NEWFORMA

Integrating Newforma And ProjectWise For Simpler Project Delivery

Engineers rely on Bentley's software for key project information, but not all project information. Here's how to reduce risk and improve collaboration with non-ProjectWise information in a way that dovetails nicely with ProjectWise.

EXECUTIVE SUMMARY

Bentley® ProjectWise® software is the infrastructure industry's standard for engineering content management. It manages access to work-in-progress (WIP) project data; ensures stakeholders enjoy quick, local access to the current, authoritative versions of files; and prevents teams from overwriting each other's work.

ProjectWise came of age in the 1990s, when CAD data represented the vast majority of an engineering project's digital information. But quickly, other forms of project information switched to digital form.

At first, engineering companies tried to manage new types of digital information in ProjectWise, alongside their CAD files. But with projects' digital footprints doubling every 18 months, ProjectWise users and administrators soon concluded that all this additional data prevented ProjectWise from doing what it does best: ensuring that work-inprogress CAD and BIM files are being sensibly managed!

Rather than put all that data into ProjectWise, which bloats the database and cripples productivity, engineering companies are increasingly using ProjectWise in concert with another application for collaboration and project information management, Newforma® Project Center. Instead of moving project files to a database, Newforma software indexes data and remembers where it's located, enabling more fluid management of information.

The ProjectWise–Newforma integration eliminates jumping back and forth between applications, because ProjectWise users can perform their most common tasks within the context of the Newforma user interface. The ProjectWise–Newforma integration enables engineers to move fluidly and seamlessly through their workflows in one window, all the time capitalizing on each application's strengths.

This white paper presents 11 types of project information most used by engineers, and describes ways the ProjectWise–Newforma integration streamlines their management.

HOW DO ENGINEERS REALLY DELIVER PROJECTS?

Bentley ProjectWise engineering content management software ensures that all project stakeholders enjoy quick, local access to the current, authoritative versions of project files. More importantly, the check-in/check-out paradigm administered by ProjectWise prevents teams from overwriting each other's work.

Being able to work from different offices is vital to a firm's productivity. Distributed organizations can harness their collective engineering, CAD and BIM expertise in remote locations to meet increasingly demanding, fast-tracked design and construction schedules. In that respect, ProjectWise is vital; it ensures engineers in different offices are not stepping on one another's toes.

But ProjectWise is not the only application engineers employ to deliver projects.

It is estimated that large engineering firms manage as much as 30 percent of their files using document management systems, ProjectWise being the leader among them. That metric means 70 percent of the firm's project information resides outside the document management system, in locations such as file and email servers. On the very largest projects, there can be terabytes of project-related data distributed across these other repositories!

PROJECTWISE FACES A DILEMMA.

For example, there might be hundreds of thousands of site photos. Additionally, there are emails, specifications, contracts, and transmittal and action item logs, meeting minutes, design review markups, quality control documentation and more. Arguably, these items do not belong in the managed engineering content environment of ProjectWise; they're filed elsewhere.

As a result, project information resides in multiple locations, each to be integrated into larger project delivery processes, whether sharing files, responding to request for information, or processing submittals.

Ultimately, ProjectWise users face a dilemma. You can use it to serve as the central repository of all project information, taxing the database and undermining performance. Or, use ProjectWise as another project information silo which will require integration into larger project delivery processes. This applies to file sharing, responding to requests for information or processing submittals.

BRIDGING SILOS IMPROVES PROJECT DELIVERY.

One way to overcome the challenges of siloed information and disconnected workflows is to implement a project information management system that embraces all information sources, including ProjectWise. Such an environment eliminates gaps between different information sources and enables users to use consistent workflows across projects. Such a system enables casual users of ProjectWise to check files out of and into the system from the same software interface they use to access files on the local area network or a cloud server. ProjectWise becomes just another information source, albeit one that maintains its key, risk-reducing functions, within the larger context of the Newforma environment.
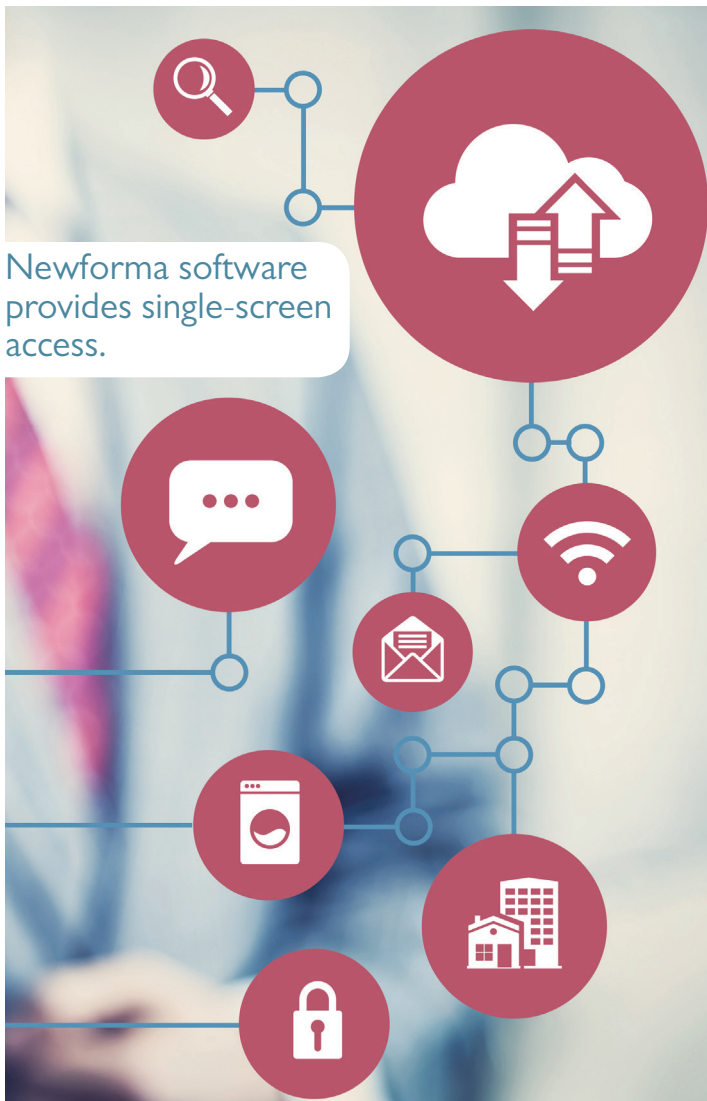

Being able to work from different offices is vital to a firm's productivity.

COMBINE SECURITY WITH SPEED.

On larger projects, there are typically thousands of formal RFIs and submittal packages to be tracked, reviewed and responded to. As with design deliverables, clients are expecting ever-shorter turnaround times on the myriad of construction-phase demands made of engineers. Even if the contract calls for 10-day turnarounds on submittal packages, engineers tell Newforma they're now being asked to turn around submittals in just two days! Additionally, requests for same-day approvals are not unusual. More challenging still, there are more and more instances where people are asking for RFI responses in mere hours!

To the extent that RFI and submittal management incorporates ProjectWise-housed files, the Newforma-ProjectWise integration enables easy correlation of files to construction administration records.

Newforma software provides single-screen access.

AVOID UNDERMINING PROJECTWISE'S STRENGTHS.

The information buried in project documents can be critical for answering questions and avoiding problems. But locating the right document – which may be a design drawing, commentary in an email, a PDF, or any other kind of file – is too often arduous and time-consuming. Employees need to conduct multiple keyword searches in different file management systems in the hopes of finding the exact document they need. Given the high volumes of data in today's complex projects, such searches can consume hours, even days.

Because ProjectWise does a very good job policing file access, many employees resist using it; they want to avoid the speed bumps it adds to workflows. They may find the requirements associated with **checking in and checking out** documents too arduous, and adopt habits that circumvent these procedures, such as filing documents locally instead of checking them back into the document management system. Such shortcuts undermine the strengths of the system.

How can a company address such challenges to increase correct usage of ProjectWise?

ACCESS PROJECT INFORMATION VIA A SINGLE PANE.

To solve the problem of disparate data sources, Newforma software provides single-screen access to all project information, regardless of its file format or where it exists on the network or document management system.

To accomplish this task, the Newforma application provides:

- Access to files held in ProjectWise

- Strict mapping and enforcement of permissions, whether those of the document management system or of the corporate network

- Integration with security and document check-in/check-out statuses

- Ease of use such that users can pull files from ProjectWise without special training

- A document viewer that displays the most commonly used files, so users won't need to license and open separate authoring applications

- Seamless transitions from the document management files to common workflows such as those for file transfers, transmittals, submittals, RFIs, punch lists, and more

ENGINEERS ARE SIMPLIFYING WORKFLOWS IN THESE 11 WAYS:

Newforma software makes ProjectWise more accessible, and by making ProjectWise more accessible, adoption rises, risk declines, and the system fulfills more of its promise. And for all the information not filed in ProjectWise, Newforma software provides means to integrate workflows.

Here are some examples:

1. Project email

Emails are becoming an increasing source of project information; larger projects can easily exceed 100,000 email messages. Burdening ProjectWise with this storage load impacts its performance and usability. But for those companies that want to file email in ProjectWise, the Newforma Add-in for Outlook allows engineers to drag and drop emails into ProjectWise in a single motion. (Otherwise, firms file emails with other project documents on company servers or cloud storage.) In contrast to ProjectWise Explorer, which does not have a built-in email browser nor an easy ability to preview emails, Newforma software makes emails easily retrievable by multiple means, including the Newforma Project Email mobile app.

2. Searches

ProjectWise is prone to housing more data than can be indexed by the Windows technology ProjectWise employs. Newforma search technology indexes volumes of data on par with today's largest projects. It's like Google for a project's information, but with the addition of powerful sorting and filtering to quickly narrow search results.

3. File Transfers

ProjectWise enables secure collaboration with subconsultants, but sometimes factors prevent them from installing or accessing the ProjectWise desktop client. When this is the case, Newforma software provides web enabled file sharing that's simple, transparent and secure. Newforma users can easily invite and administer external project collaborators, using company configurable permission sets. It logs who has downloaded or uploaded what, when, to supplement what you're not able to track with the ProjectWise Audit Trail.

4. Document control

ProjectWise has been essential to collaborating on work-in-progress design and engineering CAD or BIM documents. It gets everyone to use the same CAD standard and naming conventions while drawings and specifications are being

edited. It also prevents work from being overwritten, even when the same version of the same file exists in multiple offices. Newforma Document Control takes over when it's time to package milestone versions of drawings and specs and issue them to the broader team. Newforma tracks which companies have been issued which versions of drawings, who's downloaded them (or not!), and creates a living transmittal log linked to record copies of each drawing. It also synchronizes the latest drawings to the Newforma Plans app, providing users remote access to the latest files via iPads.

5. Record copies

One best practice in submittals management is to copy files into a folder to record the state of the files at that particular time. But copying ProjectWise-stored files can unwittingly cause reference file attachments to point to the wrong location. To remove such risks, Newforma software zips the files and their x-refs into a designated folder within ProjectWise. No broken links!

6. Versioning

ProjectWise has powerful versioning capabilities, but they're underutilized. Newforma Project Center enhances this ProjectWise feature by making it easy to create a version of a document, manage all its versions, or even revert back to a previous version. The software protects users from the risks of creating copies of files and renaming them as a "version," which retains links to the previous file.

7. Viewing

The Newforma Viewer displays PDFs, image files, and 2D CAD files (such as those from AutoCAD and MicroStation) without the user having the native authoring software. It's a single tool that opens each of these file types in a view-only mode. Among other advantages, this function prevents unintentionally checking out the file while viewing.

8. Markups

Even if most of the drawings you receive are in DGN format, engineers are also asked to mark up PDFs. Using ProjectWise in the context of Newforma Project Center makes it easy to open and mark up PDFs (and all the other

file types engineers use, including DWF and DWG) in the Newforma Viewer. (Newforma software also includes functions to manage markups and compare two versions of a file.)

9. Images

Engineering projects generate copious project photos. Like project-related emails, project site photos can exceed 100,000 files, with camera-generated file names that are indistinguishable. To make management easy, Newforma software includes functions to index and quickly display the project's site photos, no matter where they're filed on your network – whether in ProjectWise or elsewhere. You can then quickly search, sort, and filter by any of the available photo properties, such as Date Taken, Location, Camera type, or even Folder Name. And if you use the Newforma Capture smartphone app to take your site photos, they're automatically synced to the correct project folder and indexed in the Field Notes activity center, easily discoverable and ready to be processed as part of a punch list, inspection or daily report.

10. Project teams

It's beyond the scope of ProjectWise to track who is working on a project; users often develop spreadsheets to manage a project team list. By contrast, the Newforma Project Team activity center is a resource of everyone working on a project. It's a means to directly communicate with anyone working on the project, or to everyone all at once. Using the Newforma Project Teams mobile app, engineers can communicate (phone, text, and email) with project team members from smartphones and tablets. Additionally, using the Newforma Contact Directory, companies can manage their project team contacts globally, making it easy to update phone, address or other details in one spot.

11. Action items

It typically falls upon project managers to manage action items in systems other than ProjectWise, even when those action items revolve around the work-in-progress design and engineering files that live in ProjectWise. Newforma closes the gaps by providing action item management and reporting functionality that is intrinsically integrated with email workflows. Newforma Action Items are a godsend to project managers, who use them both to manage anticipated milestone-related tasks and QC assignments as well as ad hoc issues that typically come at them through email. Action Items set automatic due date reminders and link to related documents; everything needed to complete the task is at an engineer's fingertips. And with the Newforma Tasks mobile app, they can be created, assigned, tracked and closed on the go!

BUILT WITH
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Melbourne's Medibank Place. HASSELL used Newforma® Project Center software to collaborate and manage project information.
Photo © Earl Carter.

CONCLUSION

ProjectWise excels at managing work-in-progress (mostly CAD and BIM) engineering data. And this task is vital, for these files are at your projects' core! When those files are in flux during design, ProjectWise ensures they're managed properly.

But the rest of your information – which on modern projects can amount to steadily increasing terabytes of data – cannot practically be filed in ProjectWise. As important as it is, that additional data would cripple productivity by overloading the database. You need other ways to manage it.

Newforma software, which scales to handle multi-terabyte projects, provides a comprehensive-yet-practical way to manage non-ProjectWise data at the same time as it facilitates access to, and use of, ProjectWise-filed work in progress. The 11 points above illustrate the most popular integrations.

Newforma software enables ProjectWise users to take fuller advantage of the industry-leading document management application at the same time as it reduces risk outside the ProjectWise environment.

By combining the complementary strengths of ProjectWise and Newforma Project Center, engineering companies are reducing risk at the same time as they streamline project delivery. That's a win for all concerned.

THE NEWFORMA ADVANTAGE

- Newforma Project Center aggregates and provides single-pane access to all your information silos.

- Newforma software is non-invasive; it leaves all data where it is on your network and indexes it for ready access.

- Newforma software works with existing workflows and permissions across the enterprise of information.

- Rapid implementation complements ProjectWise customizations.

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