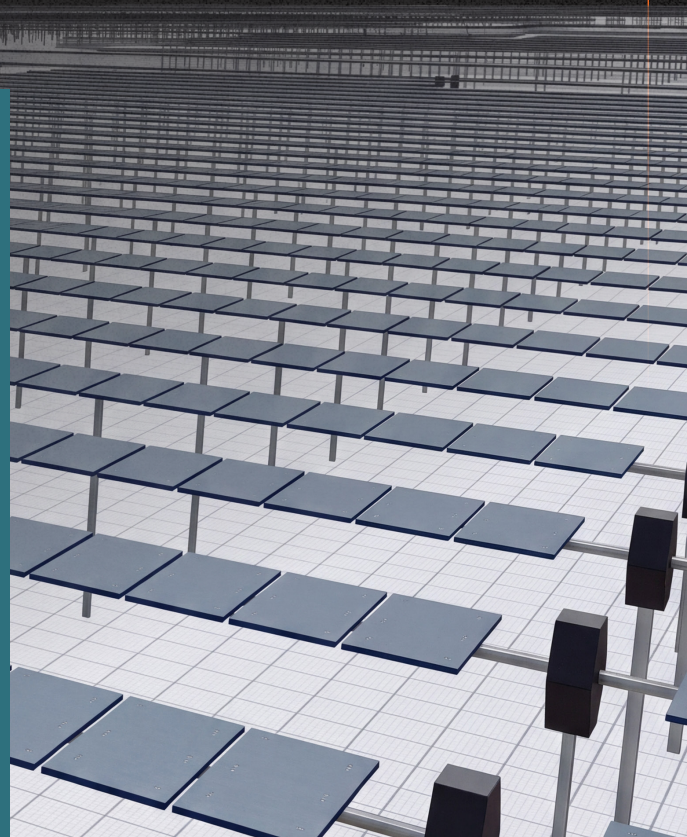


CASE STUDY

How a Shared Solar Design Platform Transformed the Developer–EPC Relationship

In utility-scale solar, the developer and the EPC often operate in parallel universes. The developer handles land, permitting, and early conceptual layout. The EPC, as the acronym suggests, handles detailed engineering, procurement, and construction. The handoff between these two worlds is where projects face the risk slowing down, incurring new costs or becoming riskier. It's the delta where the most important design decisions often fall through the cracks.

The right solar design software, when utilized by both parties, bridges this gap. It gives both organizations the ability to work within the same environment with a shared language for design decisions. Utilizing software as a turnkey for interoperability shifts the developer and EPC relationship from largely transactional to collaborative, with easier decision-making, earlier.



The Pre-Construction Gap Between Developer and EPC

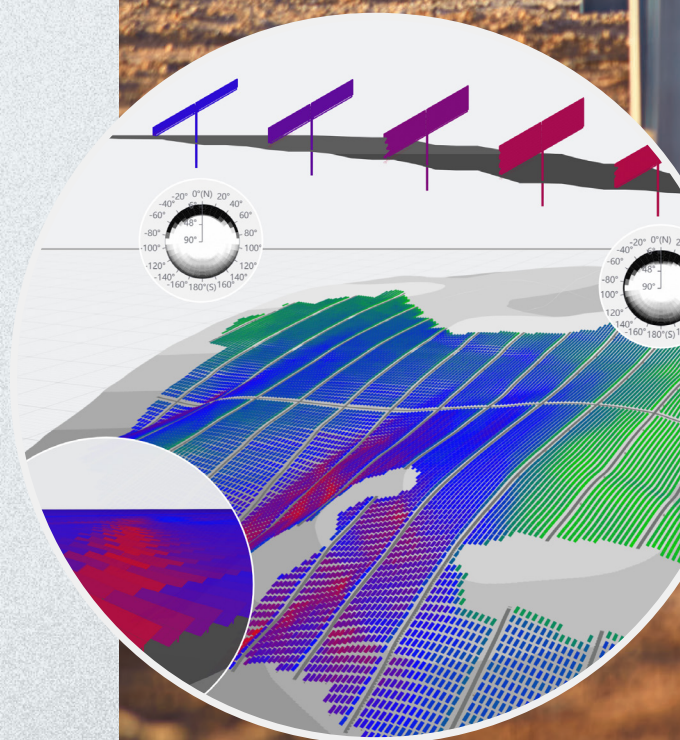
The traditional developer–EPC workflow creates friction risks at every stage of handoff. For instance, if conceptual layouts from developers don't fully reflect real-world constructability, EPCs often have to start from scratch. The result is rework, timeline compression, and cost surprises.

The individual tools available to both sides thus far have contributed to this gap. CAD-based tools are precise, but time-consuming; design revisions require significant turnaround time, files are difficult to share across companies, and working with another organization's CAD models is notoriously difficult.

Most options on the table don't provide what developers and EPCs actually need: the ability to quickly explore design alternatives together, share objects and catalog items seamlessly, and make informed decisions before timelines become punishing.

How RWE and McCarthy Building Companies Leveraged a Shared Solar Design Platform to Collaborate Across the Developer–EPC Divide

RWE is a global IPP/developer and owner-operator of utility-scale solar projects across the United States. McCarthy Building Companies is one of the nation's largest EPCs in solar. The two companies have a deep, multi-project relationship spanning construction, procurement, and early-stage design, collectively covering well over 1 GWdc in portfolio projects.



Challenges:

Despite a strong working relationship, RWE and McCarthy were limited by the same tooling gap facing the broader industry. RWE's development engineering team needed fast, accurate layouts for sites at every stage, from greenfield conceptual design through 30% evaluation, but web-based tools couldn't deliver the granularity needed for credible cost estimation. CAD-based tools could, but not at the speed the development timeline demanded.

On the EPC side, McCarthy's design team was producing detailed engineering packages for construction, but lacked a way to contribute earlier in the process, when the most impactful design decisions get made. Critical details like DC wiring topologies, grading risks, and pile sizing were typically deferred until later in design progression, creating rework and cost surprises downstream.

Both sides needed a platform that could support real-time collaboration, offer quantities approaching CAD-level accuracy, and allow design objects to move seamlessly between organizations — all with the speed and reliability of an online tool that doesn't glitch out under real project data.



The Solution:

RWE and McCarthy both implemented PVFARM's web-based solar design platform. The adoption wasn't a top-down corporate mandate, but grew organically from a workshop RWE organized with McCarthy to better understand what was missing from initial designs. In that meeting, McCarthy introduced RWE to PVFARM.

After discovering its joint potential, both the developer and the EPC adopted the platform independently. McCarthy could now validate designs while RWE was working on them—not downstream, but in parallel. Several capabilities proved especially valuable:

Interoperability and object sharing.

PVFARM allows direct sharing of design objects between organizations. When RWE needed a terrain file, McCarthy could export it as an object and send it over. McCarthy could reciprocate with catalog items like wire types, component specs, and harness configurations. This kind of seamless exchange wasn't possible with traditional CAD, where reading another organization's work was a persistent pain point.

DC wiring designed around real products.

DC wiring is one of the most complex and least understood aspects of utility-scale solar design, a concept that many engineers, even experienced ones, struggle to grasp. PVFARM approaches it differently than any other tool on the market. Rather than specifying theoretical cable sizes that may not exist as purchasable products, PVFARM designs topologies — clustering, harness, trunk bus — around market-available components from manufacturers.

"You can wire things up however you want, but at the end of the day, you need to design according to what's actually available out there," said Cameron Connolly, design manager at McCarthy. "PVFARM is the only platform I've seen that's made it possible for us. All these topologies were created with those products in mind; it actually makes it possible to design something that's ultimately buildable."



This product-driven approach means designs are realistic, not theoretical. And because topologies are identified earlier in PVFARM than with other tools, both the developer and EPC can align on DC collection strategy before detailed engineering even begins — a step that most clients don't reach until far later in the process.

Grading, pile sizing, and civil/structural estimation.

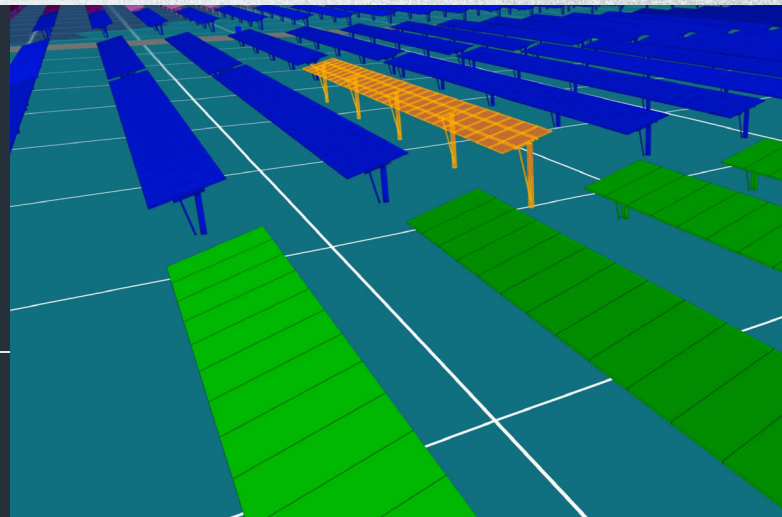
Developers typically rely on rough per-MW-DC estimates for grading and pile costs. PVFARM enabled RWE to generate actual quantities for rough order of magnitude array grading, road grading, and pile configurations, then share those models with McCarthy for validation against real-world construction data.

GIS integration, boundary editing, and coordinate systems.

When GIS teams provide buildable area maps with complex boundaries and numerous exclusion features, many tools crash under the data load. PVFARM handled these files reliably, and making changes to inclusions and exclusions was quick and easy — no waiting for a CAD reprocessing cycle. The coordinate system feature allowed designs to be handed off directly to civil engineers in the format they need, eliminating a common friction point between web-based design and detailed engineering.

Speed and reliability of an online tool.

The value of PVFARM isn't just what it can do; it's how fast it does it without glitching. Saved catalogs and reusable design objects mean quicker layouts from project to project. The platform offers quantities close to CAD with the speed of an online tool, which is crucial when design revisions and scenarios can't wait for a detailed CAD cycle.



"PVFARM bridges the gap between the less accurate, inflexible web-based tools and the time-consuming, detailed CAD-based tools. It gives you quantities close to CAD with the speed and ease of an online tool," said a senior engineer at RWE.

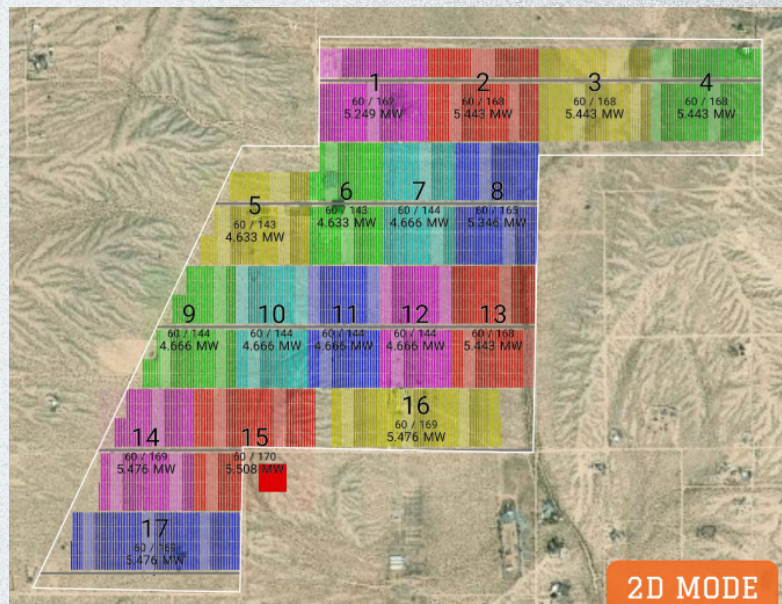
The synergy between RWE's engineers and McCarthy's design team illustrates how the platform works as a deeper collaboration tool. It allowed the working relationship to focus on optimization logic, aligning on nomenclature, and exploring design dimensions together rather than exchanging static files back and forth. PVFARM served as a "common language": a place to discuss DC wiring schemes, clustering approaches, and 3D visualization in real time, and to produce designs that both organizations could immediately use.

Improvements and Benefits

RWE and McCarthy describe PVFARM's value differently, which itself is telling. The platform serves distinct but complementary needs on each side of the developer-EPC relationship.

For the Developer (RWE):

- Better collaboration and knowledge transfer with their EPC partner, including shared catalogs and design objects that eliminated file format friction.
- Faster layouts with saved catalogs and reusable design objects, enabling quicker turnarounds from project to project.
- Quick and easy modifications to inclusions, exclusions, and boundary changes — iterations that used to require CAD reprocessing.
- More accurate early-stage CAPEX estimates for DC wiring, grading, and civil/structural work, areas where per-MW-DC rules of thumb had previously been the only option.
- A single platform usable across the full project lifecycle: greenfield, design, evaluation, construction support, and even post-completion review using imported IFC drawings.
- Self-sufficiency on tasks that previously required pushing work to other teams or waiting on external engineering.



For the EPC (McCarthy):

Connolly is clear that PVFARM's value is not about throughput or doing more projects; it's about making better decisions earlier in the ones they're already doing. "PVFARM lets you get a much more granular view super early and start to actually make some of these decisions," he said.

- Multiple percentage points of improved LCOE or IRR through better directional cost decisions made early in design progression.
- Reduced rework and downstream design changes by surfacing grading risks, DC wiring complexity, and pile sizing challenges before they become expensive problems.
- Ability to evaluate more design scenarios for the same number of projects, rather than being locked into a single layout path.
- Customers arriving at the EPC process with "EPC-ready" technical specifications driven by realistic, product-based topologies — not theoretical designs that need to be rebuilt from scratch.



The Unexpected Value: Projects Not Built

One of the most compelling benefits of the RWE, McCarthy, PVFARM collaboration isn't about the projects they built. It's about the ones they didn't.

By working with PVFARM early in the development cycle, both companies have been able to identify insurmountable design challenges before committing significant resources. A project that looks viable on paper might reveal serious grading problems, DC collection constraints, or other risk factors once modeled at a granular level in PVFARM.

This early risk identification protects both the developer (who avoids investing in a project with poor economics) and the EPC (who avoids the cost and risk of building a fundamentally challenging site). The relationship moves beyond transactional, project-based work to a pipeline-based approach focused on mutual success.

Conclusion

In utility-scale solar, the gap between developer and EPC is one of the industry's most persistent sources of inefficiency, risk, and rework. The tools available to each side have historically reinforced that gap: fast-but-inaccurate web tools for developers, precise-but-slow CAD tools for EPCs, and no shared language between them.

The RWE-McCarthy partnership shows what happens when both sides adopt a shared design platform. The relationship shifts from file exchanges and handoffs to real-time collaboration and shared decision-making. Design decisions that used to surface late in the process (creating rework, cost surprises, and timeline compression) get made early, when they're cheapest to change and most impactful to get right.

The platform isn't just a tool for individual companies. It's becoming the shared infrastructure for how the developer-EPC relationship works.

