BILL'S HOME TECH

Home & Small Business Tech Solutions

An Extended Guide · No. 1498

Evaluating Your Roof for Solar

Shade, direction, and angle — judged from the ground

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! Read this first — two honest truths about home solar

Two honest truths before we start, because they surprise a lot of good folks. First, home solar is a professional job — it takes a licensed installer, building permits, and your utility's approval to connect (called interconnection). This guide is here to help you understand, plan for, and live with solar; it is not a do-it-yourself project, and I never want you climbing on a roof or opening an electrical panel. Second, a plain grid-tied solar system — one without a battery — shuts itself off during a power outage, even in bright sunshine. That is a required safety feature, so the system cannot put electricity onto the lines while the crews are repairing them. If keeping the lights on during an outage matters to you, you will need a battery, and we will talk about that plainly. This guide helps you size up your own roof from the ground — and I mean from the ground; please never climb up to check it yourself.

Sizing up your roof, safely, from the ground

Your roof is where most of the solar decision lives. A great roof makes solar easy; a tricky one just needs a smarter plan. This guide helps you judge yours — its direction, its angle, and above all its shade — before anyone climbs a ladder.

I'm Bill, of Bill's Home Tech in Portage County. You can learn a surprising amount about your roof's solar potential standing in your own yard, coffee in hand. That's exactly what we'll do here — no climbing, no guesswork, no pressure.

A proper installer will measure everything precisely later. The point now is to give you a confident first read, so you know whether solar is worth pursuing and what questions your roof raises.

! Keep both feet on the ground

Everything in this guide is done from the yard or a window. Please don't get up on the roof to inspect it — falls are far too common and far too serious. Judging a roof for solar never requires you to climb it.

What makes a good solar roof

The whole checklist in a handful of points. A strong roof has most of these.

- ❑ Faces a helpful direction — south is best here, east and west are good.
- ❑ Gets sun in the middle of the day without heavy shade.
- ❑ Has enough clear, unbroken area for a worthwhile number of panels.
- ❑ Is in sound shape and not due for replacement soon.
- ❑ Has a manageable material — asphalt shingle is the easiest.
- ❑ Isn't chopped up by too many chimneys, vents, and dormers.

> **✔ Missing one? Don't panic**
> Few roofs are perfect. A weak spot usually means a smaller system, shade-friendly equipment, or a ground mount — not a flat no. We'll take each factor in turn.

Which direction does your roof face?

The way a roof slope faces sets how much sun it catches across the day. It's the first thing to figure out, and you can do it with a simple compass or a phone.

Here in the northern hemisphere, a south-facing slope generally gathers the most sun over the day and is the gold standard. But it's far from the only good option — plenty of fine systems sit on east- and west-facing roofs.

East-facing panels do their best work in the morning; west-facing ones in the afternoon and evening. A roof that faces mostly north is the weak case — it catches the least — though even then, other slopes of the same house may work well.

> **✔ You may have more than one option**
> Most houses have several roof faces pointing different ways. You're not stuck with one — an installer can put panels on whichever slopes catch the most sun. Note which of yours face south, east, and west.

The angle of the roof

How steeply your roof is pitched affects how squarely it meets the sun. It matters, but less than folks fear.

A moderate slope — the kind common on many homes — tends to work nicely with the sun's path over the year. Very flat and very steep roofs both still work; they just meet the sun a bit differently, and an installer can adjust the plan accordingly.

On a flat or nearly flat roof, panels are usually set on tilted frames to angle them toward the sun and help rain and snow run off. So don't count a flat roof out — it's just a different mounting approach.

> **✔ Angle is rarely a deal-breaker**
> Direction and shade matter far more than a few degrees of pitch. Unless your roof is extreme in some way, its angle is something your installer simply works with, not a reason to worry.

Shade: the factor that matters most

If you take one thing from this guide, let it be this: shade is the biggest thing standing between a roof and good solar production.

A panel sitting in shadow makes far less power than one in full sun. So the question isn't just 'is my roof sunny?' but 'what falls across it, and when?' Trees, chimneys, a neighbor's tall house, power poles, and dormers can all cast shadows that cost you.

Pay special attention to the middle of the day, when the sun is strongest and panels do their best work. Shade during those midday hours hurts most. A little early-morning or late-evening shadow matters far less.

> **! Watch the whole day and the whole year**
> A roof that's sunny at breakfast may be shaded by a tree by afternoon, and the sun sits lower in winter, casting longer shadows. Notice shade across the day and think about how it shifts with the seasons.

The shade that isn't there yet

Here's one that catches people out: trees grow. The shade you plan around should be tomorrow's, not just today's.

A young tree that barely clips the roof now can, in ten or fifteen years, blanket it in afternoon shade. Since panels are meant to last decades, it's worth looking at the saplings and thinking about where their shadows will fall as they mature.

Sometimes the fix is simple — trimming or removing a problem tree before you install, if it's yours to trim. Sometimes it means placing panels away from where future shade will creep. Either way, it's better considered now than regretted later.

> **✔ Trees are a factor you can sometimes change**
> Unlike your roof's direction, shade from your own trees is often something you can manage. If a single tree is the main problem, a conversation with an arborist might open up a whole roof.

How much usable space is up there?

It's not the roof's total size that counts — it's the clear, sunny, well-facing part where panels can actually go.

Installers need unbroken stretches of roof to lay out panels efficiently, with a little clearance around edges and obstructions for safety and code. So a big roof cluttered with vents, valleys, and dormers may offer less usable area than a smaller, cleaner one.

The more usable area you have facing the sun, the larger a system you can fit — but remember, bigger isn't always the goal. A system sized to your actual electricity use is usually the sweet spot, as our net-metering guide explains.

> **✔ Clean and sunny beats big and cluttered**
> When you look up at your roof, notice the broad, open, sunny stretches. Those are what an installer is really after — not raw square footage chopped up by obstacles.

What's your roof made of?

The roofing material affects how panels attach and how straightforward the install is. Most are workable; some need a specialist.

Asphalt shingle — the most common roof around here — is the easiest and most familiar for solar installers to work with. Standing-seam metal roofs are also solar-friendly and can allow clamp-on mounting. Tile, slate, and wood shake are all doable but call for extra care and an installer experienced with them.

None of these rules out solar. They just affect the approach, the care needed to keep the roof watertight, and sometimes the cost. If your roof is an unusual material, ask installers about their experience with it specifically.

> **✔ Match the installer to the material**
> For a tile or slate roof especially, choose an installer who's done that material before. Proper flashing and mounting keep the roof leak-free — and that's a skill worth confirming up front.

How old is the roof underneath?

This is the factor most likely to change your timing, so let's be clear-eyed about it.

Panels are meant to stay put for decades, so the roof beneath them needs plenty of life left. If your roof is newer or in good shape, wonderful. If it's aging and might need replacing within a handful of years, it's far cheaper and simpler to reroof first, before the panels go up.

Removing and reinstalling panels just to replace the roof under them is a real, avoidable expense. A roofer or your installer can assess the condition honestly — and a good installer will tell you if it's wiser to wait and reroof.

> **! Reroof first if it's close**
> The most common solar regret I hear about is putting panels on a tired roof. If replacement is likely soon, do the roof first. It's the single biggest money-saver in the whole timing decision.

Two kinds of homes, two sets of needs

Judging a roof looks a little different in a tight neighborhood than it does on a spread-out country property, where the ground is often an option too.

If you live in town or the suburbs

In town or the suburbs, homes sit close together, so a neighbor's tall trees or two-story house can throw shade onto your roof. Roofs may also be smaller and more cut up by dormers and vents.

- Check for shade cast by neighbors' trees and buildings, not just your own.
- Smaller, busier roofs may favor shade-friendly microinverters.
- You'll usually be working with the roof rather than the yard.
- Confirm any HOA rules about panel placement and visibility.

If you are out in the country on a well

Out in the country, you often have bigger, simpler roofs — and, just as importantly, open land. If the roof isn't ideal, a ground-mounted array in a sunny field may be the better answer.

- Large barn or house roofs can offer generous, uncluttered space.
- Open, sunny land makes a ground mount a genuine option — see that guide.
- Watch for shade from mature trees, silos, and outbuildings.
- More roof or ground can mean room for a battery-backed system too.

> **★ Not sure how to read your roof?**
> Send me a few photos of your roof and yard from the ground, tell me which way the house faces, and I'll give you an honest first read on its solar potential. No charge for a quick look. Call (330) 200-8042.

Chimneys, vents, and other obstacles

The bumps and stickups on a roof do two things: they take up space, and they cast little shadows. Both are worth noticing.

Chimneys, plumbing vents, satellite dishes, skylights, and dormers all occupy roof area and throw shade nearby. A roof dotted with them has less clear space and more little shadows to work around than a broad, plain slope.

A skilled installer designs around these, leaving proper clearances and placing panels where the sun is unobstructed. Sometimes a minor vent can be relocated; usually it's simply a matter of smart layout. It rarely stops a project, but it shapes it.

> **✔ Count the clutter when you look up**
> As you size up your roof, take note of how many things poke through it. A clean slope is a gift for solar; a busy one just means a more thoughtful layout and perhaps a few fewer panels.

Using more than one roof face

Your house probably has several roof planes pointing different ways. That's an opportunity, not a problem.

Installers routinely spread panels across two or more roof faces — say, some on the south slope and some on the west — to gather the most sun and fit the panels you need. Modern systems with panel-level electronics handle this mix gracefully, each panel working on its own.

So even if no single slope is big or perfect, the combination of your roof faces may add up to plenty. When you look at your home, think of all the sunny slopes together, not just the best one.

> **✔ Split arrays are common and fine**
> Don't worry if your panels end up on two or three parts of the roof. It's a normal, sensible way to catch the most sun — and with the right electronics, it works beautifully.

What about a flat roof?

Flat and low-slope roofs — common on some additions, garages, and modern homes — are perfectly workable, with a small twist.

On a flat roof, panels are usually mounted on tilted frames that angle them toward the sun and let rain and snow slide off rather than pooling. This also lets the installer aim the panels in the best direction regardless of how the roof itself sits.

There are a couple of extra considerations — making sure water still drains properly and the roof membrane stays sound — which a good installer handles. But a flat roof is an option, not an obstacle.

> **✔ Tilted frames turn a flat roof into a good one**
> Because the frames set the angle and direction, a flat roof can sometimes be aimed more ideally than a fixed-slope roof. Ask your installer how they'd tilt and space the panels.

Is the roof strong enough to hold panels?

Panels and their racking add weight to a roof. For most homes it's no trouble, but it's a real part of the professional assessment.

A structurally sound roof in good repair generally handles the added load of a solar array without issue. Older homes, or roofs already carrying heavy material, sometimes need a closer look, and occasionally a bit of reinforcement.

This isn't something you judge from the yard — it's exactly why a licensed installer (sometimes with an engineer) evaluates the structure before design. It's one more reason solar is a professional job, and one more thing you don't have to figure out alone.

> **✔ Leave the structural call to the pros**
> You can note your roof's direction and shade yourself. Whether it can carry the weight is a question for a qualified installer — part of the same site visit that measures everything else.

How installers measure sun and shade

You eyeball it; the pros measure it. Knowing how helps you tell a thorough installer from a hasty one.

Good installers use tools — special apps, drones, satellite imagery, or handheld devices — to map exactly how much sun each part of your roof gets across the whole year, shadows and all. From that they estimate honest production and design the layout.

This is why a real estimate takes a proper look, not a drive-by. If an installer quotes production without studying your shade, be skeptical. The careful ones show you a sun-and-shade analysis, and that's a good sign.

> **✔ Ask to see the shade analysis**
> A thorough installer can show you a map or report of your roof's sun and shade. Asking for it does two things: it gets you honest numbers, and it quietly reveals how carefully they work.

If your roof just won't do

Sometimes the honest answer is that the roof isn't the place. That's not the end of the road — it's a fork in it.

If your roof faces the wrong way, is too shaded, too cut-up, or too old to reuse, a ground-mounted array may be your answer — panels on a frame in a sunny part of the yard. Ground mounts can be aimed and tilted ideally and kept clear of shade, which is why rural homes with land often prefer them.

Our roof-versus-ground guide compares the two honestly, including the extra cost and space a ground mount needs. The point here is simply: a poor roof doesn't have to mean no solar.

> **✔ The yard is a real option**
> If your roof keeps coming up short as you read this guide, don't be discouraged — turn to the ground-mount option. For many country properties, it's actually the better choice.

Your safe, ground-level roof check

Here's a simple routine you can do from your yard and windows to size up your own roof — no ladder, ever.

- ❑ Note which way your main roof slopes face — south, east, west, north.
- ❑ Stand back and watch where shadows fall in morning, midday, and afternoon.
- ❑ Look for trees, chimneys, and neighbors' buildings that cast shade.
- ❑ Notice how clear and unbroken the sunny slopes are.
- ❑ Recall roughly how old the roof is and whether it's in good shape.
- ❑ Snap a few photos from the ground to share with an installer or with me.

! Photos from the ground, not the roof

A few pictures from your yard tell an installer plenty. There is never a good reason to climb up yourself — please leave anything on the roof to the professionals with the right gear and training.

Roof factors at a glance

The main things that make a roof better or trickier for solar, on one page.

Factor	Better	Trickier
Direction	South, east, west	Mostly north
Shade	Clear at midday	Trees, dormers
Area	Broad, open	Small, cut-up
Material	Asphalt, metal	Slate, wood shake
Age	Newer, sound	Near end of life

Mostly middle-column? Your roof is a strong candidate. A few right-column answers just point to a smaller system, shade-friendly gear, or the ground-mount option — rarely a flat no.

What to have ready for the site visit

A little preparation makes the installer's visit smoother and their estimate more honest.

- Your notes on roof direction and where shade falls through the day.
- Ground-level photos of each roof face and the surrounding trees.
- Roughly how old the roof is, and any records of its last replacement.
- A year of electric bills, so the system is sized to your real use.
- Your goals — lower bills, backup power, or both.

> **★ I'll help you get ready**
> If you'd like a hand pulling this together before installers visit, that's just the kind of prep I enjoy. We'll make sure you're an informed host, not a captive audience. Call (330) 200-8042.

Questions to ask about your roof

Put these to any installer to be sure they've truly studied your roof, not just glanced at it.

Q: Can you show me a sun-and-shade analysis of my roof?
A careful installer maps how much sun each area gets across the year. Seeing it gives you honest production expectations and reveals how thoroughly they work.

Q: Is my roof in good enough shape, or should I reroof first?
You want a straight answer. A trustworthy installer will tell you to replace an aging roof before panels go on, even though it delays their sale.

Q: Which roof faces would you use, and why?
The answer should name specific slopes and tie the choice to sun and shade — not just 'the biggest one.' It shows they're designing for your home.

> **✔ Their answers reveal their care**
> How an installer talks about your roof tells you as much as what they say. Thorough, specific, honest answers are the ones you want — vague reassurance is not.

Common Questions

The questions I hear most about roofs and solar, answered plainly.

Q: Does my roof have to face south?

South is best in Ohio, but east- and west-facing roofs work well too — just spread across the morning or afternoon. Even a north-facing house often has other slopes that suit panels.

Q: Will a little shade ruin my solar?

Not ruin it, but shade — especially at midday — does cut production. Shade-friendly microinverters or optimizers help, and sometimes trimming a tree opens things up. It's a factor to plan around, not a flat no.

Q: My roof is old. What should I do?

If it's near the end of its life, reroof before installing — taking panels down later to replace the roof is costly. If it's newer or sound, you're in good shape. Have an installer or roofer confirm.

Q: What if my roof really isn't suitable?

Then consider a ground-mounted array in a sunny part of the yard, which can be aimed ideally and kept clear of shade. For many rural homes with land, that's actually the better choice.

> **★ Want an honest read on your roof?**
> Send me photos from the ground and I'll give you my straight opinion on your roof's solar potential — no ladder, no pressure, nothing to sell. Call or text (330) 200-8042.

You don't have to do this alone

You just have to remember that a friendly, patient person is one call away.

I hope this guide made evaluating your roof for solar feel a little less daunting and a lot more doable. Keep it in a drawer with your other home papers, come back to a page whenever you need it, and don't worry about memorizing anything.

When you'd rather have a hand, that's exactly what I do. I come to your home, work at your pace, and never make you feel rushed or silly for asking. A first visit is a flat $99, and for the parts that don't need me on-site I can often help right on your screen for $49. Every visit comes with a 30-day, come-back-free guarantee. I don't sell solar and I don't do the licensed electrical work or the rooftop install myself — I help you understand it all, ask the right questions, and line up a trustworthy local solar installer, so you never feel talked into anything.

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What Makes a Good Solar Roof

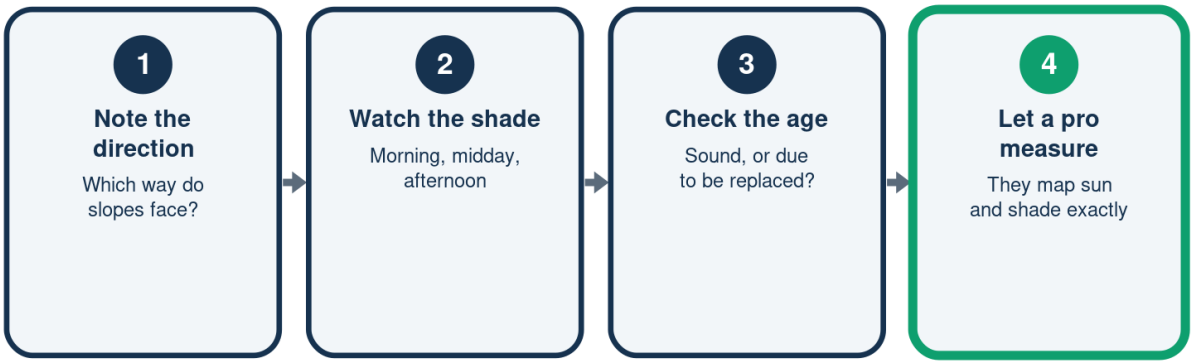
Where a roof shines, and where it gets tricky

	Better	Trickier
Direction	South/E/W	Mostly north
Shade	Clear midday	Trees, dormers
Usable area	Broad, open	Small, cut-up
Material	Asphalt/metal	Slate/shake
Age & shape	Newer, sound	Near end of life

A weak spot usually means a smaller system -- rarely a flat no.

Reading Your Roof From the Ground

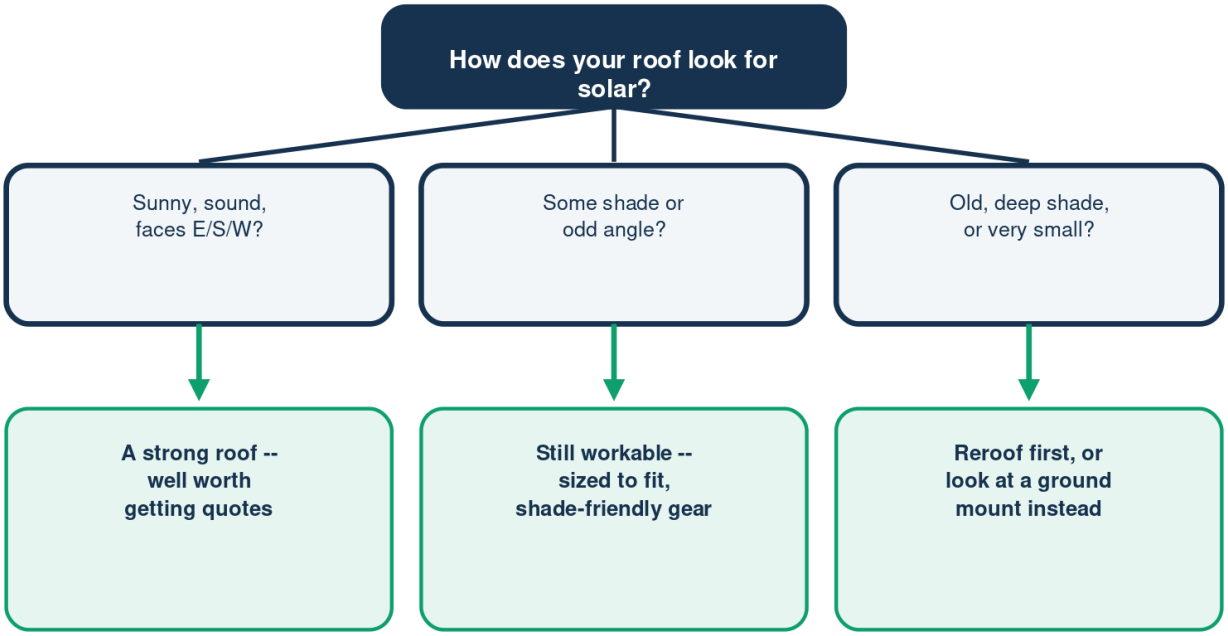
A safe check you can do from the yard



Photos from the ground tell an installer plenty -- never climb up.

Is My Roof a Good Candidate?

A first read, from your own yard



Never climb up to check -- judge from the ground and let a pro measure.

Illustration - a schematic, not to scale. Your setup may differ.

Roof Direction, Roughly

Where each slope shines (northern Ohio)

	When it works best	Rough strength
South-facing	All day	Best here
East-facing	Mornings	Good
West-facing	Afternoons	Good
North-facing	Little direct sun	Weakest

Most homes have several faces -- an installer uses the sunniest.

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A Note From Bill

A quick note from Bill.

I write these guides to make home tech a little less frustrating, and I do my best to keep every step accurate and up to date. Still, every home, device, and setup is a bit different, so I can't promise a guide will match yours exactly or fix your particular problem. These guides are for general information only — they're not professional, legal, or financial advice, and they don't replace your device's own manual or the manufacturer's instructions. Please go slow, use your own good judgment, and use everything here at your own risk. If a step involves electrical wiring, a gas appliance, a water heater, plumbing, or climbing a ladder — or if anything just doesn't feel safe — please stop and call a licensed professional (or give me a call at 330-200-8042). Bill's Home Tech and Bill Davis can't be responsible for any damage, data loss, or injury that comes from using these guides. Thanks for reading, and stay safe out there.

— Bill

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