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# Digging Deeper into Construction Technology

[rsmowery.com](http://rsmowery.com)

**MOWERY**

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## **Technology continues to change the way people communicate and how information is processed.**

While late adapters to advances in technology, the impact on the construction industry has been profound and has forever changed the way jobs are run and people communicate. Over the past few years, technology has become so advanced that construction companies are able to use tools and software to make processes more efficient; thus, saving client's valuable time and money.

From mapping out entire projects with BIM software, to increasing collaboration on jobsites through messaging apps, to using virtual reality to address project challenges and concerns before ground is even broke, Mowery utilizes cutting-edge technology to provide clients with a remarkable construction experience.





## THE MOWERY DIFFERENCE

In addition to a three-year extended warranty, a quality assurance program, and a customized construction experience, part of **the Mowery difference** includes the use of advanced technology tools and software. Leading-edge technology not only makes projects easier, but today's platforms also include many bells and whistles that clients find informative and exciting.

✓ **Extended  
Warranty**

✓ **Quality Assurance  
Program**

✓ **Customized  
Construction  
Experience**

✓ **Advanced  
Technology Tools &  
Software**

## A Phased Approach to Technology

*Read on to learn how Mowery uses technology during every phase of construction to open lines of communication with the team and clients as well as ensure projects are completed on-time and on-budget.*



# Phase One: Design

As a design-build construction company, it is critical Mowery leads with the latest design technology. Using software such as SketchUp, Revit and Enscape, Mowery's design team helps clients visualize their final build, so the right decisions can be made earlier.

**Mowery's design team helps clients visualize their final build, so the right decisions can be made earlier.**

Using **SketchUp**, Mowery's design team produces simple and understandable renderings for clients. This software allows designers to produce rough and clean sketches as well as paintings, so the right visual style can be selected based on

the client's wants and needs. SketchUp helps Mowery accelerate projects by quickly creating designs. It has features that make 3D models look complete, including geolocating the model with topography, aerial photo context, solar orientation and a vast library of entourage. Using these features, designers can perform shadow studies for sun shading design, and when appropriate, use SketchUp for photo-matched renderings



Revit - 3D Modeling

and animations. Together, these features allow Mowery's design team to better understand and address the build.

In addition to SketchUp, the team uses **Revit**, which is the most common BIM tool in the United States. In early design, before detailed modeling, Revit allows designers to create concept floor plans. Initial concept floor plans with room areas and programmatic color-coding of spaces help to quickly convey floor plan intent. Additionally, multidisciplinary BIM models are reviewed for conflicts in Revit itself. As designs progress past the schematic phase, Revit's ability to detail, coordinate and



## Phase One: Design

revise, results in better coordinated drawing set references allowing Mowery to avoid undesirable in-field coordination.

Lastly, due to the growth of computing's power, gaming engines can now render impressive visuals in real time. Using cutting-edge technology, Mowery's designers can properly model and assign materials in Revit and then open a 3D panorama with **Enscape**. Designers and clients can then virtually walk around a high-

quality rendered environment in real time using Enscape to view fine details within the build.

Using the latest design software has provided Mowery with new tools for coordination, including the ability to avoid more field conflicts and additional field coordination. It helps the team convey design intent faster, which aids in managing clients and schedules. Additionally, providing clients with real-life renderings of their projects before ground breaks is just one way Mowery enhances the customer experience.





## Phase Two: Bidding & Estimating

Even in the early phases of a project, technology comes into play. Using an in-house, custom-designed **Excel** workbook, as well as **ProEst** and **eTakeoff**, the Mowery team provides prospects and clients with very detailed and sophisticated project scopes and costs.

**ProEst** is a leading estimating software that allows contractors to dynamically plan their upcoming projects. Additionally, this platform provides both employees and clients access to project information 24/7.

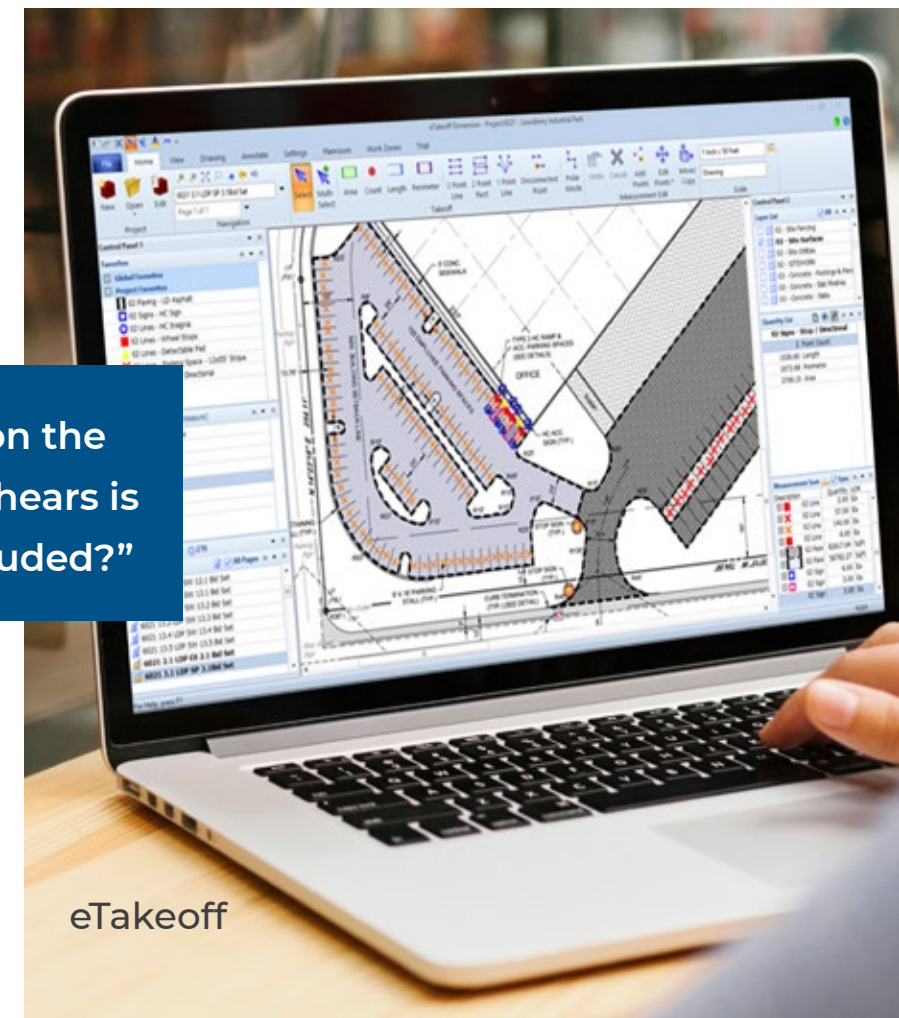
**eTakeoff** simplifies how estimators work and allows companies to quicken the pace and accuracy of project starts by breaking down work capabilities, auto counting and more.

By utilizing Excel workbooks, ProEst and eTakeoff, Mowery provides clients with the most accurate information during pre-construction. Each tool is sophisticated and detailed, allowing the Mowery team to account for every part and piece of a project both in scope and in cost.

For example, one question the team often hears is “what’s included?” If you think about it, there are a lot of different



ProEst



eTakeoff

One question the team often hears is “what’s included?”



## Phase Two: Bidding & Estimating

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items in just one room. From the light fixtures, to the doors, to the drywall and paint, to the outlets, the list goes on and on. Using technology, documents that outline specific details about what products will be included in their build can easily be shared with the team and clients.

Not only does this bidding and estimating technology provide accurate information during pre-construction, but the tools also help accelerate the process. The Excel workbook sheets are tailor made to allow team members to quickly and accurately capture costs and scope as they move through the documents. Additionally,

shortcuts are set up within Excel to help navigate the workbook.

From pre-stored compounding formulas for complex calculations, to macros that allow employees to cut, slice and compile pricing in any format or order that a client wants to see, Mowery has an efficient system in place that helps accelerate bidding and estimating. Having different software options to tap into for this phase of construction allows the team the ability to select the platform that works best for specific project types and requirements, making the process more efficient.

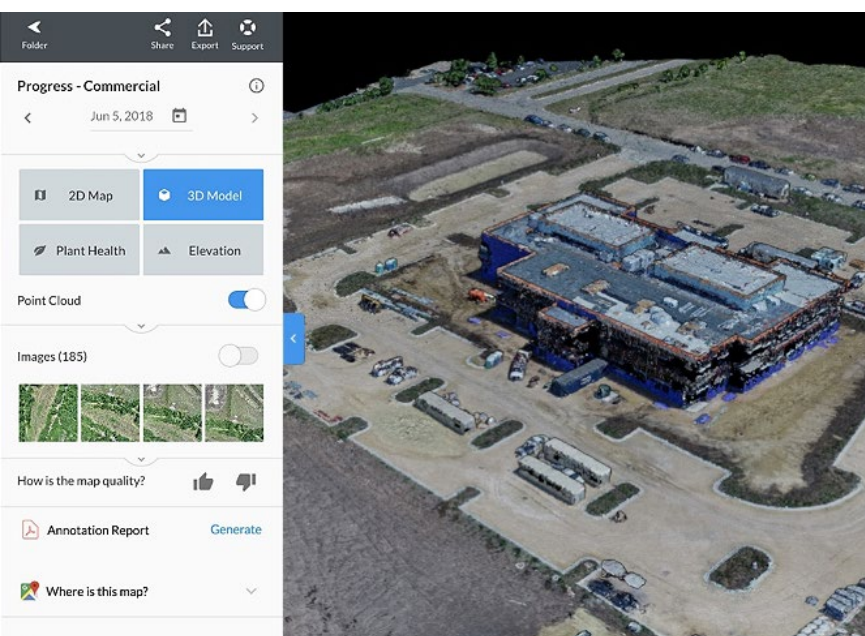


## Phase Three: Construction

As you can see, many forms of technology come into play before construction even begins. Once ground is broke, Mowery uses additional construction software to ensure jobsites are safe and each phase of construction is completed without any roadblocks.

Once construction begins, **Procore** is a platform that is used daily. This construction software allows Mowery employees to collaborate and connect with the entire team from one easy to use platform. Procore stores project information, including timelines, scopes, costs, project images and daily safety logs, with this information being accessible 24/7 to the team. Additionally, to create a remarkable customer experience, each client has access to their project information within Procore, so they can view updates, photos and more throughout any phase of construction. At Mowery, we use Procore to store jobsite photos not only for our own records and marketing purposes, but to share with clients to provide them with updates on how construction is coming along.

While we use many different types of cameras including OxBlue and Owl Lab, **drones** have really become an essential technology in the construction industry. These





## Phase Three: Construction

small, remote-controlled devices allow our team to take aerial shots of construction sites and projects. This allows us to better survey a jobsite before construction begins to identify any potential issues as well as provide our clients with eye-catching images of every phase of their construction project.

Lastly, **virtual reality (VR)** enhances projects and improves the customer experience. VR refers

to computer-generated simulations in which persons dynamically interact with artificial three-dimensional environments using electronic devices, such as motion and position sensing goggles with display(s) and/or input devices like gloves fitted with sensors. Mowery currently uses VR for client understanding, decision-making and for presentation, but sees this technology evolving and being used for in-field coordination.





## Phase Four: Post-Construction

Just because the build is complete does not mean the construction process is done. After a new warehouse or office space is built, there are other important steps that must be taken, such as final inspections.

Using a module in Procore known as **Punch List**, team members are able to streamline final inspections and detect deficiencies early in the process. This allows Mowery to disseminate information immediately to the appropriate team member and/or subcontractor so the issue can be corrected.

Additionally, collaboration is key to finishing projects on-time and on-budget. At Mowery, we collaborate with designers and field workers to consistently manage quality control. Punch List aids with collaboration and communication by allowing for complete transparency. The Mowery team can upload photos, mark up photos, identify problem areas on the blueprints and assign responsibility to the appropriate team



Punch List

member, so any issues with the final build can be addressed immediately.

There are many benefits to using Punch List to streamline final inspections. Using this module in Procore allows the Mowery team to accelerate the final inspection process as well as holds team members and/or subcontractors accountable for



## Phase Four: Post-Construction

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resolving issues. Using this technology, issues are resolved as quickly as we identify them.

The software works rapidly and can instantly generate reports to be sent to the team to track, identify and confirm when issues are corrected on-site.

**Mowery has been able to complete punch lists in half the time as well as reduce the number of deficiencies identified during the final inspection process.**

Since implementing this technology, Mowery has been able to complete punch lists in half the time as well as reduce the number of deficiencies identified during the final inspection process. This allows for the project to be accelerated and gets clients in their new facilities faster.



## Why Mowery?

At Mowery, we don't just keep up with technology, we pride ourselves in being ahead of the field by implementing the latest cutting-edge tools and software. In fact, because project technology is one of our differentiators, we have a tech committee that meets regularly to discover ways Mowery can better the technology we use to enhance projects and improve the customer experience. No matter whether clients are working with our design-build team or our Special Projects Group (SPG), our passion for construction technology is obvious in every service area and market we serve.

If you are looking to partner with a design-build or general construction contractor, who prioritizes technology to ensure projects are completed on-schedule and on-budget all while offering you exclusive access to project information and updates, **connect with our team today**. We'll share how we can use technology to bring your next project to life and exceed your expectations.



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