



An Extended Guide · No. 1550

Siting Your Array for Sun and Shade

Finding the sunniest, most
sensible spot in your yard

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! Read this first — two honest truths about ground-mount solar

Two honest truths before we start, because they surprise a lot of good folks. First, a ground-mounted solar array is a professional job. It takes a licensed installer, real foundation work in your yard, building and electrical permits, and your utility's approval to connect (that approval is called interconnection). This guide is here to help you understand, plan for, and evaluate a ground mount; it is not a do-it-yourself project, and I never want you digging footings, wiring an array, or opening an electrical panel. Second, a plain grid-tied solar system — roof or ground, 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 is about choosing where the array goes — finding the sunniest, most sensible spot in your yard, and keeping it clear of the shade that quietly steals your power.

Finding the right spot in your yard

One of the real joys of a ground mount is that you get to choose where it goes, instead of being stuck with wherever your roof happens to face. But that freedom comes with a job: picking a spot that's genuinely sunny, now and for years to come. Let's walk through how.

I'm Bill, and I run Bill's Home Tech here in Portage County. In 30-plus years I've seen that the spot you pick matters as much as the panels you buy. A great system in a shady corner will disappoint you; ordinary panels in full sun will make you happy. Sun is the whole point.

The good news is that you don't have to be a surveyor. A good installer does a proper shade study with the right tools. This guide is here to help you understand what they're looking for, spot obvious problems yourself, and ask good questions about the spot they recommend.

★ Wondering if your yard has a good spot?

Tell me about your trees, your buildings, and where the sun falls, and I'll help you think it through before an installer ever visits. Call or text me at (330) 200-8042.

Siting, on one page

If you read nothing else, read this. Here's the heart of picking a spot in a handful of plain points.

- ❑ You want open exposure to the sun, generally toward the south.
- ❑ Shade is the enemy — even a little can cost you real production.
- ❑ Midday sun matters most, so guard that window from shadows above all.
- ❑ Remember the seasons: winter sun rides low and throws long shadows.
- ❑ Watch for shade that isn't there yet — young trees grow.
- ❑ Balance the sunniest spot against how far it sits from your panel.
- ❑ A good installer confirms it all with a proper shade study.

✓ Sun first, everything else second

When spots compete, start with sun. A closer or flatter spot is only better if it's still genuinely sunny. Get the sun right and the rest is manageable.

What a good solar spot looks like

Before we hunt for problems, let's picture the goal: what you're actually looking for out in the yard.

At its simplest, a good spot is open to the sky and faces the sun. In our part of the world that generally means an exposure toward the south, where the panels can drink in sun through the whole middle of the day. The fewer things standing between that spot and the sun, the better.

Notice I'm not giving you angles or compass degrees. The ideal aim and tilt are things your installer sets for our latitude — that's their department. Your part is easier and more intuitive: find the part of the yard that's open, bright, and clear of things that cast shadows.

✓ Open sky, facing the sun

If you stand in a spot and see wide-open sky where the sun travels, especially at midday, you're onto something good. That open exposure is the heart of it.

Shade is the enemy

If sun is the point, shade is the problem — and it's a bigger problem than most folks expect.

Solar panels want unobstructed sunlight, and shade robs them of it. What surprises people is how much even a modest shadow can matter; a panel in partial shade can give up far more than its shaded fraction would suggest. That's why installers fuss over shade the way they do.

So as you eye your yard, think like a shadow-hunter. What stands between your candidate spot and the sun's path across the sky? Anything that blocks the sun for part of the day is stealing production, and the goal is a spot where that barely happens.

✓ A little shade, a lot of loss

Don't shrug off 'just a bit' of shade. Because of how panels work, a small shadow can cost you out of proportion to its size. When in doubt, choose the clearer spot.

Why midday sun matters most

Not all hours of sun are worth the same. If you protect one window from shade, make it the middle of the day.

The sun is highest and strongest through the middle of the day, so that's when your panels do most of their work. A shadow that falls across your spot at dawn or dusk costs you relatively little; one that falls at midday costs you dearly. That's the window to guard.

So when you're judging a spot, pay special attention to what happens around noon. Is the spot wide open to the sun then? Good. Does a tree or a barn throw a shadow over it in the middle of the day? That's a far bigger worry than a little early-morning shade.

✓ Guard the middle of the day

If you can only keep one stretch of sun clear, keep the midday hours clear. That's when the sun is strongest and your panels earn their keep.

Shadows shift with the seasons

Here's the tricky part folks miss: the sun you see in July is not the sun you get in January, and the shadows change with it.

In summer the sun climbs high overhead. In winter it stays low across the southern sky all day — and low sun throws long shadows. A spot that's beautifully sunny in summer can spend winter afternoons in the shadow of a tree line or a building that never touched it in July.

This is exactly why you can't judge a spot by a single sunny afternoon. It has to be sunny across the seasons, especially in winter when the sun rides low. A good installer accounts for this; it's one of the main reasons their shade study is worth so much.

! Don't trust a summer glance alone

The most common siting mistake is judging a spot in summer and forgetting the low winter sun. Long winter shadows can reach a spot that looks perfect in June. Always think year-round.

Who casts the shadows

It helps to know the usual suspects, so you can look for them with a practiced eye.

Trees are the big one — especially tall ones on the sunny side of a spot. But buildings shade too: your own house, a chimney, a garage, and out in the country a barn, a silo, or a grain bin. Even a fence or a tall shrub can matter for a low array. In town, the neighbor's trees and rooflines join the list.

Walk your yard and note anything tall on the southern side of your candidate spot, because that's the direction the sun comes from. Those are the things most likely to throw a shadow across your panels when it counts.

- Tall trees, especially evergreens that hold their shade all winter.
- Your own house, chimney, garage, or a detached shop.
- Barns, silos, grain bins, and other outbuildings in the country.
- In town, a neighbor's trees and rooflines just over the line.

The shade that isn't there yet

One more kind of shade is easy to overlook because you can't see it today — the shade that's still growing.

A young tree that clears your spot now may not clear it in ten or fifteen years. Solar is a decades-long investment, so a spot has to stay sunny well into the future, not just this season. A row of saplings along the fence is worth a hard look before you plant an array in their eventual shadow.

The same goes for anything that might rise nearby — a neighbor's planned addition, a shelterbelt, a new outbuilding. You can't foresee everything, but thinking a bit ahead about what will grow or get built saves regret later.

✓ Plant with the array in mind

If you're choosing where to put new trees too, keep them off the sunny side of your array. A little planning now keeps tomorrow's shade from creeping over your panels.

Two kinds of homes, two sets of needs

Siting looks quite different depending on whether you've got acres to choose from or a single sunny corner — and town and country homes usually fall on opposite ends of that.

If you live in town or the suburbs

In town or the suburbs, your choices are few and the shade often comes from next door. A small lot may have just one workable spot, so protecting its sun matters all the more.

- You may have only one open, sunny corner — guard its midday sun.
- Neighbors' trees and rooflines can shade your yard across the line.
- Setbacks from property lines limit where the array can sit; defer to your township.
- A small, tidy spot near the house also keeps the wiring run short.

If you are out in the country on a well

Out in the country you usually have options — but also more things that cast shade, like tree lines, barns, and silos, and often a longer way back to the electrical panel.

- More open spots to choose from, so you can chase the very best sun.
- Watch tree lines and outbuildings, especially for long winter shadows.
- The sunniest spot may sit far from the house — mind the trench distance.
- Room to keep growth cut back so it never shades the low edge.

★ Only one spot, or too many to choose from?

Either way I can help you weigh sun against distance and shade for your place, before you ever sign anything. Tell me about your yard. Call (330) 200-8042.

The installer's shade study

Here's the reassuring part: you don't have to figure the sun out by eye. A good installer measures it properly.

Installers use tools that map the sun's path across your specific spot through the whole year and show exactly where and when shadows will fall. It turns the guesswork of 'that looks sunny' into a real picture of how much unobstructed sun a spot actually gets, season by season.

This is one of the clearest signs of a careful installer. If someone wants to plunk an array down without studying the shade, slow things down. A proper shade study protects your investment by making sure the spot is as good as it looks — in December as well as June.

✓ Ask to see the shade study

A good installer will happily show you what their shade study found. Seeing the sun-and-shade picture for your spot, across the seasons, turns a leap of faith into an informed choice.

The sunniest spot versus the closest spot

Often the best sun and the shortest wiring run aren't in the same place. That tension is one of the real decisions in siting.

A ground array's power has to travel back to your electrical panel, usually underground through a trench. The farther the array sits from the house, the longer that trench and the more it adds to the job. So a gorgeous sunny spot in a far corner comes at a cost, while a closer spot may give up a little sun for a shorter, cheaper run.

There's no single right answer — it's a balance. A little more sun can be worth a longer trench, or a slightly shadier but much closer spot can be the smarter buy. Our trenching guide digs into that run in full; here, just know the trade-off is real and worth weighing.

✓ Weigh the sun against the run

When two spots are both decently sunny, the closer one to your panel is usually the cheaper, simpler choice. Save the far corner for when its sun is clearly worth the extra distance.

Slope, drainage, and the lay of the land

Sun and shade come first, but the ground itself gets a vote too. A spot has to be buildable, not just bright.

A gently sloping or level spot is easiest to build on and aim well. A steep slope can complicate the foundation and the frame, and a low spot that collects water brings its own troubles — soggy ground is harder to anchor in and, as our frost-and-soil guide explains, wet ground is prime material for frost heave.

You don't have to grade or measure anything yourself. But when you're sizing up a sunny spot, give a thought to whether it's reasonably level and whether water pools there after a hard rain. Those are things your installer will weigh, and things worth mentioning if you've noticed them.

✓ Bright and buildable both

The best spot is sunny and sits on sensible ground — fairly level, draining well. If your sunniest patch turns into a pond after a storm, that's worth flagging early.

Room, setbacks, and getting equipment in

A spot also has to have room — for the array itself, for the rules, and for the machines that build it.

An array needs its open footprint plus a little breathing room around it for access and service. On top of that, your township usually requires the array to sit back a certain distance from your property lines, and there may be other local rules. Those setbacks vary by place, so I'll leave the specifics to your township and our permits-and-setbacks guide.

It's also worth a thought about how the crew and their equipment will reach the spot to build it. A sunny patch boxed in by fences, gardens, or tight gates can be awkward to work in. None of this is your problem to solve — just good to have on your radar.

✓ Leave room to work and to grow

Pick a spot with a little elbow room — for access today and perhaps for adding panels down the road. A cramped spot can limit you later.

A good spot versus a poor spot

The whole comparison on one page, to keep or photograph as you walk your yard.

	A good spot	A poor spot
Sun	Open all day	Shaded midday
Trees/buildings	Well clear	Close and tall
Winter shadows	Still sunny	In the shade
Slope/drainage	Gentle, drains	Steep or soggy
Distance	Sensible run	Far off corner
Future shade	Stays clear	Trees growing in

No spot is perfect on every line, and that's fine. You're looking for one that's strong where it counts most — open midday sun, year-round — and reasonable on the rest.

How your installer picks the spot

Here's the orderly way a good installer settles on where your array goes, so the process feels familiar.

They start by finding the open, sunny parts of your yard, then study the shade across the seasons with their tools. They weigh each promising spot's sun against how far it sits from your panel, and they check the ground — slope, drainage, setbacks, and access. Out of all that, the best overall spot emerges.

It's a balancing act, not a formula, which is why experience matters. Your job is simply to understand the factors well enough to follow their reasoning and feel good about the spot they land on. When they can explain why, in plain terms, that's a fine sign.

✓ Ask 'why this spot?'

A good installer can tell you, in plain words, why they chose one spot over another — the sun, the shade, the distance, the ground. If the answer makes sense to you, that's exactly what you want.

Balancing all the trade-offs

Siting is really the art of balancing a handful of pulls at once. Let's name them side by side so the balance makes sense.

Sun pulls you toward the most open spot. Distance pulls you toward the closest one. Slope and drainage pull you toward the most buildable ground. Setbacks and access set the outer limits, and looks may pull a little too. Rarely does one spot win on all of them at once.

The winning spot is usually the one that's genuinely sunny year-round and reasonable on everything else — not the one that's perfect on a single measure. Keeping sun at the top of that list, and letting the rest fall into place, is the whole knack of it.

✓ Strong on sun, sensible on the rest

Don't hunt for a flawless spot — there usually isn't one. Aim for great sun and reasonable everything-else, and you'll have made a fine choice.

A careful word about the trees

Sometimes the sunniest future comes from removing a tree or two. If so, please go about it the safe way.

Taking down or topping a large tree to open up the sun is real, hazardous work — not a weekend job with a chainsaw and a ladder. Big-tree removal sends people to the hospital every year. If a tree needs to come out for your array, hire a professional arborist or tree service and let them do it properly.

And a neighborly note: you can only clear trees on your own property. You can't count on a neighbor's tree coming down, and it's not worth a quarrel. Plan your spot around the shade you can actually control, and treat any neighbor cooperation as a bonus, not a given.

! Never take down a big tree yourself

Please don't climb a ladder with a running saw to clear shade. Tree removal is genuinely dangerous — hire a professional. No amount of extra sun is worth a serious fall or injury.

Living with the spot you pick

Once the array is in its spot, a little seasonal awareness keeps you content with the choice.

You'll notice production ebb and flow with the seasons — strong in the long sunny days, quieter in the low-sun depths of winter. That's normal and already part of the whole-year picture. A ground array's reachable height also makes it easy to keep the low edge clear of grass and snow, so nothing creeps up to shade it.

Keeping growth trimmed back is part of protecting your sun over the years, and our mowing-and-vegetation guide covers doing it safely. Our snow-and-winter guide covers what to expect when the flakes fly. Mostly, though, a well-sited array just quietly soaks up sun and asks little of you.

✓ Keep the sun you chose

The spot you picked stays great only if it stays clear. A little seasonal trimming and snow-clearing keeps creeping shade from undoing your good choice.

Questions to ask your installer

Bring these to an installer and you'll quickly see how carefully they're choosing your spot.

Q: Where would you put the array, and why there?

You want a clear answer about sun, shade, distance, and ground — not just the easiest place to build. A reasoned why is the sign of a thoughtful installer.

Q: Did your shade study account for the low winter sun?

Winter's long shadows are where spots go wrong. A good installer studies the sun across the whole year, not just a sunny afternoon.

Q: How far is this spot from my panel, and what does that add?

Distance drives the trench and the cost. Understanding the run helps you weigh a sunnier-but-farther spot against a closer, simpler one.

✓ Sun and season in every answer

The best answers mention both the sun and the seasons. An installer who talks about how a spot performs in December, not just July, is one who knows their craft.

Let the shade study do the hard part

If all this talk of seasons and shadows feels like a lot to track, here's the comforting truth to end on.

You don't have to map the sun yourself. Your walk-around eye is just for spotting obvious sun and obvious shade, and for asking good questions. The precise work — how much sun a spot really gets across the whole year — is exactly what a good installer's shade study is built to answer.

So use this guide to understand what makes a spot good, to notice the clear problems, and to know a careful installer from a careless one. Then let their study carry the fine detail. That partnership — your good questions plus their real measurements — lands you a spot you'll be glad about for decades.

✓ Your eye, their tools

Trust your eyes for the obvious and their instruments for the exact. Between the two, you'll choose a spot that stays sunny long after the install.

Common Questions

The questions I hear most about picking a spot for a ground array.

Q: Which way should the array face?

Generally toward the south here, where it catches the most sun through the day. The exact aim and tilt are things your installer sets for our latitude, so I'll leave the fine points to them — you just want an open spot facing the sun.

Q: How much does a little shade really hurt?

More than you'd think. Because of how panels work, even a small shadow can cost production out of proportion to its size, especially at midday. When choosing between spots, the clearer one usually wins.

Q: My sunniest spot is far from the house. Is that a problem?

Not a deal-breaker, just a trade-off. A far spot means a longer trench and more cost to run the wiring back. Weigh the extra sun against the extra distance — sometimes it's worth it, sometimes a closer spot is smarter.

Q: Do I need to cut down trees for solar?

Sometimes clearing a tree opens up the sun, but never take a big tree down yourself — hire a professional arborist. And plan around shade you control; you can't count on a neighbor's trees coming down.

★ Not sure your yard has the sun?

Before you spend a dime, let's talk through your trees, buildings, and where the sun falls. Call or text me at (330) 200-8042 and I'll help you judge your yard honestly.

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 choosing a sunny spot for a ground-mounted array 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.

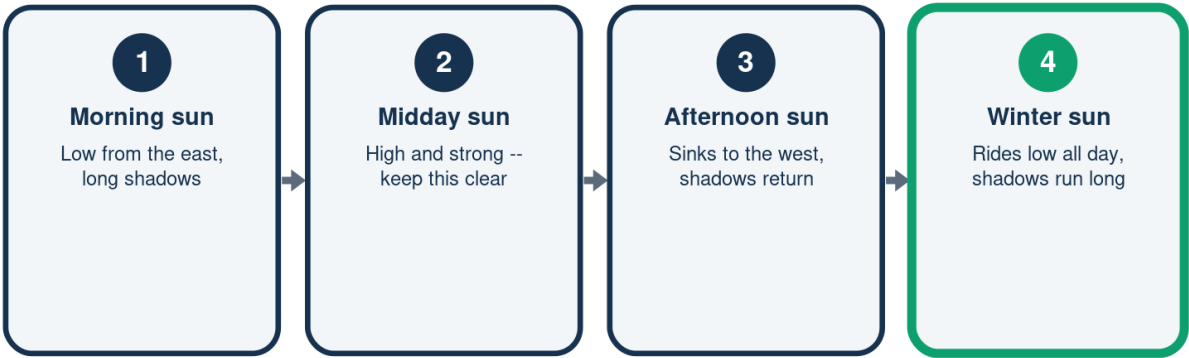
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Watch the Shadows Move

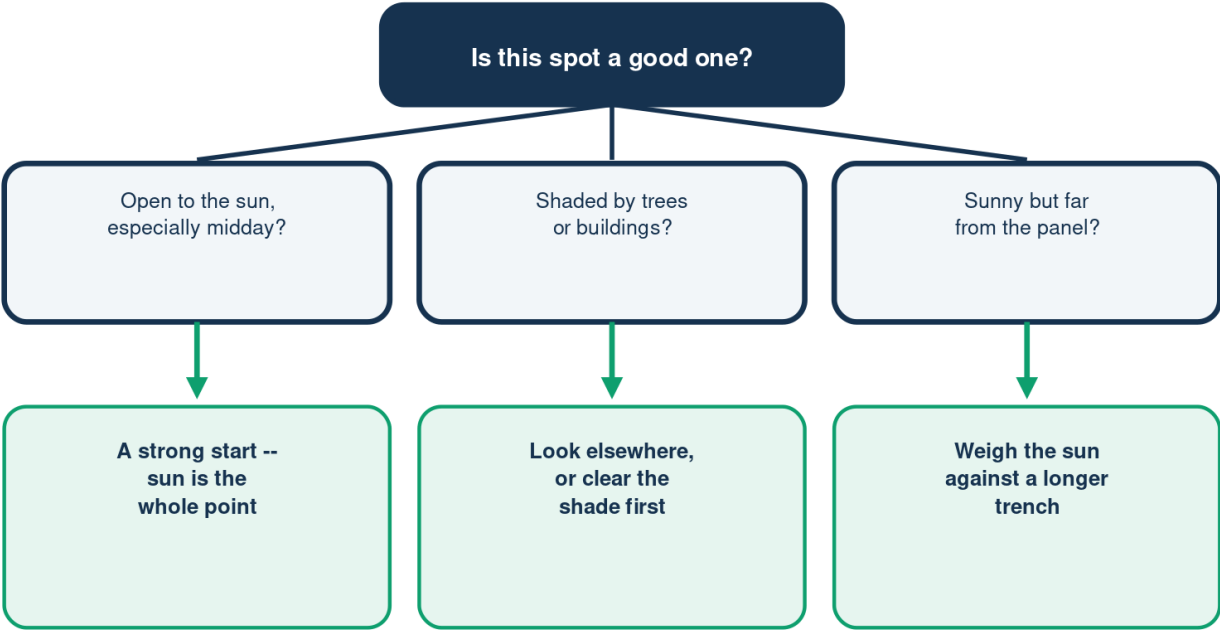
The sun -- and the shade -- shift through the day and the year



Judge a spot across the seasons, not on one sunny afternoon.

Is This Spot a Good One?

A quick gut-check before the installer's study



A proper shade study checks it across the whole year -- not by eye.

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

A Good Spot vs a Poor Spot

What sets the sunniest, most sensible spot apart

	A good spot	A poor spot
Sun	Open all day	Shaded midday
Trees/buildings	Well clear	Close, tall
Winter shadows	Still sunny	In the shade
Slope	Gentle, drains	Steep or wet
Distance	Sensible run	Far off corner

Aim for strong sun year-round and reasonable on the rest.

How a Site Gets Picked

A balancing act, done in a sensible order



Sun leads the list; the rest falls into place around it.



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A Note From Bill

A quick note from Bill.

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