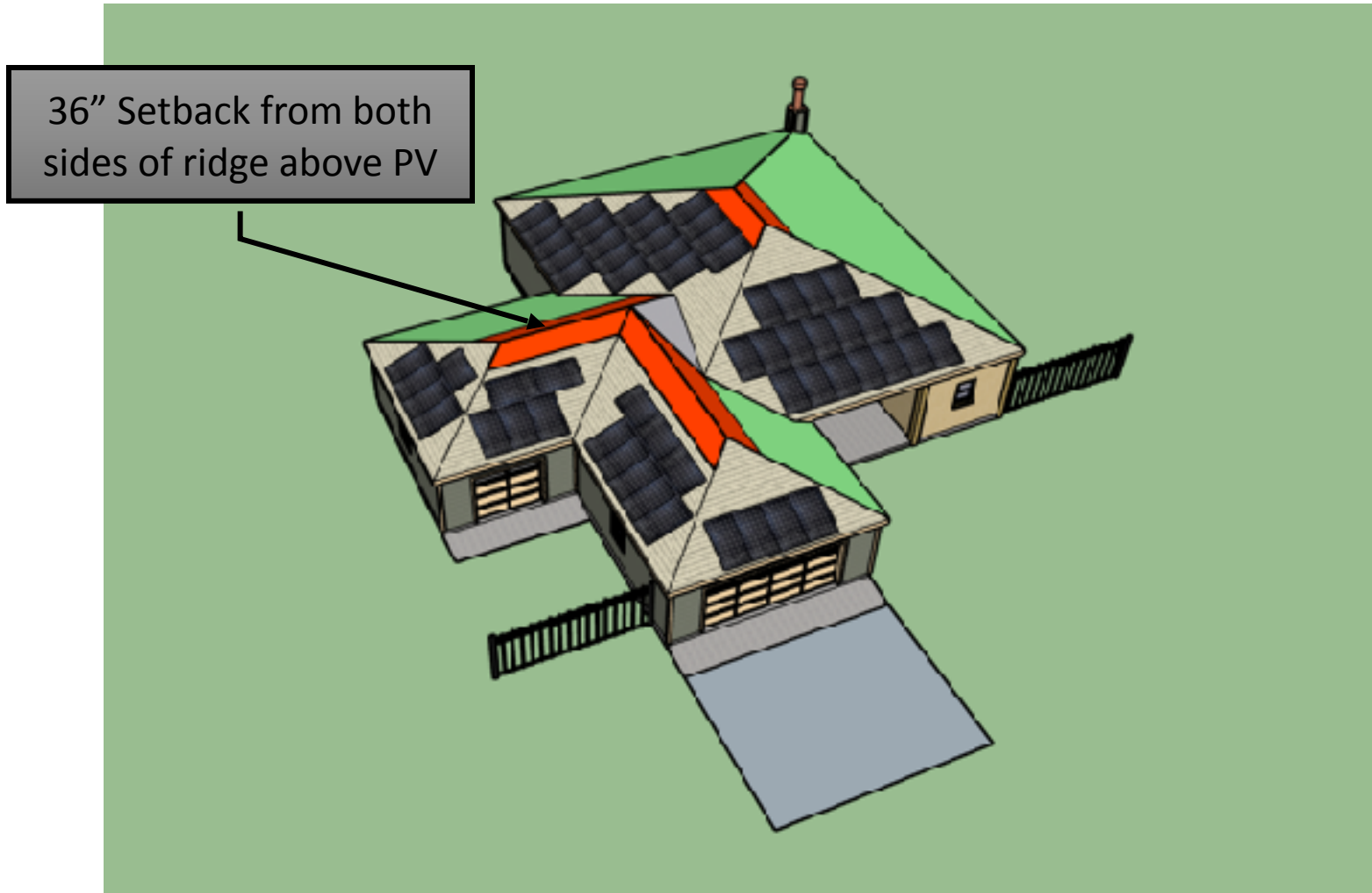
“At least one pathway shall be provided on the street or driveway side of the roof.”

Pathway to Ridge

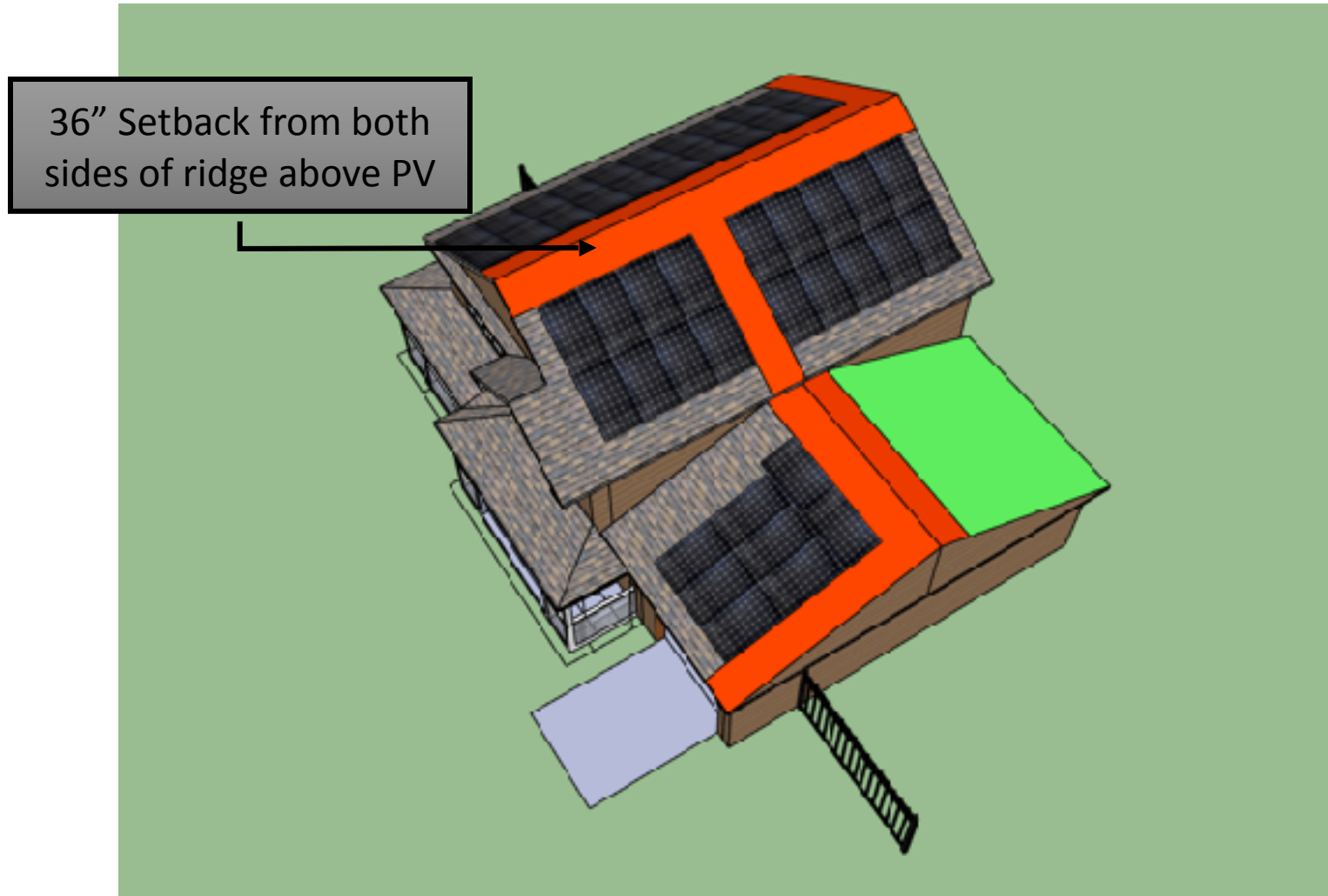
36" Setback from Both Sides of Ridge above PV



Ridge Setbacks – >33% Total Roof Area



Ridge Setbacks – >33% Total Roof Area



IFC / IRC Language – Ridge Setbacks if Sprinkled

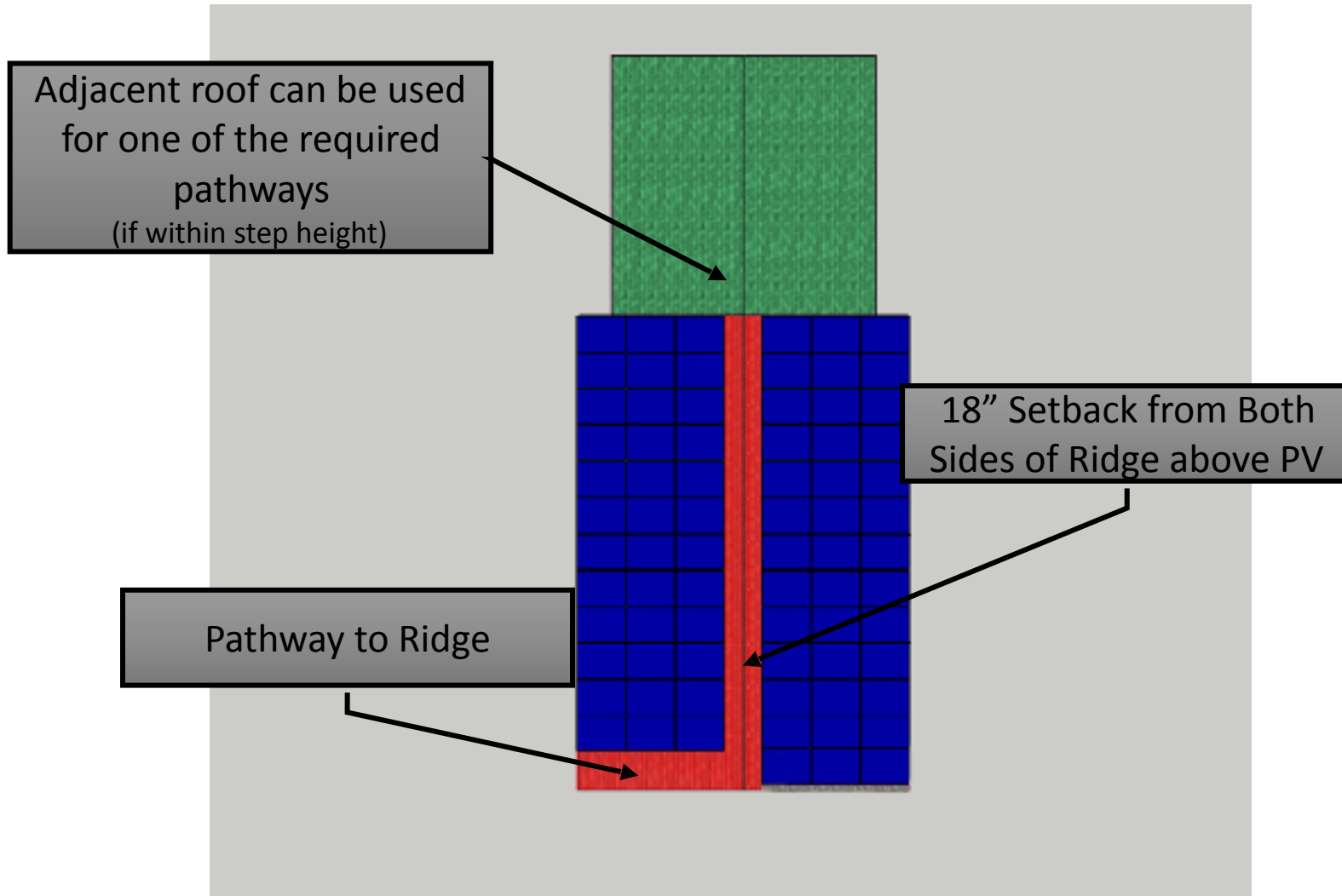
CFC 605.11.1.2.2.1

IRC R324.6.2.1

Alternative setback at ridge. *Where an automatic sprinkler system is installed within the dwelling in accordance with NFPA 13D, setbacks at ridges shall conform with one of the following:*

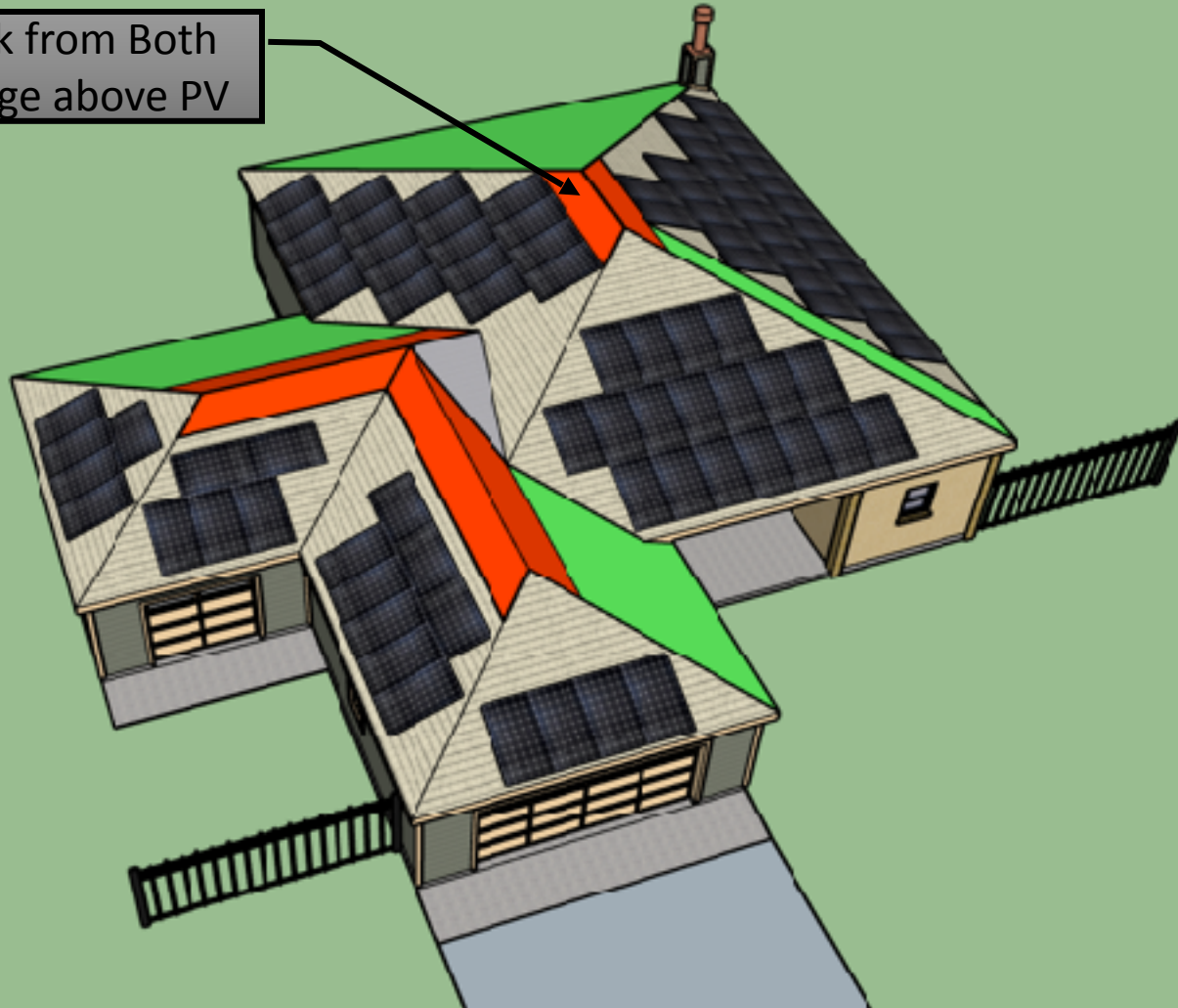
- 1. For photovoltaic arrays occupying not more than 66 percent of the plan view total roof area, not less than an 18-inch (457 mm) setback is required on both sides of a horizontal ridge.*
- 2. For photovoltaic arrays occupying more than 66 percent of the plan view total roof area, not less than a 36-inch (914 mm) setback is required on both sides of a horizontal ridge.*

Ridge Setbacks – Sprinkled, <66% Total Roof Area



Ridge Setbacks – Sprinkled, >66% Total Roof Area

36" Setback from Both
Sides of Ridge above PV



Setbacks & Pathways w/ Hips, Valleys & Driveways

36" Setback from Both Sides of Ridge above PV

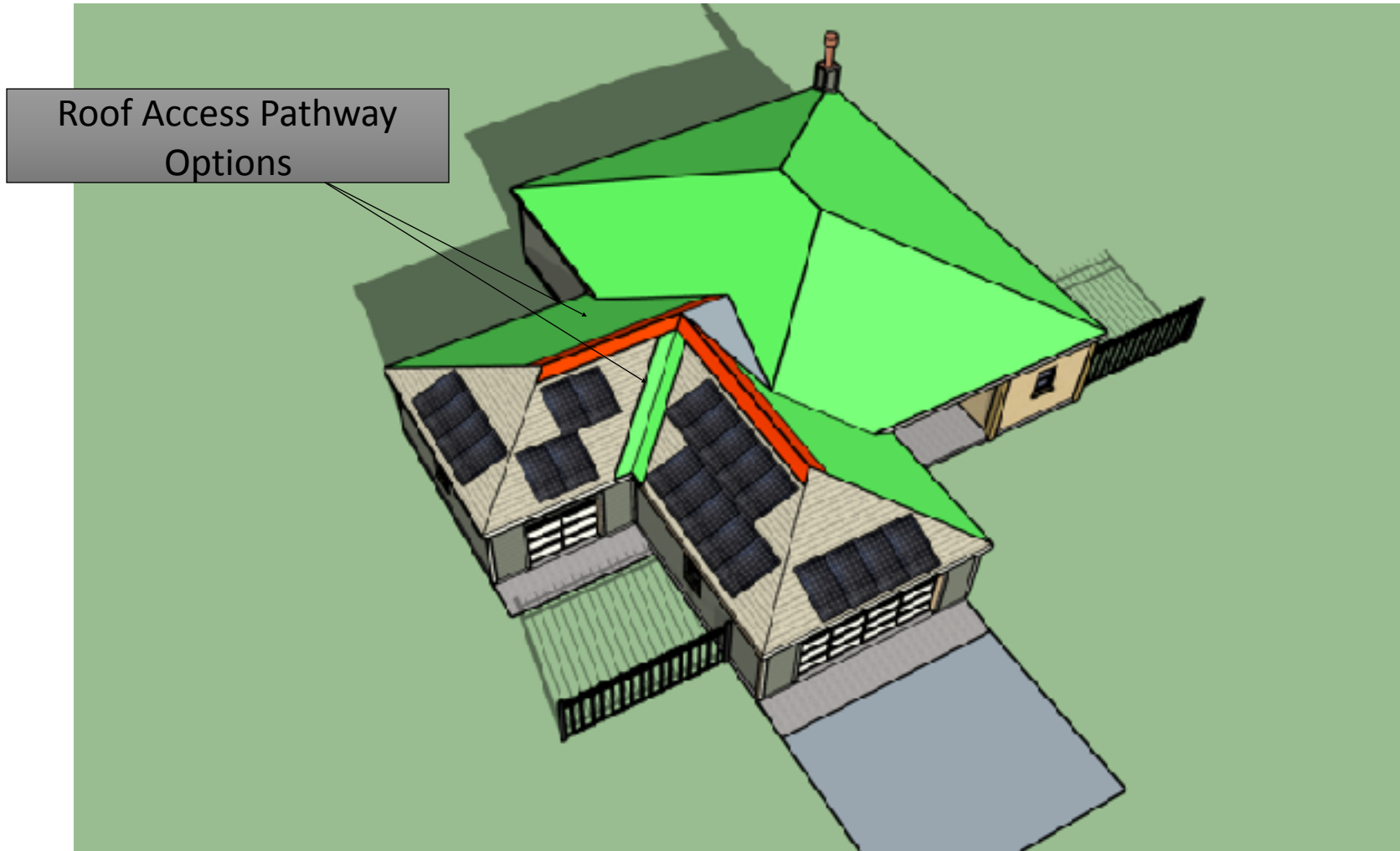
Pathway to Ridge Options

"At least one pathway shall be provided on the street or driveway side of the roof."

Driveway

For each roof plane with a photovoltaic array, at least one 36 in. (914 mm) wide pathway from lowest roof edge to ridge shall be provided on the same roof plane as the photovoltaic array, or on an adjacent roof plane, or straddling the same and adjacent roof planes.

Setbacks & Pathways w/ Hips, Valleys & Driveways



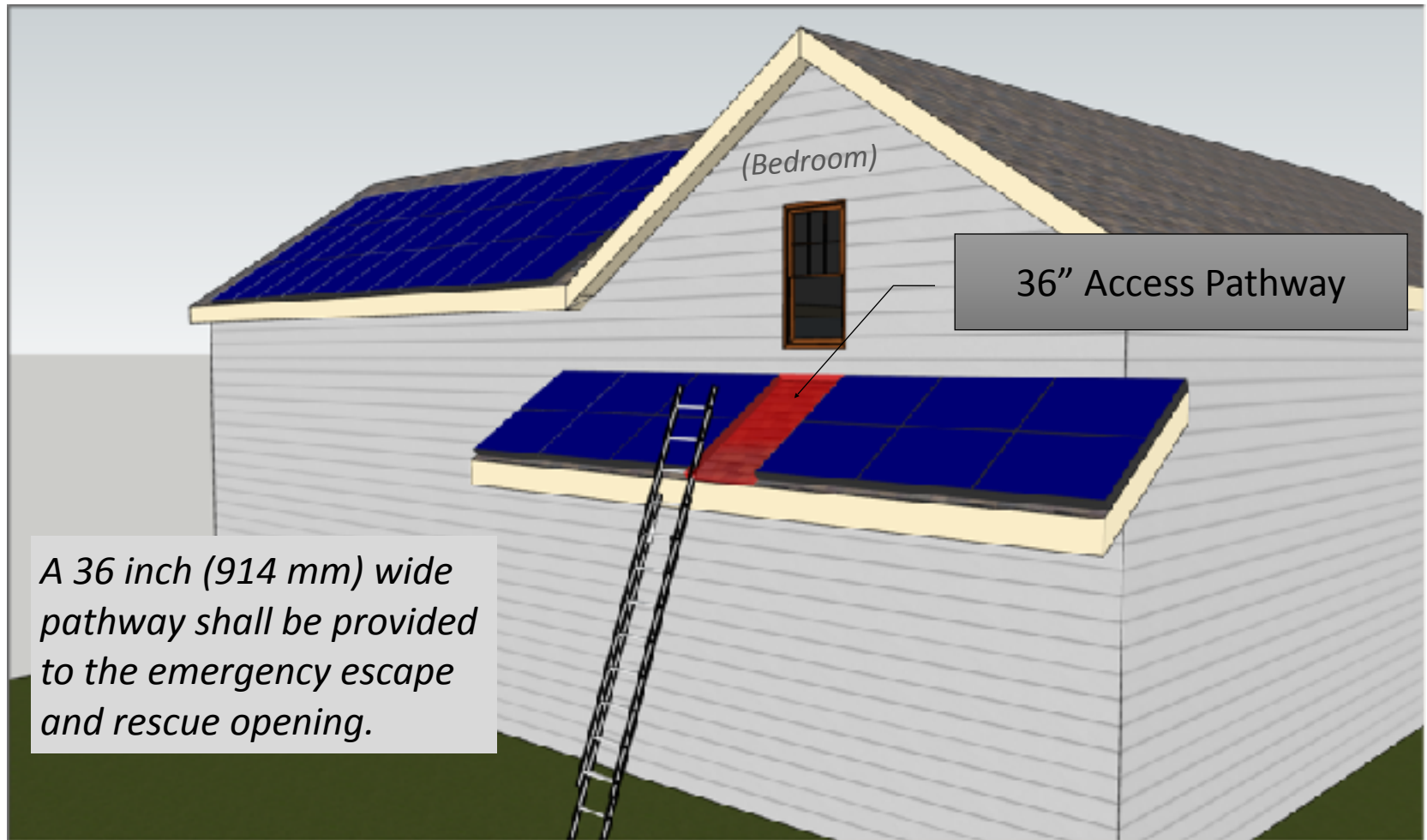
IFC / IRC Language – Escape Opening Access

CFC 605.11.1.2.6

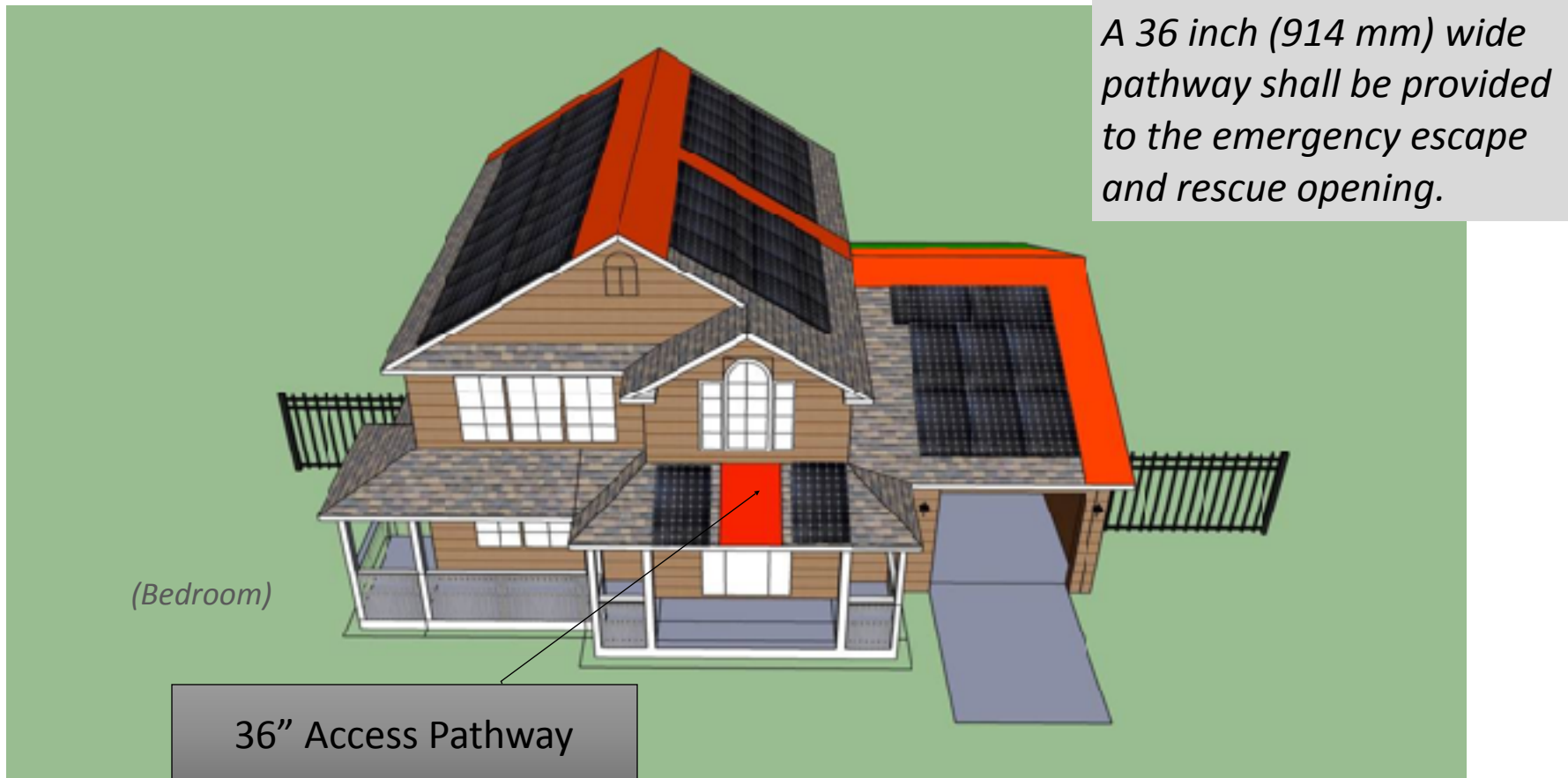
IRC R324.7.2.6

Emergency escape and rescue opening. Panels and modules installed on dwellings shall not be placed on the portion of a roof that is below an emergency escape and rescue opening. A 36 in. (914 mm) wide pathway shall be provided to the emergency escape and rescue opening.

Emergency Escape and Rescue Opening Access



Emergency Escape and Rescue Opening Access



Acknowledgements

International Association of Fire Fighters



Energy Response Solutions



Solar Energy Industries Association



Sustainable Energy Action Committee

