IMPROVED
PROCESSES.

BETTER
OUTCOMES.

How Trimble Business Center makes Connected Construction a Reality.

▶ ▶ ▶ ▶ ▶

For construction enterprises of all sizes, Trimble Construction Software provides valuable resources at every step—from concepting and design to operations and maintenance. At the heart of every Trimble Construction Software application is the idea of "connected construction." These are technology solutions that connect each phase of the construction management project lifecycle to increase efficiency, empower better decisions and ultimately create optimal outcomes.

To demonstrate connected construction in action, we interviewed Patrick L'Heureux, head project engineer at Severino Trucking in New Hampshire. Patrick's feedback shows how his organization uses Trimble's software resources for projects ranging from minor utility upgrades to massive highway projects. From the usefulness of Trimble Business Center as an automation centerpiece to specific add-ons for things like 3D modeling, meeting OSHA certification and much more, Patrick shares how Trimble Construction Software keep Severino Trucking running on-time and on-budget.

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SEVERINO TRUCKING & TRIMBLE CONSTRUCTION SOFTWARE

One of the largest earthworks moving contractors in the State of New Hampshire, Severino Trucking takes on a variety of projects—from simple urban utility upgrades to commercial and residential construction, to some of the state's largest highway projects. Severino currently employs around 160 people—a number that has increased substantially in recent years. Their workforce includes about 10 office workers, 20 vehicle and machine mechanics and more than 100 field staff.
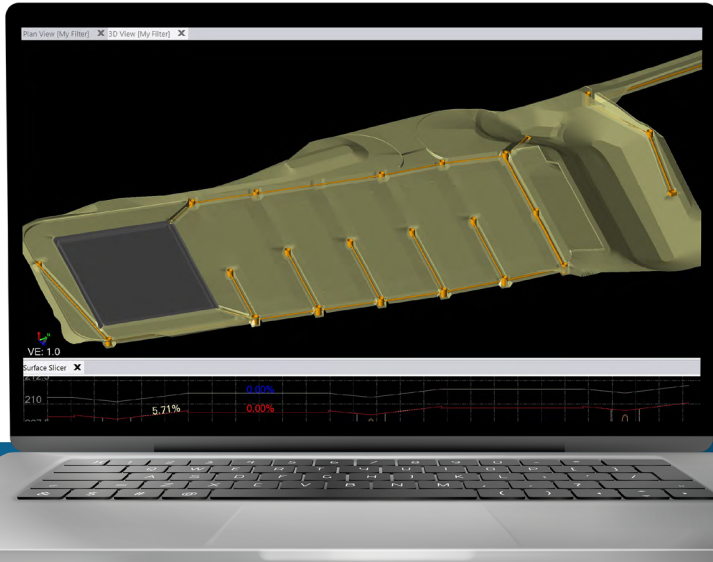

" I'M TRYING TO PERFECT THE PROCESS, START TO FINISH. "

◀ **Patrick L'Heureux** | Severino Trucking

Head project engineer Patrick L'Heureux has spearheaded the organization's adoption and integration of construction software. "I handle our technology integration throughout our sites and our company," explains Patrick, "whether that's with machine control, software and tools on our data collectors, software for tracking billable hours and production, or project management solutions." With each successive project providing hard-earned data about what works and what needs to be improved, Patrick capitalizes on that information all the way through from bid to build to once it's off his table for an as-built. He optimistically describes his role as "…trying to perfect the process, start to finish."

As an experienced contractor, Patrick and his team know what is feasible, what is real-life capable, and what looks good on pen and paper. "We try to vet out constructibility issues before we go to a site, so we can save our clients money and be more efficient. Sometimes our alternative construction cost might be the same amount, but we can provide clients with a better product by leveraging from our years of experience and executing work more productively." This kind of value engineering at the beginning of a project helps Severino see where cost savings might be found along the way.

TRIMBLE BUSINESS CENTER:
THE BRAINS OF THE OPERATION

The centerpiece of Severino's construction software buildout is Trimble Business Center (TBC). With a powerful combination of survey and construction functions, TBC helps users manage construction data across an entire project lifecycle—including estimating earthwork and material quantities for bids, preparing data for construction stakeout, building 3D models to optimize machine operation, tracking productivity, and delivering first-class as-built documentation.

TBC is packed with capabilities and light on limitations. It is a game-changing solution that helps Patrick quickly and easily create accurate, integrated 3D constructible models for all his sites. "The amount that you can do with TBC is pretty incredible," Patrick explains. "You can create complex surface models, tabulate earthwork quantities, model utilities in 3D and employ your quantities off of that... there are so many different modules, tools and tricks that you have access to within TBC that make the process go a lot smoother."

> " THE AMOUNT YOU CAN DO WITH TRIMBLE BUSINESS CENTER IS PRETTY INCREDIBLE. "
>
> **Patrick L'Heureux** | Severino Trucking

Like any automation product, there is a learning curve associated with adopting Trimble Business Center, and each individual project involves a certain amount of advance work. Once a user setups their templates and fine tunes the work tool ribbons, everything goes smoothly because so much of the work is already done.

This can also be said about the data that is then used throughout the organization for a project. "You're not sending an unprepared dataset to five different people and then each individual prepares this data with their own interpolation that may not correspond with the others," says Patrick. "That master dataset that was prepared by one person gets shared to all individuals on a project, allowing more instantaneous access to project data, a reduction in redundant tasks and better quality control because everyone is checking and working with the same set of information."

CUSTOMIZABLE STARTUP OPTIONS

Trimble Business Center currently offers six new subscription options to help any size company start using our advanced quantity takeoff and integrated construction data software.

▶ **Site + Field—data prep, survey, surface, alignment, and corridor**

▶ **Survey + Mapping—complete survey, scanning, and mapping workflows**

▶ **Construction—data prep, survey, takeoff, mass haul, and advanced corridor planning**

▶ **Aerial Survey—UAV processing and surveys**

▶ **Mobile Mapping—for customers focused on MX9 processing**

▶ **Enterprise—includes all core surveying and vertical surveying and construction workflows mentioned above, including aerial surveying and tunneling**

CONNECTED CONSTRUCTION 101

What do we mean when we say connected construction? Well, it is as simple and powerful as it sounds: all phases of your projects and all essential team members (whether behind a desk or behind the controls of an excavator) are seamlessly linked to ensure that the most current and complete data is available. To everyone. Always.

Individual changes made in TBC are automatically reflected in the rest of the project space. "Everything is linked and dynamic," says Patrick. "Once you have run that rebuild on a model, you know that all of the dependent objects are going to rebuild automatically. If I change the centerline of my road, I know all my curb and all my sidewalks are also going to update and be within the correct design criteria. The next step is to share these changes." Trimble Business Center has plugins that directly tie to Trimble's other products such as WorkOS, Trimble Connect and WorksManager (WM) to share these modifications.

"Integration with WorksManager allows for design changes to quickly be sent to field devices, providing connection throughout your organization. The WorksManager integration gives me the assurance that critical design changes are shared to all my devices that need it." says Patrick. " The WM integration allows me to manage my design to our field devices within TBC. I can tell if I have made changes to a project and haven't published them to the field." These dynamic capabilities result in a vastly more efficient workflow because everything is linked and working together.

Connected construction is not a one-way street. TBC's connections are bidirectional, importing data from Trimble's connected products. "TBC supports importing Work Order data from WorksManager, surfaces collected in WorksOS or markups captured in Trimble Connect." Says Patrick. "TBC has strong connections with Trimble's other products that make sharing data smooth and effortless, and those bonds continue to get stronger, smarter and faster."

⊕ Trimble.

SEE IT IN 3D

Seasoned construction planners and field workers know the value that 3D modeling adds to any process. "2D plans don't show 3D mistakes," laughs Patrick. But the accuracy and depth of TBC's 3D modeling capabilities take things to the next level. You can see mistakes from the beginning because you are building the site digitally in 3D. "If there's going to be an error or a clash, you can find that ahead of time, hopefully resolving the issue before equipment and crews are waiting," explains Patrick. "This saves time and money because now you don't have equipment and crews sitting or detoured while you're trying to come up with a resolution."
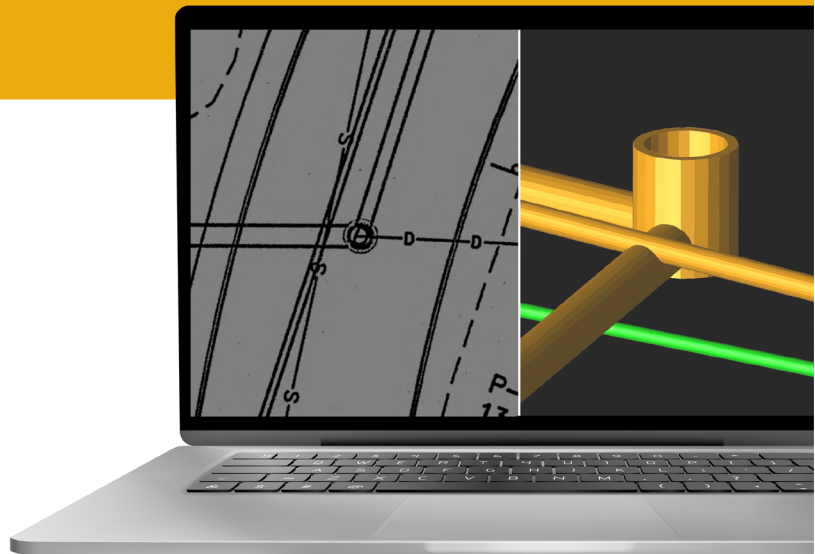
> "
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>
> **Patrick L'Heureux** | Severino Trucking

There are hundreds of variables that 3D plans can help resolve before boots hit the ground. Slopes can exceed their expected boundaries, encroach upon property lines or setbacks. Wetlands are notoriously unpredictable, and pipelines are always tricky because of the inherent complications of subsurface planning. But TBC's fully textured 3D models mitigate much of the uncertainty around these common obstacles. When Patrick supplies his models to the field, the response is typically something like,

"...okay, yes, this is exactly what we need." ▶ ▶ ▶ ▶

Seeing data in 3D is not only useful for construction but also after a project has been completed for as-builts and asset management. Owners and engineers use this data to verify construction against the plans, or document changes that may have occurred. "Traditionally this information was provided as either a points file or redline drawings. With new technology we can supply items such as point clouds, drone photos and even 3D utilities, providing rich detail on the construction process. " says Patrick. "We still supply a point file but we go through and relayer points and add extra linework to make it more logical for other parties that may use this data, trying to create a vivid image of how things came together ." All these methods are supported within TBC and are continuously expanding with Trimble's software and hardware advancements for the future.

◉ Trimble.   **constructionsoftware.trimble.com**

AN OCCUPATIONAL HAZARD:
WORKING WITH OSHA

Anyone who has worked in construction for even a little while has an OSHA story to share. An arm of the federal government, the Occupational Safety and Health Administration (OSHA) can be found anywhere there is hazardous work being done. Patrick at Severino is an old hand with OSHA from the planning and scheduling sides of things. "With excavation, we need to make sure that we're in OSHA standard. Anything over six feet, you need to either have trench protection or slopes that meet the proper OSHA criteria. This is to prevent fatalities if there was an unexpected cave in. If you're by a wall, you can't be higher than six feet without having either a tie-off or a rail. It's very much about workplace safety."

Over the years, Patrick learned to navigate OSHA's web of requirements in a pre-construction software environment. Today, he combines that hard-earned savvy with Trimble Business Center's powerful tools to make OSHA compliance a part of everything Severino does. TBC, Patrick explains, "helps you plan so you can be safe and have the proper equipment on site, whether it's trenching utilities, or even making sure that you have the proper excavation equipment for the task at hand."
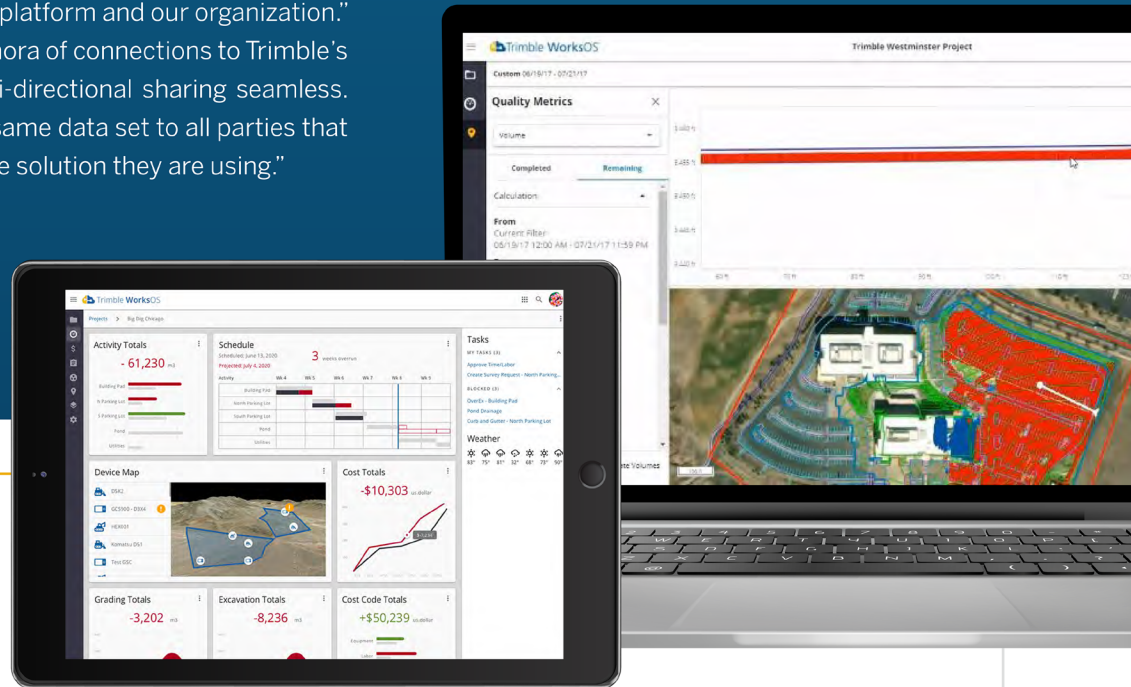
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> **TRIMBLE BUSINESS CENTER HELPS YOU PLAN SO YOU CAN BE SAFE AND HAVE THE PROPER EQUIPMENT ON SITE.**
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Patrick L'Heureux | Severino Trucking

The Utilities module in TBC is of particular value when it comes to OSHA preparedness. "Modeling utilities and different stages of construction, gives us a better insight into when we should conduct this work. By installing utilities when installation depths are minimal, we not only increase production but we also increase our safety" says Patrick. "A 15-foot-deep run is a lot different than a 5-foot-deep run. You need to see how these runs will influence different situations, especially for OSHA regulations."

PLAYS WELL
WITH OTHER TRIMBLE APPLICATIONS

Among the unexpected benefits of TBC for Patrick is the way the entire suite of Trimble Construction Software products works seamlessly together. "TBC has center in its title. In most cases it is where the project starts and then this data is shared throughout Trimble's platform and our organization." says Patrick "TBC has a plethora of connections to Trimble's other products that make bi-directional sharing seamless. This allows me to share the same data set to all parties that need no matter which Trimble solution they are using."

> ❝
> ## PROJECT ENGINEERS AND PROJECT MANAGERS CAN SEE THE PROGRESS OF THE JOB IN A VERY CLEAN AND INTUITIVE INTERFACE.
> ❞
>
> **Patrick L'Heureux** | *Severino Trucking*

Central to the idea of connected construction is the ability to easily make changes, then communicate those changes to all involved in a way that fits into their individual workflows. Applications like Trimble WorksOS, Tilos, Pulse and WorksManager represent leaps and bounds forward from the old way of doing things. In the past, "you'd have to send it via email, making sure everyone knows the specific file structure to load to the machines. In some cases, you would have to drive out to a site to load files." laments Patrick. "It was more time consuming. WorksManager has been a fantastic tool. Not only can you send out files to your devices, but you can also verify that devices are using the correct files."

Recent updates to WorksOS have been very important to Severino Trucking. The entire team benefits from "being able to track your equipment and bring in various sets of information that project engineers and project managers can see the progress of the job in a very clean and intuitive interface."

⊳ Trimble.

Perhaps the biggest improvement Patrick sees from his reliance on Trimble Construction Software is a reduction in so-called rework—doing things over and over again, and perhaps again, to get them right. "Not only are we saving time and money, but we are delivering a better product by seeing all those issues, cost savings and nuances in advance instead of finding them in the moment. Then you scramble to make things work. Tools such as TBC have helped us become more proactive by highlighting reactive situations."

> ## TOOLS SUCH AS TBC HAVE HELPED US BECOME MORE PROACTIVE BY HIGHLIGHTING REACTIVE SITUATIONS.

Patrick L'Heureux | Severino Trucking

When we asked Patrick to sum up his feelings about Trimble Business Center, he responds that it is a phenomenal tool and a great asset to his workflow. "TBC allows me to compose complex, accurate data sets on time." he admits. "I have assurance on qaulity data being sent out to our crews. I know my crews can have reliance knowing that that information is going to be composed in a meaningful manner that's constructible and useful."

Want to discover how Trimble Construction Software can optimize your processes and improve outcomes?

LEARN MORE

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