AUGIWORLD

The Official Publication of the AUGI Design Community

July 2021

3rd Party Applications

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FEATURES

COLUMNS

From the President

HELLO AUGI MEMBERS!

hope you all are having a good summer and in addition to work you are taking some time off for family, friends, and fun.

"Don't get so busy making a living that you forget to make a life" (Dolly Parton).

This month you'll find articles on the use of 3rd party applications, like "3ds Max with Unreal/TwinMotion" and "3rd Party Add-Ons for Revit". Also, look for an article on ESRI (GIS) and one on the CIM Project Suite, just to name a few.

For Autodesk software you can go to https://apps.autodesk.com to find whatever you might need. The applications are all categorized based on the specific Autodesk software as well as the need the app addresses. You'll find apps that are free that provide small solutions and apps that have a price tag that provide more in-depth solutions.

I'm amazed at the array of apps that have been developed for mobile devices as well. Check the Apple Store, Google Play Store, or the Microsoft Store for apps like AutoCAD (mobile), Onshape 3D CAD, SketchUp Viewer, Draft Paper, CAD Pockets, DWG FastView, BIMx, and dozens more.

Having a few key applications to help get the job done will make your work life easier and help you focus on other things when you're not at work!

I'm going to head out to my deck and relax in the shade with a good book and an ice-cold Diet Dr Pepper! Carry on and have a great summer!

KaDe

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AEC Partnerships, Esri

SUMMARY

Population growth, mass urbanization, and climate change impacts are putting a strain on the world's infrastructure. The magnitude of buildings and infrastructure development needed to meet world demand by 2050 is massive. Over the next 30 years, the planet will require constructing an estimated 13,000 buildings per day and more than 150,000 miles of urban roads, and 500,000 miles of rural roads per year.

Architecture, engineering, and construction (AEC) professionals are up to that task and excited about the challenge and opportunity ahead. For business owners, this represents opportunity and a healthy project pipeline. For passionate professionals, this provides an opportunity to use expertise, ingenuity, and fun tools to make the world a better place through design and construction. For technology enthusiasts, this represents an opportunity to finally move owners off outdated legacy technologies and onto more modern, even futuristic, technologies and capabilities to support the construction and operations of complex buildings, campuses, and cities.

One area AEC firms are exploring to help capture this opportunity, and win the most work, is the integration and BIM (Building Information Modeling) & GIS (Geographics Information Systems) workflows and data. The integration of BIM & GIS technology offers better designs, more efficient project delivery, and digital deliverables built for futuristic operations and management.

In 2017, Esri announced a strategic alliance with Autodesk to develop and offer more tightly integrated BIM and GIS workflows to offer more efficient workflows and capabilities from plan to operate, hoping it helps the world meet our infrastructure and development needs.
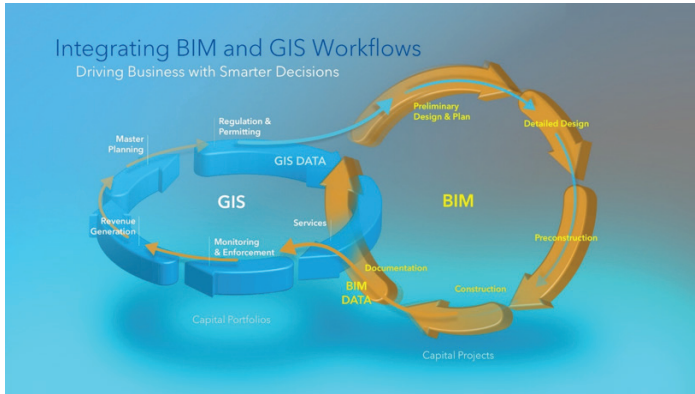
ROLE OF TECHNOLOGY

People, Process, Technology. The three legs create the sturdy footing for any project team to achieve operational efficiency and deliver a project on time, on-spec, and on budget. Fail to address one leg, and the stool gets out of balance, causing the project to go sideways. There is no denying the importance of each, but we will focus on the technology component of BIM & GIS integration for this article.

INTEGRATION BENEFITS

BIM and GIS not only help design and construction teams work more efficiently, but they also enable the data created during those processes to be used for a wide range of operations and maintenance activities, such as facilities management, space planning, and security.

There are numerous benefits from integrating BIM and GIS, including the following:

- *Better Design*. Project teams can gain access to authoritative GIS datasets for a better, complete understanding of the built world, the natural environment, the inhabitants, and the connected systems & networks associated with a project area. Access to better information results in more informed decision making yielding better design outcomes.

- *Save Time & Money*. Seamless exchange and sharing of GIS and BIM datasets across systems minimize data loss, reduce

inefficiencies, and increase design reviews and decision-making speed.

- *Better Operations*. Data captured and created during the BIM process can be extremely valuable to the traditional downstream use cases of a GIS. Integrated BIM & GIS technologies make it more feasible for an owner to get the long-term value of BIM data during the operations phase of an asset.

- *Increase Return on Investment*. Owners and AEC firms have made considerable investments in their BIM and GIS technologies and data. Removing the silos between these domains creates new capabilities with existing investment, creating an opportunity for more value creation and higher ROI on existing technology.

ESRI & AUTODESK TODAY

ArcGIS & Revit

Traditional GIS was built on two dimensions, an x-value and y-value, which can be limiting in some applications of GIS, especially as it relates to GIS for supporting the design & building of infrastructure and facilities. Incorporating 3D datasets into GIS allows you to create the as-built environment, conceptualize your vision, analyze designs in context, visualize the project area and its constraints, and share out the ideas and concepts with the entire project team across all phases.

We leverage the Building Scene Layer in ArcGIS for the GIS user who wants to incorporate BIM files from Revit into their GIS. The Building Scene Layer allows you to work with Revit model data in ArcGIS Pro and share these incredible Building Information Models across the web in ArcGIS Online. Part of a family of five scene layer types, the Building Scene Layer optimizes the display of BIMs and the mechanical, architectural, piping, electrical, and structural disciplines all within ArcGIS.

ArcGIS & Civil 3D

GIS is an essential part of any civil project, and Civil 3D users have been working with ArcGIS data for many years. However, historically the workflows required were disconnected and manual in process, introducing errors, data loss, slow turnarounds, and general frustration between teams working in their silos. Some innovative firms developed complex connections and workflows built on legacy technology and frameworks, partly solving the problem but making it costly to maintain and difficult to modernize.

In the 2020.1 release of Civil 3D, a new feature called the Autodesk Connector for ArcGIS was released. The Autodesk Connector for ArcGIS allows a Civil 3D user to connect to an ArcGIS account and seamlessly pull public and their private GIS data into their Civil 3D software. A Civil 3D user can access authoritative GIS data associated with a project area and bring those points, polygons, feature lines, gravity pipes, parcels, structures, and attribute data into their Civil 3D drawing and include them during design and construction. When you bring each layer in, you can specify what type of Civil 3D object to create.

Furthermore, a Civil 3D user with the appropriate ArcGIS user type can edit the GIS data and save it back to the GIS with Civil 3D. The Connector for ArcGIS maintains a live link to ArcGIS, helping maintain consistency between the design and the GIS. This connection opens the door to more efficient workflows, new capabilities around the design process, and reduced errors associated with sharing data between GIS and CAD/BIM.
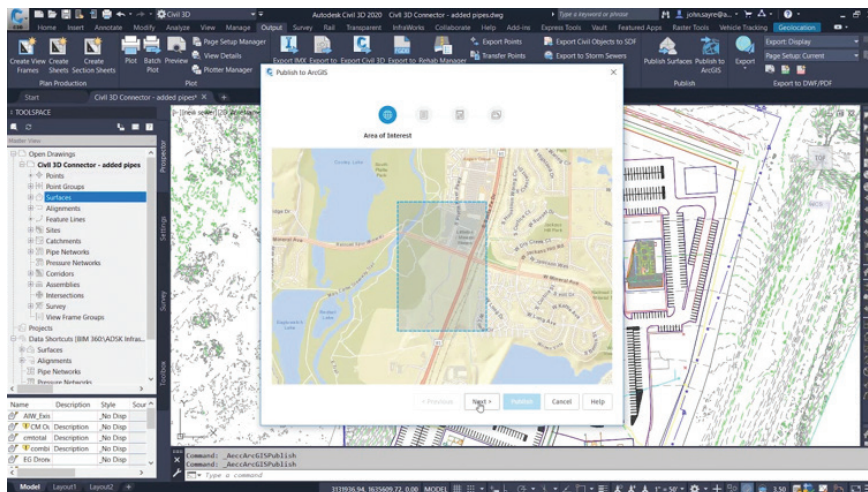
ArcGIS & InfraWorks

The integration between ArcGIS & Infraworks also works by using the Autodesk Connector for ArcGIS, which became available in the 2019.1 version of InfraWorks. ArcGIS content can be added to an InfraWorks model. You can select feature layers, configure them to Infraworks objects, and add layers to a design project. Once the data is imported into InfraWorks, layers can be reconfigured and re-stylized based on the ArcGIS attributes.

The connection is also live and refreshable, which means you can use Esri's field apps like ArcGIS Field Maps to collect information in the field and push
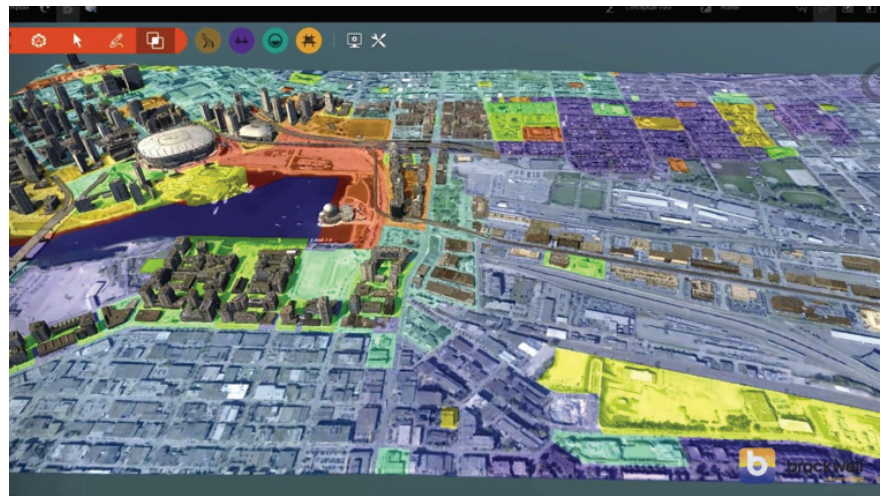
that data to the InfraWorks model. Once ArcGIS is updated, the Infraworks model refreshes and the new field data is added to the model.

ArcGIS & the Autodesk Construction Cloud

The new Autodesk Construction Cloud launched in 2021 is Autodesk's new platform for connected data and teams across the AECO Project Lifecycle and will include Autodesk Docs, BIM Collaborate, BIM Collaborate Pro, and more. To fulfill our promise of more tightly integrated workflows, Esri has integrations today between our core products and the Autodesk Construction cloud, including:

ArcGIS Pro | An integration between Esri's ArcGIS Pro and Autodesk's Construction Cloud gives users the ability to seamlessly interact with engineering files stored in the Autodesk Construction Cloud. From within ArcGIS Pro, a user can create a live link to their Autodesk Construction Cloud projects.

Users can access shared design files, including Civil 3D files, Revit files, and other information stored in the Autodesk Construction Cloud. Traditionally, this type of data access would require a GIS professional to translate the data from CAD to GIS. This manual translation is no longer needed with this new integration.

Site San for ArcGIS | Esri's end-to-end drone solution, Site Scan for ArcGIS, is integrated with the Autodesk Construction cloud, allowing users to push their drone information products into the Autodesk Construction Cloud. Datasets supported include orthomosaics, surface models and elevation models, point clouds, and meshes. Site Scan for ArcGIS is also fully integrated with ArcGIS Online. This makes is very simple and easy for a drone team to plan, fly, capture, and create drone information products and then seamlessly push the datasets towards designers and builders using the Autodesk Construction Cloud and towards the GIS professionals using ArcGIS Online or Enterprise.

ArcGIS Online and ArcGIS Enterprise | Coming later in 2021, Esri will be releasing a new user-type extension called ArcGIS GeoBIM. This unique user type extension will enable teams to integrate and visualize project data in a single, cloud-to-cloud solution to coordinate decisions with stakeholders. This user-type extension will support project processes like documentation review, issue review, design coordination, and performance across all projects. ArcGIS GeoBIM will connect ArcGIS Online or ArcGIS Enterprise with the Autodesk Construction Cloud.
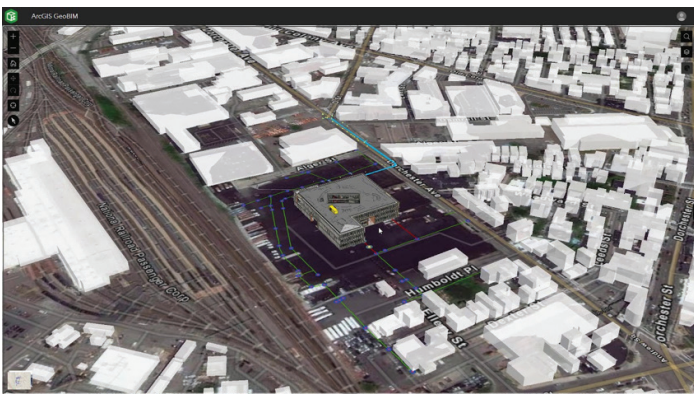
LET'S GET STARTED

By now, you understand that Esri & Autodesk have integrated technologies offering project-ready BIM+GIS workflows and capabilities today.

The demand is clear, the drivers are understood, and the benefits are apparent. The next step is mapping those capabilities out to solve real-world problems for your facility, your city, your project, or your client.

If you have not already begun to integrate your BIM+GIS technologies, you should start the process today. Esri is passionate about this work and ready to help you map out available solutions to your current needs. I cannot speak for the people at Autodesk but can say they have been great to work with and have been just as excited to deliver on this promise of seamless data exchange between BIM & GIS technologies. Many informative and valuable resources are available online to help your exploration and adoption of integrated BIM and GIS workflows and technologies. There is also a robust network of Esri & Autodesk partners ready to help you develop a GIS & BIM adoption roadmap.

Matt Torma works on Esri's AEC team with an emphasis on promoting new workflows and tools. His primary focus is the value created by:

1. *ArcGIS Pro & ArcGIS Online for AEC Projects.*
2. *Esri's Field Operations Apps for Connecting Field & Office.*
3. *The Esri + Autodesk Integrations.*
4. *GIS + BIM Integration Workflows.*

Matt loves the world of designing and building. He's been a laborer, estimator, CAD Technician, Project Manager, drone pilot, and most recently a sales person for AEC technology. Matt loves to learn new things and is very passionate about supporting Esri's customers as they design and build the future on a canvas dealing with challenges like urbanization, population growth, rising sea levels, and failing infrastructure.

Twinmotion and Unreal Engine 5

Epic Games released the beta for Unreal Engine 5 and improvements for Twinmotion, offering more power, flexibility, and control to 3ds Max artists and creative professionals worldwide.

TWINMOTION

Twinmotion eliminates the complicated technical aspects of visualization software, allowing artists to focus on presentation and design. The software gives users more power to generate conceptual


Figure 1: Rendered with Twinmotion

content more efficiently. Figure 1, for example, took just a few hours to complete.

Twinmotion is constantly in development, but here are a few highlights from the recent release include:

- Improved live link capability to software such as Rhino and Sketchup

- Added support for Archicad 24, Revit 2021, Rhino 7, RikCAD 10, and SketchUp Pro 2020

- Added support for importing Datasmith files

- More realistic water, rain, and puddles

Additionally, the team is working toward transfer capability to and from Unreal Engine.

Figure 2: Interior Scene with Unreal Engine
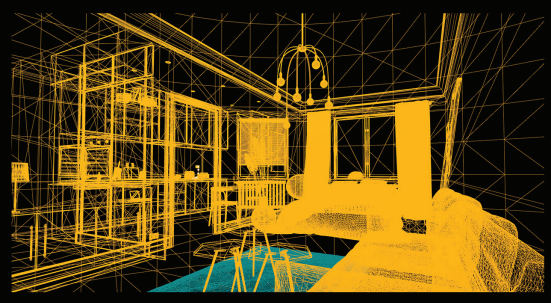
UNREAL ENGINE 5

Epic Games released Unreal Engine 5 for beta testing to the public. While the software continues to impress, a few key core components have creators excited:

- Nanite. The Nanite system allows users to build virtual worlds with content containing millions of polygons. This expansion allows users to use the most advanced applications and assets from photogrammetry (like Quixel Bridge) and Zbrush. We are sure to see some unique content from creators worldwide taking advantage of the combined capabilities.

- Lumen. Lumen is a dynamic global illumination system giving users the option to build higher-quality content in real-time.

The system eliminates the requirement for lightmap UVs, baking lightmaps, or dealing with reflection captures.

See Figure 2 for an example of an interior scene developed using Unreal Engine.
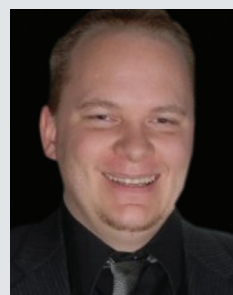
Brian Chapman is an Autodesk Authorized Developer, Digital Artist, and Application Specialist in Las Vegas, Nevada. He can be reached at procadman@ pro-cad.net

by: Brad Brown

Streamline the Process of Designing a Secured Building

Keeping a building and its occupants safe and secure is a complex and ever-evolving challenge. There are a wide variety of products to meet a myriad of needs including the safety and security provided by doors and door hardware. On a project with a hundred doors, there could be thousands of separate components needed with unique installation needs. In the current construction climate, everything needs to be delivered faster, cheaper/less expensive, more flexible, and all without errors or omissions. Furthermore, the health, safety, and welfare of occupants must always be given top priority. One must also be concerned with "outside" factors like a global pandemic, external economic shifts, bad estimates, material cost hikes, or lack of materials and laborers. Remind me again, "why we all chose the AEC industry?"

These are only a few of the factors involved in each design. It generally takes several team members to address just the door and other secured openings for each project. Every team member will have a unique perspective and generally utilize different software. It is very typical to have an architectural team using Autodesk® Revit with an electrical engineer or technology consultant using AutoCAD as their production vehicle. The building owner, facilities management, and other stakeholders, however, do not have access to either platform.

Allegion's Overtur™ is a cloud-based environment where project team members collaborate on the specification, design, and construction needs of secured openings. [see Figure 1] Overtur is a single source of truth for all stakeholders, orchestrating the life of an opening for the health of a building. Our goal is to transform the opening lifecycle through a common view of the data to make door hardware the easiest part of building management. Overtur's cloud-based suite of tools provides a centralized place to capture, maintain and verify door hardware requirements while fostering decisions with easy options to push this information back to the design tools (e.g., Autodesk Revit). Most importantly, Overtur is truly software agnostic. All that is needed to start is a door schedule and corresponding floor plans. This allows Overtur to fit within any design process, rather than dictating how a designer should work.
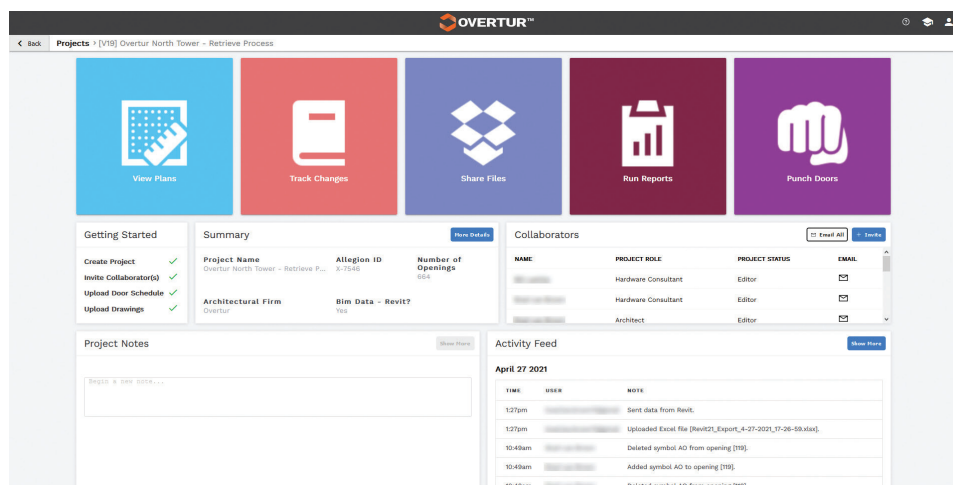
Figure 1

Overtur also has many direct and indirect integrations include Autodesk Revit (2018-2022), BIM 360, and PlanGrid. With regards to inclusivity and choice, Overtur indirectly incorporates data sets from countless other sources e.g., Autodesk AutoCAD\AutoCAD LT, Revit LT, Form-it, to name a few. Information is the strongest part of BIM (Building Information Modeling), and Overtur can convert data no matter how it finds its way into the environment.
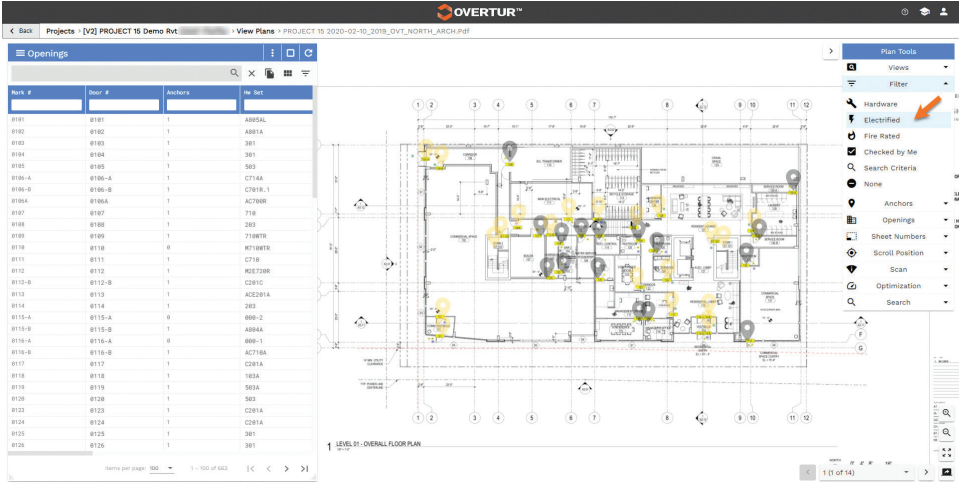
Figure 2

Revit schedules e.g., expressing Revit door and hosted wall ratings within the same schedule for QA\QA review [See Figure 3]. Overtur also tracks and maintains each opening history throughout this journey [See Figure 4].

Allegion™ understands not all stakeholders will want or need access to Overtur's ecosystem. Rather than dictating that data only be accessible via the Overtur platform; Overtur prefers to collaborate within many workflows. This is achieved through reports, where data can be sorted and distributed as needed to extend all collaborators. A few examples of these reports would include catalog cuts, revision reports, quantity summary, and an electronic data summary.

Though Overtur has many Integrations and connection points, its foundation is collaboration. Part of that objective is understanding that not every stakeholder has or even needs the same technology as other team members, like Autodesk Revit. Furthermore, not every project has the same software needs. This is where Overtur's ability to review designs in an online environment thrives. Overtur users can review designs easily capturing decisions and requirements about their project's hardware. This sophisticated review application enables all project team members to collaborate around door hardware discussions requirements, design intent, and other key aspects of the project. Teams can review the project floor plan, hardware sets, and product data (aka cut sheets), all in one place. Data can then be filtered and organized to meet the user's needs and shared in multiple formats, allowing collaboration with stakeholders who might not want or need access to Overtur's ecosystem.

Overtur, much like Power BI, makes collaborative data visually intuitive, thus much easier to understand. Overtur can dissect and then highlight specific information, allowing users to filter multiple data sets simultaneously. The only limitation is a user's creativity with their available data sets. In the example below, we can quickly visualize all locations that have electronic hardware [See Figure 2]. Moreover, with the use of Overtur 4 Revit plugin, users can review data in more ways than even available within their

When I was a practicing architect, the thing I appreciated most about Overtur 4 Revit was that it took the burden of tracking changes off our shoulders. We did not have to keep track of things like room names and number changes. Using this platform gave my firm the security of knowing that all the information in our chosen schedule would be properly conveyed to the Allegion™ team. Architects and other design professionals make so many decisions in one day that it is often impossible to remember all information that should be conveyed. Multiply that by the number of teammates that are actively working within the same Revit model, and you have a lot of information being transferred. Overtur's plugin talks to Revit, it knows that e.g., even though my name is Bradley Brown, most people call me Brad, but the government still knows
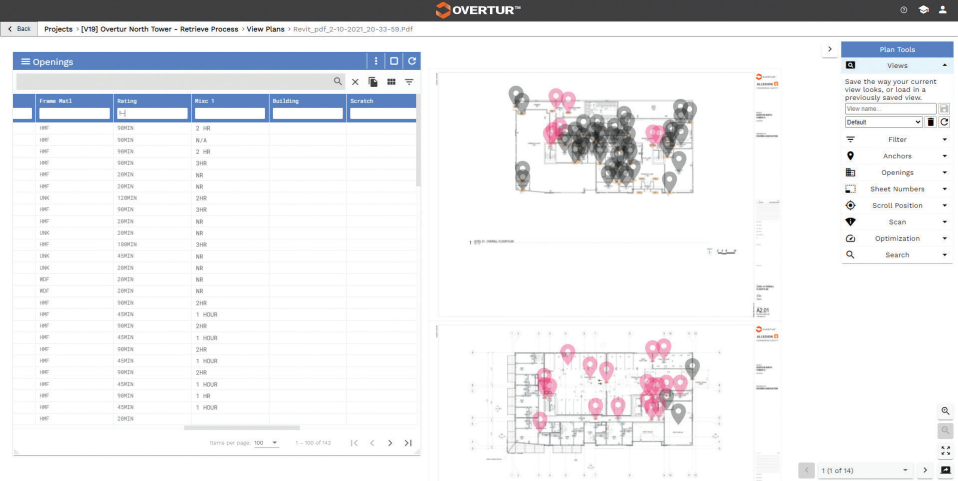

Figure 3

Figure 4

me by my social security number. No one needs to remember that my name has changed from Bradley to Brad because my social security number still has me held by both names. It's the same concept now with Overtur 4 Revit. When we push changes, we don't have to worry about door XYZ now being 123 and trying to communicate that. The software already pulls that information for us. Knowing that this is taken care of, meaning that we no longer had a meticulous activity and converted it to a passive process functioning in the background. Additionally, every time someone retypes something, there's a chance of mistyping or misspellings or transposing of numbers, which can cause have huge implications in errors and omissions. Allegion wants to remove as much retyping out of the equation as possible.

Overtur makes the entire process of making a building and its occupants safe and secure less tedious. Architects and other stakeholders can do their work and know that when they push the information to Overtur, everyone gets the information he or she needs. Coordination is now passively done, as opposed to taking meticulous notes and remembering to convey them to another stakeholder. Everyone now gets updated changes in real-time. This streamlined the process exponentially while supplying collaborative environments for all stakeholders.
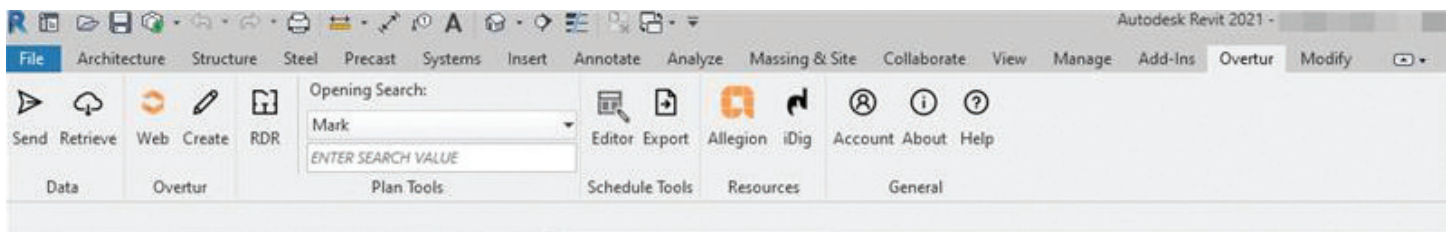
Overtur did not stop there, however. Voice of Customer is "KEY" (pun intended) to making Overtur 4 Revit more than just a portal to link Revit and Overtur's cloud environment [See Figure 5]. The current release has added tools to address pain points our users have expressed within Revit. RDR (Room to Door Renumbering) is a tool that augments the process of aligning door numbers to match approved room numbers. This tool more accurately aligns room and door numbers by eliminating the need for replication; (comma) thus improving speed and efficiency. Additionally, our first tool that expands Overtur 4 Revit beyond Revit door families is a schedule Exported. Prior to Revit 2022, it took about a dozen steps to save a single Revit schedule to an external spreadsheet [.xml or .csv format]. The Schedule Exporter saves as many selected Revit schedules as needed, with two steps and 3 organizational options. Again, the idea here is to reduce errors, improve consistency, speed, and efficiency.

Brad Brown is a 17+ year veteran in the AEC industry, Brad is the Customer Success Lead for the Overtur product line from Allegion where he assists users in their implementation of Overtur as well as other BIM needs. A registered architect in Indiana, Brad previously was an associate and the Director of BIM for a large Indiana-based architecture firm. He is an Autodesk Certified Professional for Revit. He holds a Bachelor's of Architecture from the University of Tennessee. Email: brad.brown@ allegino.com

Figure 5

i9-11900K 5.3GHz in Stock!

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CTC Software's CIM Project Suite

CTC Software, based in Bloomington, Minnesota, has been creating add-on packages for Revit and Civil3D since 2010. Their tools have proven themselves year after year to be an asset to not only CAD and BIM Managers, but for the everyday users of Revit and Civil3D. Of the many software packages they offer, three of them are focused solely on Civil3D. In this article I will explain the benefits and use cases for their CIM Project Suite; a tool targeted towards the everyday Civil3D user.

WHAT IS THE CIM PROJECT SUITE?

CIM (an acronym for Civil Information Modeling) is a play on the popular BIM methodology. We are not just doing line and text drawings with Civil3D, we are creating dynamic models that react to our changes. Our projects are ever evolving and when utilized to its fullest, Civil3D makes updates to certain related design aspects in a dynamic fashion. As powerful as Civil3D is though, there has always been room

for improvement. CTC Software's CIM Project Suite takes some of those out-of-the-box shortcomings and makes the software behave in a logical, efficient manner. From survey, to grading, to corridors, to sheet production, there is likely a tool in this suite that will benefit every Civil3D user in your firm.

WHAT TOOLS ARE IN THE CIM PROJECT SUITE?

There are currently 16 tools in the CIM Project Suite. That number is set to increase very soon. More on that later. First, I will go through an overview of each tool currently available.
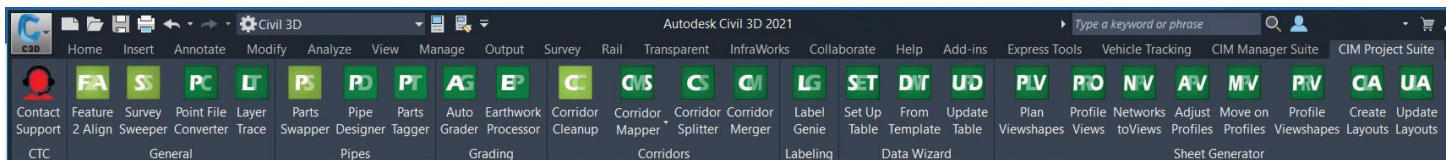
GENERAL & SURVEY TOOLS

Feature Line to Alignment (Free Tool)

Feature Lines are one of my favorite components to Civil3D. However, they have their limitations. While you can create a feature line from an alignment in Civil3D, the inverse is not possible. The Feature to Alignment tool addresses that, with an easy to user interface that can not only create then alignment, but the profile for it at the same time. This is incredibly handy for Surveyors wishing to quickly upload the alignment into their Data Collectors for easier site stakeout.

Survey Sweeper (Free Tool)

Survey Databases are incredibly complex, as they should be, given the power they have. This tool makes working with them easier since it can remove survey figures and points from the drawing, and the database, at the same time.

Point File Converter

This Excel-driven tool runs external to Civil3D and allows you to convert from one point-naming convention to another. You simply create a Translation file, and the Point File Converter does the rest. If you need to go from Alpha to Numeric codes, or vice versa, it can do it quickly, suffixes and all.

Layer Trace

Have you ever tried to Purge a layer, just to tell you that it cannot be done? Even if that layer is empty, there could be a Civil3D style buried in your drawing or template somewhere that is tied to that layer. Layer Trace quickly identifies what object layers, styles, and entities are on certain layers. Not only does it find them, but it also allows you to reassign and delete layers all within the dialog box.

Note: This is a "light" version of a more powerful tool in the CIM Manager Suite called Template Tracker. That suite of tools should be in every Civil3D CAD Managers arsenal, whereas the CIM Project Suite is for every user.

PIPE NETWORK TOOLS

Part Swapper (Free Tool)

If you need to swap multiple pipes or structures in the "stock" Civil3D, you will have to do it one at a time. The Part Swapper makes it simple to adjust your entire network, or just your selected parts, and change them to a different size or material with just a couple of clicks. For long or complex networks, this tool is an incredible time saver.

Pipe Designer

If you have been editing Pipe Networks in Civil3D for any amount of time, you have probably been hoping for a better way. Even the most advanced users struggle sometimes making simple edits. The Pipe Designer allows you to adjust values in a familiar tabular interface. You can design by slope or invert, match pipes by crown or invert, and even see rule violations. This is my favorite tool in the CIM Project Suite. I wish I had this tool years ago!
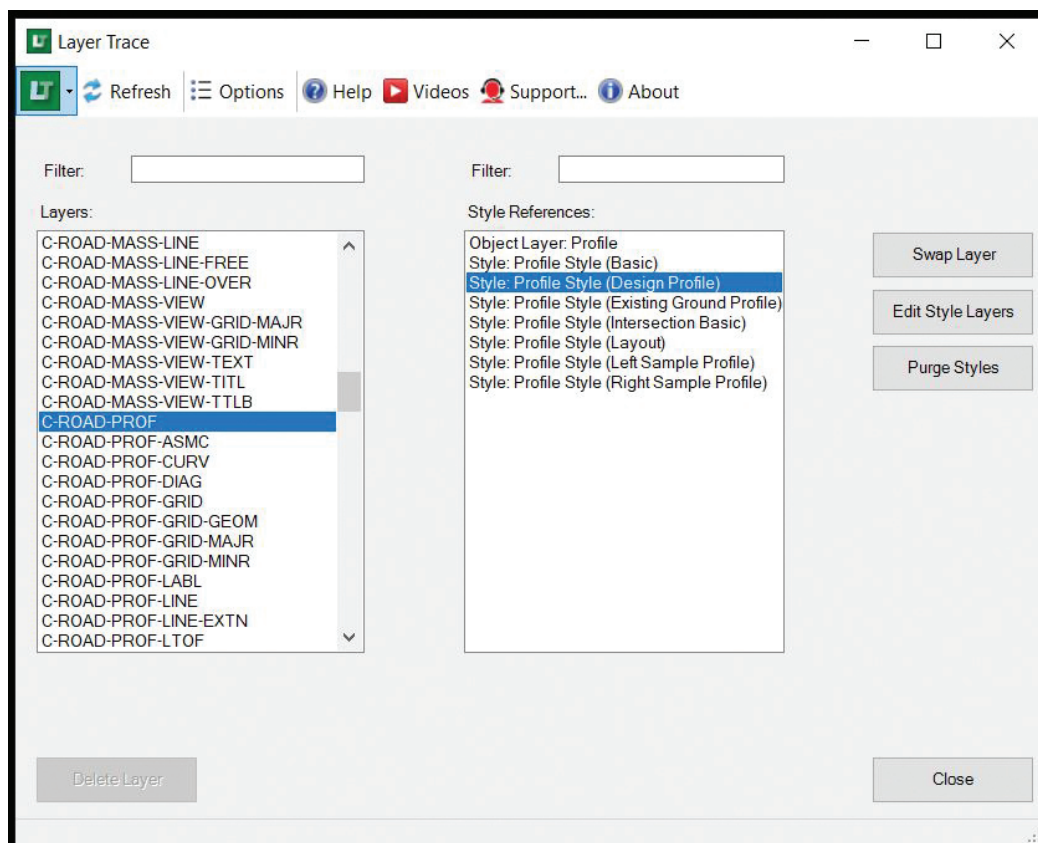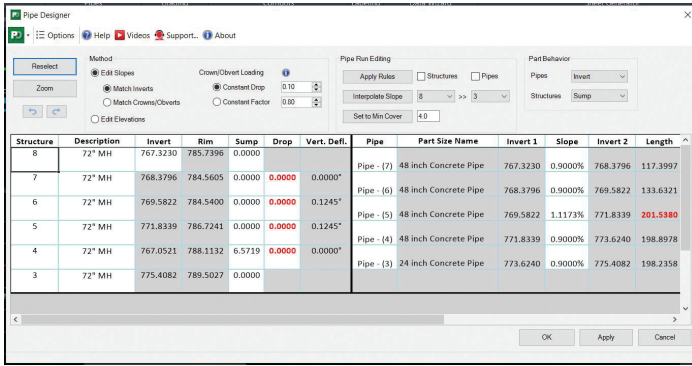
Parts Tagger

Like the Part Swapper, this tool allows you to adjust properties of multiple Pipe Network components at once, instead of one at a time as it is normally done in Civil3D. If your projects rely on Civil3D Pipe Network labels and tables, you will find this tool beneficial.

GRADING TOOLS

Auto Grader

As newer tool to the CIM Project Suite, this tool makes the default Grading Tools obsolete. By utilizing Feature Lines, the Auto Grader creates dynamic line sets to automate the grading process. Create a library of common grading routines and reuse them on future projects. Create surfaces automatically while you are at it. For anyone who has had a bad experience with the default Civil3D grading tools, this will make your day!
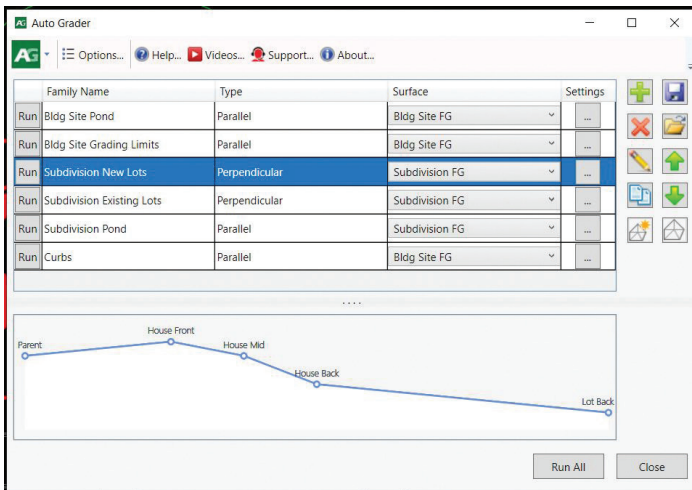
Earthwork Processor

This is another new tool that allows you to calculate site earthwork by regions, which can then be labeled or hatched. The Earthwork Processor utility takes great advantage of the dynamic nature of surfaces in Civil3D and quickly provides that data necessary to make design decisions.

CORRIDOR TOOLS

Corridor Cleanup (Free Tool)

Quickly strip out all the surface, width, or slope targets in your corridors. This works great in conjunction with the Corridor Mapper tool below.

Corridor Mapper

This one requires a bit more setup and design discipline in your naming conventions, but it is well worth it! You can map corridor targets to subassemblies to layers, styles, or even other subassemblies. This will create a dynamic link that will update as the targets change. Incredibly powerful!
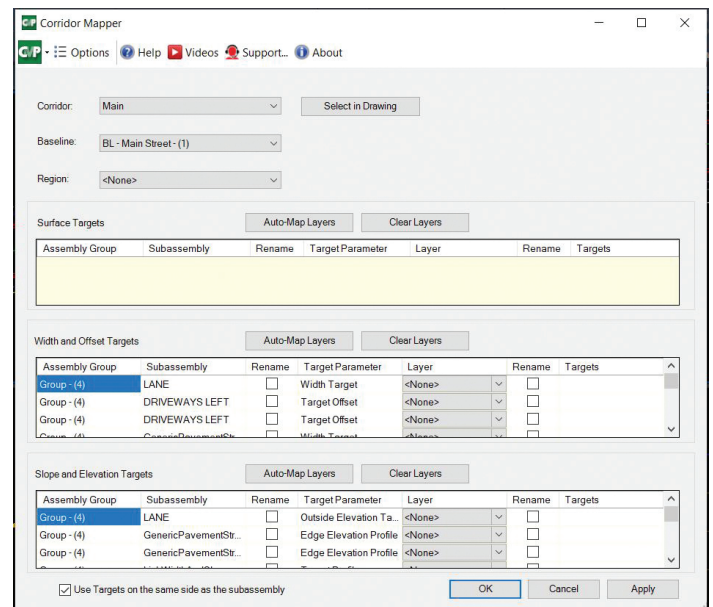
Corridor Splitter & Merger

Split a Corridor into multiple parts. Great for phasing, file management and workshare. Inversely, you can merge them into a new corridor with all the targets maintained.

LABELING TOOLS

Label Genie

Labeling is always a tedious task. The Label Genie provides a way to automate labeling Civil3D or AutoCAD objects through an intuitive interface. Works

across multiple drawings or layouts at once, including external references. Once configured, the label setup can be saved and reused for future projects.

Data Wizard

Easily extract data from your drawing and compile it into a table or Excel spreadsheet that can be used for quantities, legends, or keynote tables. This one does require a little more setup through the creation of a template, but that template file is easily shared and reused on future projects.
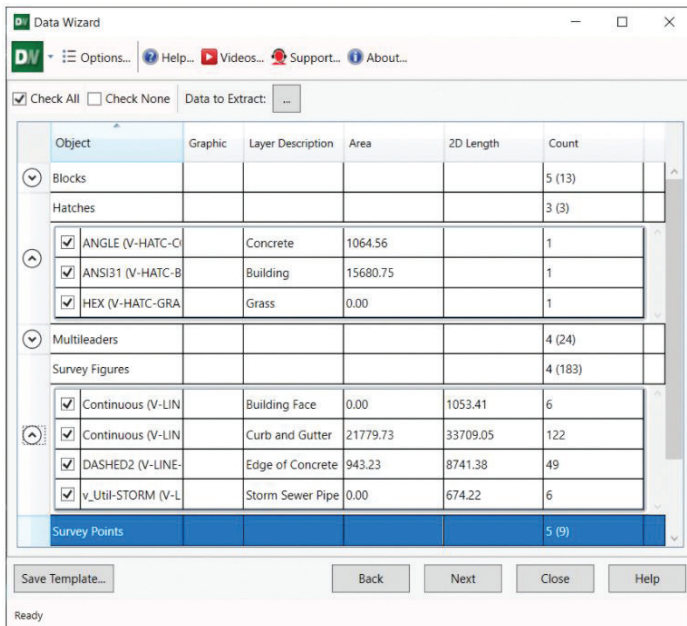
PLAN PRODUCTION TOOLS

Sheet Generator

While the Civil3D View frames work well enough, they are one of the aspects of the software that isn't dynamic. If your project changes, you are back to square one. The Sheet Generator allows for a dynamic workflow for plan and profile sheet creation that adjusts viewports and north arrows automatically.

HOW DO I GET THE CIM PROJECT SUITE?

CTC Software partners exclusively with ATG USA exclusively for customers in the U.S., and with SolidCAD in Canada. Alternatively, the tools can be downloaded from the CTC website, ctcsoftware.com. The CIM Project Suite is offered as a 14-day free trial. After the trial expires, any of the free tools listed above will continue to function. Also, any project work completed during the trial will work as

normal Civil3D objects. Nothing is locked behind a paywall like other software.

A video demonstration for every tool mentioned above can be seen on the CIM Project Suite website. While you are there, check out all of their other offerings! Corridor designers will be happy to see that their Corridor Productivity Pack is also a free download.

WHAT ABOUT SOFTWARE UPDATES?

Customers with subscriptions to the CIM Project Suite can expect updates throughout the year to address bugs, add new capability to existing tools and add completely new tools into your toolbox. For example, existing CIM Project Suite customers can expect a new tool called Pipe Planner very soon. For administrators, you will be happy to know that when the installer runs, it will install the CIM Project Suite on all found versions of Civil3D and does not need to be run for each "year" of the software.

CONCLUSION

Every day, more firms are adopting CTC Software to add efficiency to their projects. I have used them on projects myself, and helped firms implement them to enhance their design capabilities. I truly believe every seasoned Civil3D user will find a "wow" moment when they start using these tools on their projects. For me personally though, I will not use Civil3D on a project without them!

Jason Artley, LEED AP is an Autodesk Certified Instructor with over 24 years of experience in the Civil Engineering Industry. From surveying to design to CAD Management, Jason has seen all aspects of Civil workflows from field to finish. Jason works as a Senior Technical Specialist for ATG USA, An Autodesk Platinum Partner. In addition to his portfolio, Jason is also a Bluebeam Certified Instructor. A "techy" guy at heart, Jason is always looking for new ways to find more efficient workflows and thrives on sharing his knowledge with others.

3rd Party Add-ons for Revit

So, this month is all about the add-ons. The little sub-programs you need when the software you spend millions of dollars on stops short. I suppose that first sentence exposes my feelings on the subject matter. I don't particularly care for them. I'm annoyed they are even needed, and I have very few. When people at my company ask for one, I don't refuse, but I certainly don't jump at the chance to install it on their machines. Here's a few reasons why I don't like most add-ons and some guidelines I have in place for myself.

HOMEMADE GARBAGE

You know what I'm talking about. You really need to watch out for poorly written add-ons. When you start getting errors every time you open Revit, you are going down the wrong path.... Literally. Usually, Revit can't find the correct folders these programs embed themselves within. The issue here is a lot of these add-ons are not homemade and still throw tons of errors and don't work as advertised. I'm not going to single anyone out, but some of the big players do a terrible job when it comes to kicking out sloppy programs.

So, do your homework before you install these!

WHY DOESN'T REVIT DO THAT?

If I need an entire program to actually mess around with topography, what am I spending all this money on Revit for? I need a third party to allow me to change the print order of sheets? I'm not going to go down the road of that letter that went out last year to Autodesk, but my point is, I firmly believe that Autodesk sees these third-party apps and doesn't develop their software because the topic is "covered". It's not.

Make sure you are truly benefiting from having this add on.

AN ADD-ON FOR EVERYTHING

My job as a BIM Director is to keep models as healthy as possible by applying best practices and by being mindful of how my team and I are modeling stuff. Now I know there are third party applications that ferret out bad families, and I suppose I'd use an add-on if I was desperate, but let's try to avoid needing a third-party vendor to clean up our sloppy habits. It's sort of piling on if you ask me. Hey, I blew up this model so let's start installing untested applications on our computers to fix it.

I've been on projects where the prime wants us to install an add-on. I do it.

DO YOU TRUST ANY AT ALL?

OK, I know there are some very good third-party applications out there. The odd thing is, I think the best apps are made by Autodesk's arch enemy. Bentley. The add-ons I do trust are mainly focused on analysis. We use RAM Elements for our structural analysis. We use Trane/Trace for our HVAC analysis.

The add-ons I use for these simply export the model. That's pretty much it. I understand that Autodesk shouldn't have to create an add-on to push models to different vendor's software. That's an entirely different thing. It's when we use add-ons for internal functionality is where I cringe. Perhaps I'm wrong. Hit me up on LinkedIn if you think so. Do it after you can't get a model open because a third-party program jacked up your model though!

Eric Wing lives in Syracuse NY where he is the Director of BIM Services for C&S Companies. Eric is a popular speaker at events around the country speaking on many BIM-related topics.

Eric has authored several books including Autodesk's official training guide for their BIM solution "Revit" called Revit for Architecture No Experience Required. Eric is also an author for LinkedIn Learning where he has authored around 60 full courses on BIM management, Revit, AutoCAD MEP, Navisworks and Virtual Design and Construction (VDC)

Eric has truly been a leader in the architecture, engineering and construction industry since the conception of BIM and 3D design, and has specialty skills in BIM coordination, training and development of technical staff along with daily application of these tools on multi scale, multi-disciplinary projects.

Eric is also currently a Professor at Syracuse University teaching BIM and Advanced BIM at the School of Architecture, and at the School of Engineering.

Eric has also taught courses at the Rochester Institute of Technology and Clarkson University on the subjects of Analytical tools for Facility Management, BIM, and Integrated Project Delivery.

Tell Me More

I have written before about expecting things...too little, too much, the wrong things... The too little/too much part got me thinking...what about the information you give to others when there is a problem, and you fix it?

Ever go to the doctor and he pokes and tests and then says take these pills and everything will be fine. No more info than that? You are puzzled when they share so little that you don't even know what might be the cause or what was ruled out. They just silently go about their business and in their bedside manner they treat you like a slab of meat.

Have you ever fixed something and told someone to try again – it works, and you just say okay, good, and then walk away. They are left puzzled about the initial problem and what they can do to avoid it in the future. They can work now, but they may have little understanding of the nature of the troubles.

When people have issues, they want answers. They need to get back to work. They want their troubles fixed now, but they also want to know what caused it to happen. When you provide solutions to problems, make sure they know more than when you walked up. You need to tell them more.

PROVIDING TOO LITTLE

When you go through the troubleshooting process, you may ponder many possible causes, then uncover a few probable causes and finally one root cause and then the fix. So, when you finally get to that fix, you may be tempted to not really tell them much about your process or possible avoidance methods for the future. They are left with a feeling of relief, "the problem is gone," but not knowing what happened, "but I have no idea what caused it." You need to let them know what happened, the cause and the fix.

PROVIDING TOO MUCH

Troubleshooting can uncover a lot of information as you run through scenarios, possible solutions and final resolution. Some may be tempted to share all of that info with the end user. They start tumbling out words and the user's eyes glaze over. The user tilts their head in confusion and soon just wants to leave. The barrage of words overwhelms their ability to take it all in. They end up not knowing what started or ended their troubles. Others may not even care what was wrong and how it was fixed, let alone how they may have contributed to the issue. They just want to get back to work.

PROVIDING IT IN THE WRONG SETTING

I have seen support staff return to the end user and tell the story of the repair in a group setting. They do it in person or via group chats or virtual meetings with many who were not impacted by the same issue. They may not intend to do this, but are asked by someone what the issue was. When asked, you need to answer, but it should be measured. The group wants to hear the details and the support staff launch into a lengthy tale of wrongs righted. You should avoid sharing specific causes and fixes with non-involved users because they could attempt to do their own diagnosis and attempt a fix in the future. They apply the corrective that you shared in the past to their current situation. It may not correct anything and may actually make the problem worse.

PROVIDING THE WRONG INFORMATION

We have all seen it before...it was user error that caused the problem. It was something that the staff did wrong and they got tied up in a knot. What percentage of your fixes involve user error? I would say a good amount. Ten, twenty, thirty percent... more? If it gets too high, it may be time to do some training. Your staff may not know the right and wrong way to use the tools. But don't sugar coat your fix and NOT tell them when they did something wrong. I will talk about how to gently help them improve, but certainly you do not want to tell them that they did nothing wrong when they did. Don't tell them it was another issue or provide some vague reason, like a server/network or software glitch.

PROVIDING A GOOD BALANCE

Now we move on to a suggested way of sharing info. Just tell them the truth. Be honest, brief and relevant. Let them know what caused the problem and what fixed it.

Let them know the root cause. Even if it was something you did, or did not do, that impacted them. If you forgot to grant permissions to files or features, let them know. If you changed a setting and did not realize that others would be impacted, apologize and let them know. Give them a simple easy to understand explanation. Use little to no technical jargon that they do not understand or might misunderstand. If it was something that another person did inadvertently, explain that and do not blame or disrespect the other person. When

the cause was user error, couch it in nice terms "Maybe a better way to do that is..." or "What might have prevented that was not doing..." No need to insult them. And don't just walk away grumbling about their lack of know-how. Just a gentle corrective might go a long way.

Let them know how you fixed it. Again, keep it brief. Explain the changes made or correctives you applied and move on. If their eyes glaze over, then cut your explanation short. Don't provide too much info if they couldn't care less. If it is something they need to correct, explain it in simple details and have them make the changes. Watch them do it, if you can, and verify that the fix is applied and worked.

Check back later. As you walk by their area later in the day or the next day, stop by and just ask "Still working okay for you?" It allows them to give a quick "yes" and move on, or say thanks. It also reminds them who helped them and they can seek you out again. "If you have any other problems with it, let me know." It also allows them an opportunity to ask another question or tell you about another trouble.

Sharing what you know is key to good support efforts. If you have heard me speak at an event, I usually end my presentations with a final slide that says "Pass It On". That is my motto. Share what you know. When you fix a problem, let people know what made it happen and how to avoid it. Do it in a measured way. Be honest, brief and relevant and folks will appreciate your support.

Mark Kiker has more than 25 years of hands-on experience with technology. He is fully versed in every area of management from deployment planning, installation, and configuration to training and strategic planning. As an internationally known speaker and writer, he is a returning speaker at Autodesk University since 1996. Mark is currently serving as Director of IT for SIATech, a non-profit public charter high school focused on dropout recovery. He maintains two blog sites, www.caddmanager.com and www.bimmanager.com.

Autodesk Revit® Inside the Factory

Before I started my career with Autodesk, I participated in the Revit beta program (Preview Release) Because of my involvement with the beta program, I was then invited to spend a week at Autodesk's Boston office at an Inside the Factory event. I got to know the Revit development teams and had the privilege of working alongside the developers testing new features in my own Revit projects. I have often been asked what is Inside the Factory, and how does one get invited to participate? This article will shed some light on the process and tips to possibly get selected for a live event.

WHAT IS INSIDE THE FACTORY?

Autodesk's Inside the Factory events are Revit feature testing events that are typically held (pre-Covid) in person at one of several Autodesk office locations – Boston, Bucharest and Shanghai. A small group of customers spend the week working alongside the Revit developers testing features and improvements that are under development, usually (but not always!) for the next release of the software. Typically, the event is invite-only based on the customer's participation in the Revit Preview Release (beta) program.

Recently, the Inside the Factory (ITF) events have been held virtually but more frequently. Monthly, in fact. Customers are selected from applications through the Revit Preview Release every month. The sessions are generally two to two and a half hours. Customers test features live in breakout Zoom sessions along with product managers and developers. Customers are encouraged to upload copies of their own projects to work on (not those used for actual production work, because the projects cannot be downgraded). This allows the product managers and developers to understand how the features may be used on "real world" projects.

WHAT IS THE REVIT PREVIEW RELEASE?

The Revit Preview Release is a beta testing program that gives customers early access to the next release of the software that is still in development. Customers use their own projects to test new features and enhancements to give feedback on to the product teams. Customer feedback is important to let our developers know how something will be used in real-world projects and to find any bugs that may not have come up in development testing.

DO I NEED TO DOWNLOAD ANYTHING?

Currently the Revit Preview Release is run on a virtual Frame environment, so for most feature testing, there is no need to download and install the release version to the customer's own computer. This may change depending on the features that are being tested. In this case, customers are encouraged to download and install the Preview Release on a non-production machine - one that is not used for actual working projects... because, well, sometimes things break! That is kind of the point of testing.

★ Test PR

Run Revit Preview in your browser

HOW DO I KNOW WHAT TO TEST?

Each month, the product owners and managers will post specific features to be tested in the User Forums. Feature Summaries are also available on the main Revit Preview Release page. These summaries will give a general overview of the features but will usually not provide specific direction on how to use the feature. The product teams want to see how a customer intends to use a feature without their influence...sometimes this is different from the expected result!

HOW DO I GIVE FEEDBACK?

The Preview Release has its own User Forums where customers can post feedback on the specific features they are testing. If a customer runs into an issue, a Problem Report can be filed to bring the issue to the attention of the product team. Product managers will often ask questions or prompt for additional feedback in the User Forums.

BACK TO THE FACTORY

But what about the Inside the Factory events? How do I get selected, and what happens during the event? Selection for Inside the Factory events typically comes from customers who are active in the Preview Release and give relevant feedback. To apply for an Inside the Factory event, use the application available in the Preview Release. For the monthly online events, customers need to apply each month.

★ Inside the Factory

Event Feedback

Online Series Application

For the ITF online events, you will typically have access to the Preview Release build on the Frame environment. Again, depending on the features being tested the customer may need to download a full version of the Preview Release before the event starts. Before the event, it is important to upload any projects you would like to work with to a special BIM360 project that will be created so that our product teams can upgrade your model before the event starts. This will save time during the actual testing session.

On the day of the event, customers and product teams (for the virtual events) will log into a Zoom meeting. The product teams will be introduced and will go over the different features that are being tested. At that point, the customers are divided into Zoom breakout rooms – usually 2-3 customers per room along with members of the product teams. Customers log into the Frame build of the Preview Release and begin working on their own projects to test the features that were presented. Customers can share their screens so that the product teams can see how the customers are using the features. Customers are encouraged to talk through their process and provide any feedback that they have on the feature – positive or negative! Sessions conclude with a final roundtable discussion with all participants and product team members.

CONCLUSION

As a previous customer and now as an employee of Autodesk, I certainly understand the difficult decisions that are made with each new release of Revit. There are several ways you can provide feedback to Autodesk, and we are truly listening! Help Autodesk make Revit better by providing new Ideas or voting on previously submitted Ideas on the Revit Ideas page at forums.autodesk.com. Submit your Wishes via the AUGI Wish List on augi.com. Apply for the Revit Preview Release by emailing revit.preview.access@autodesk.com to become a beta tester, and then apply for the Inside the Factory live sessions directly within the Preview Release. Thank you for helping Autodesk make Revit better!

Kimberly Fuhrman, LEED AP BD+C, Assoc. AIA, is the Revit Community Manager for Autodesk, and a member of the AUGI board of directors. Follow her on Twitter: @ FuhrmanKimberly, or email kimberly.fuhrman@ autodesk.com.

by: Brian Andresen

Welcome to *AUGIWorld* Inside Track! Check out the latest opportunities to advance your skills, processes, and workflows in your firm with the most current AEC-related software and hardware updates available.

ENVIRONMENT
https://archintelligence.com/
Autodesk Revit: 2022 , 2021 , 2020

Environment is an application, which helps architects, landscape architects and designers to avoid the routine and complex operations with placing an architectural model into the environment of a real site, and instead; gives an opportunity to enjoy the design process.
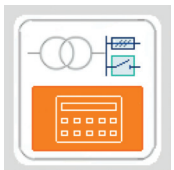
METEOR SPEC LT
https://meteorcalc.com/
Autodesk AutoCAD, Electrical, Mechanical, Architecture, MEP, Autodesk® Civil 3D®, & AutoCAD Plant 3D
Version: 2022, 2021, 2020, 2019, 2018

The evolution of the MeteorSpec continues. Taking all the best from previous versions, the MeteorSpec is powerfully developing in the direction of universal tools for electrical designers.

MeteorSpec LT is software toolkit for electrical designers and consists of the following components:
- MeteorSpec-NETWORK – software for simulation, analysis and calculation of 0.4kV distribution networks
- MeteorSpec-ELECTRIC – collection of various calculators for electrical designers and students
- MeteorSpec-PLINE – totally customizable multipurpose tool for summarizing lengths and areas of any objects that can be modeled by lightweight polylines.

The main features are:
- Support for low-voltage networks with a radial topology and with any level of complexity
- Calculation of short-circuit currents according to IEC60909 (last edition 2016)
- Calculation of voltage losses in low-voltage feeders with a balanced load
- Calculation of power sum and actual load currents in low-voltage feeders
- Adjustable cable database to regional standards
- Automated computation of cable specifications

Electrotechnical calculations: The program has calculation process, which is open to monitoring. Every step of all the electrical calculations (including interim and auxiliary results) can be thoroughly checked.

Specifications of equipment: The MeteorSpec-NETWORK allows you to quickly obtain the cable specifications of network models. Results are in a table.

Connection with street lighting networks: Any junction of low-voltage network simulated, can be used as a power supply point of a street lighting cabinet designed by the partner software named MeteorCalc SL.

Compatibility and localization: The MeteorSpec-NETWORK has localized versions for different regions. Just tell us where you are from, and we will make and provide a corresponding regional version to you.

Component MeteorSpec-ELECTRIC: The MeteorSpec-ELECTRIC is collection of various calculators for electrical designers and students. We will supplement this collection at the request of the users.

Component MeteorSpec-PLINE: This "time-tested" plugin is what earlier used to be the main part of the MeteorSpec software. The MeteorSpec-PLINE allows to calculate summarized lengths or/and areas of any objects that can be modeled by lightweight polylines.

MY NOTEBOOK FOR AUTODESK AUTOCAD
https://apps.autodesk.com/ACD/en/Detail/Index?id=3232567860036743389&appLang=en&os=Win32_64
Autodesk AutoCAD, Electrical, Mechanical, Architecture, MEP, Autodesk® Civil 3D®, AutoCAD Plant 3D, & P&ID (2017)
Version: 2022, 2019, 2018

Notes are saved on a project-by-project basis. Each drawing will have its own notes. When you share your Autodesk® AutoCAD® model with your colleagues, notes are automatically shared. Just ask them to install the AutoCAD My Notebook add-in. No sign-in required!

If you have some news to share with us for future issues, please let us know. Likewise, if you are a user of a featured product or news item and would like to write a review, we want to know. brian.andresen@augi.com

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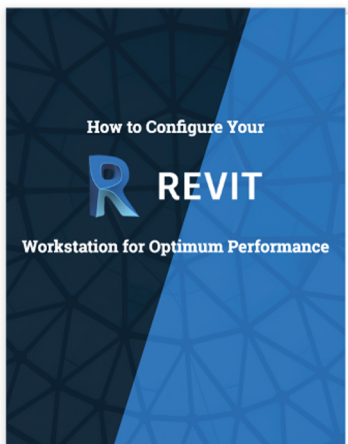
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