MiTek®

National Lumber Implements the MiTek® SAPPHIRE™ Platform to Manage Estimates and Component Manufacturing

From Multi-Family Structures Delivered Turn-Key, to Structural Components and Building Materials for Single-Family Homes, National is a One-Stop-Shop for Estimates of Unrivaled Accuracy.

EXECUTIVE SUMMARY

- With nine locations and 657 employees (including 55 SAPPHIRE designers/estimators), National Lumber sells 9,000 SKUs and turn-key construction services, generating $300 million in annual revenue.

- National Lumber has long used the MiTek SAPPHIRE *Suite* for structural design, wood frame optimization, and component design and manufacturing. National also runs automated saws driven by the SAPPHIRE BIM models.

- Using SAPPHIRE, National Lumber can seamlessly compute accurate estimates based on BOMs of buildings in whatever form they are delivered, and create estimates that are highly accurate.

- It's the shared SAPPHIRE BIM model that is central to the success of this effort. "With SAPPHIRE, we have a unified solution for rapid, accurate quotes, and since we are working from project-specific models, and BOMs pulled from those models, we have consistent and accurate modeling across every aspect of our organization," National's James Anderson explained.

- SAPPHIRE goes *far beyond* the "drawn lines" and "rough counts" that are generated from other estimators, like Planswift, Estima, ProEst, and PrebuiltML. That's because SAPPHIRE draws material quantities from the *actual framing model*, not just the "rough shape" or the geometric image of the structure.

For his leadership and vision, Manny Pina, President of National Lumber, was recently named LBM Journal's Entrepreneur of the Year.

"This is a vision I'd had for the last 46 years!" said Manny Pina, President of National Lumber. "We used to do this *caveman* style, figuring estimates with paper and pencil. But now, after really dedicating ourselves to the MiTek SAPPHIRE platform, we are able to generate extremely precise estimates, working from 2D PDF backgrounds we get from builders or that we create ourselves with SAPPHIRE...I can finally see architectural plans coming in — PDFs, doesn't matter — and our guys use them to design the components, spec the EWP, and calculate nearly everything else that's going into the structure: siding, shingles, drywall, insulation, pretty much everything, except the concrete, plumbing, and electrical."

SAPPHIRE IS THE NATIONAL SOLUTION

One core reason for National Lumber's success is that it hires someone full time to implement SAPPHIRE 3D modeling and design software to optimize its estimating, specifically of the project-specific CAD, DWF or DXF files supplied by the builder, designer, architect or developer. National has long used the SAPPHIRE *Suite* for structural design, wood frame optimization, and component design/manufacturing. Plus, National has also been running automated saws driven by the SAPPHIRE BIM, which are driven by SAPPHIRE design files, a process that yields components and framing kits that are accurate to 1/16th inch. But National Lumber wanted to use the full power of SAPPHIRE to make National's whole-structure estimates more precise, beyond the accuracy they

attain for structural components and iJoists, to the point of quickly and accurately creating a complete *Bill of Material* (BOM) for each job. National Lumber has been very successful in setting up SAPPHIRE to generate project-specific models for builders and developers, which then drive estimates for the jobs and deliver the quotes.

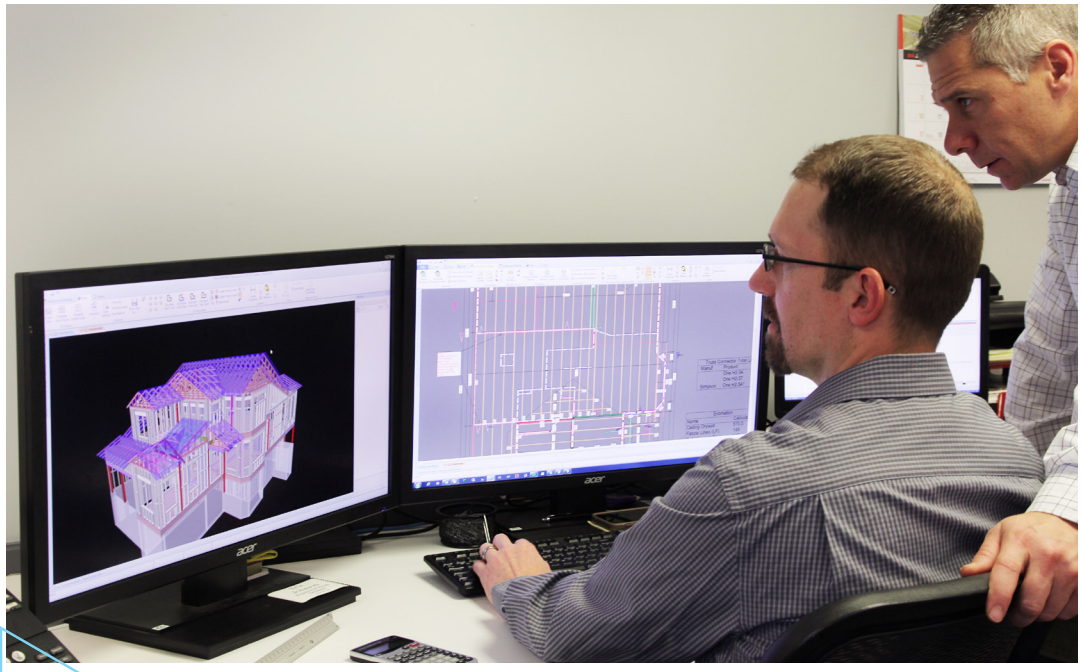
THE SAPPHIRE PLATFORM: WHAT IT DOES

Designed specifically to meet the needs of component manufacturers and lumber and building material dealers, the various modules of MiTek's SAPPHIRE serve as a single-source software solution that combines complete materials estimating and structural frame design. Simultaneously, for the component manufacturer, SAPPHIRE serves as an advanced structural component design software, driving precision saws in the make-up yard for component manufacturing or framing kits for stick-built structures. SAPPHIRE is so powerful, it can reach across the dealer or component manufacturers' operations to incorporate the product SKUs to create a complete quote. SAPPHIRE does this while performing analysis and design on a wide range of structural products including engineered wood products (EWP), dimensional lumber, and even metal connectors and hangers. This then offers unparalleled collaboration among builder material dealers, component manufacturers, builders, developers, architects, and trades by sharing the common Building Information Model (BIM), all of which can be viewed on MiTek's free SAPPHIRE *Viewer* software.

"It's the shared model that is the key," National's James Anderson explained. "With SAPPHIRE, we have a unified solution for rapid, accurate quotes, and since we are working from project-specific models, and BOMs pulled from those models, we have consistent and accurate modeling across every aspect of our organization."

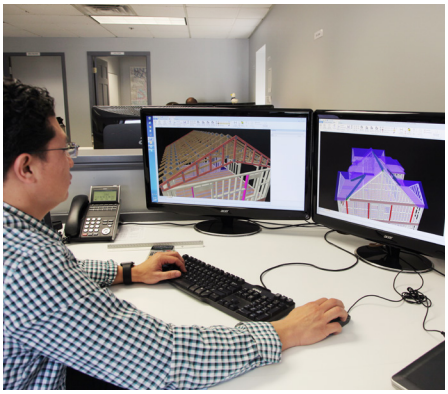
"Since SAPPHIRE is based on the geometry of a structural model, the software can also generate SKU-based materials counts for non-structural materials, such as drywall, house wrap and even millwork," added MiTek's Steven McFall, a SAPPHIRE expert. "National Lumber has 9,000 SKUs, and they are all available for inclusion into a project estimate when needed. What's more, SAPPHIRE's flexible formula-builder, coupled with the power to define accumulation rules, results in accurate material counts to match how materials are actually supplied. Verifiable, traceable BOMs can be generated with exacting precision, all visually tracked within the 3D structural model. Customers can click on any item, and SAPPHIRE highlights the element in the 3D BIM to clearly show where certain items are to be installed. Users can zoom in to see the details."

Using the MiTek SAPPHIRE platform, National Lumber is able to generate extremely precise estimates, working from 2D PDFs it gets from builders or BIM models it creates in SAPPHIRE.



SPEED AND ACCURACY, DELIVERS. LABOR MANAGED TOO.

"Speed in turning around estimates is a key deliverable for SAPPHIRE users," said Brian McCormick, MiTek's director of residential supply chain. "Speed is important, but accuracy is where reputations are made or lost. Quotes have to be documented to assure builders, and SAPPHIRE goes a long way toward building confidence with customers. SAPPHIRE goes *far beyond* the "drawn lines" and "rough counts" that are generated from other estimators, like Planswift, Estima, ProEst, and PrebuiltML. That's because SAPPHIRE draws material quantities from the *actual framing model*, not just the "rough shape" or the geometric image of the structure. SAPPHIRE breaks the habit of sending material overages to the site 'just in case,' only to have the lumber yard end up in the expensive game of taking returns and issuing credits."



Designed specifically to meet the needs of component manufacturers and lumber and building material dealers, MiTek's SAPPHIRE serves as a single-source software solution that combines complete materials estimating and structural frame design.

WHO OWNS THE ESTIMATE? WHERE DOES PRICING FIT IN?

"Many general contractors don't have estimators anymore," said Mr. Pina. "That's a service they are now depending on the lumber yard and the component manufacturers to provide. That's why SAPPHIRE means so much to us. For every job, each salesman fills out an electronic job data sheet, with trusses, iJoist, millwork, whatever is required. Then, with SAPPHIRE, we are able to quote the job *before* we do the design work. (We have internal processes to ensure our estimates are not shopped.) When the quote is accepted, we fully engage the customer on the design and engineering, where SAPPHIRE is invaluable. As for volume, we process around 300 to 330 plans per month, about 200 of which are multi-family."

"All pricing from the material estimates that come from SAPPHIRE are drawn directly from our ERP, where we keep a close eye on margins," explained Mr. Anderson." We have a single ERP for all of National's products across all locations, so customers can't inadvertently engage our various locations in bidding each other down. It's all one big integrated system."

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>
> – James Anderson, National Lumber

National Lumber runs automated saws guided by the SAPPHIRE BIM models, which are in turn driven by SAPPHIRE design files. As a result, National Lumber's components and framing kits are accurate to 1/16th inch.

SAPPHIRE: A SINGLE PLATFORM

SAPPHIRE offers that rare capability to offer a *single platform* for collaborating with the often far-flung (and otherwise uncoordinated) activities of the component manufacturer, lumber dealer, and their customers. Since National Lumber uses SAPPHIRE to create project-specific BIM model, it offers accurate current pricing and product availability that can be drawn directly out of the appropriate ERP system, and that's a capability otherwise unavailable from another source.

To learn more about SAPPHIRE Supply, contact your local MiTek Sales Manager.