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AUGI WORLD

The Official Publication of the AUGI Design Community

August 2021

Managing Your Workflows, Staff and Projects

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BIM Management Mistakes To Live By

Pulze for 3ds Max

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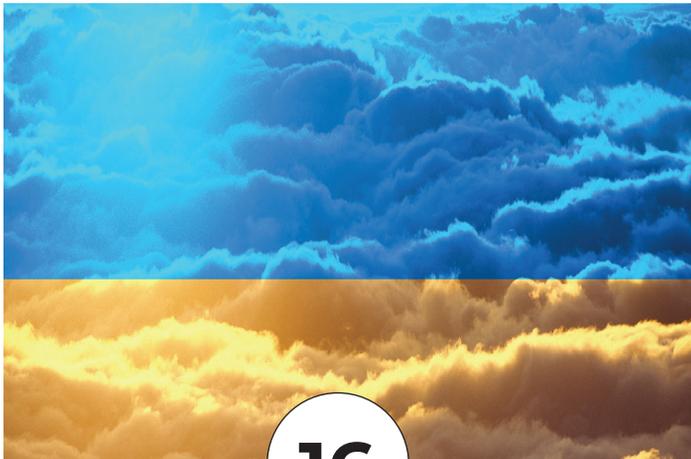
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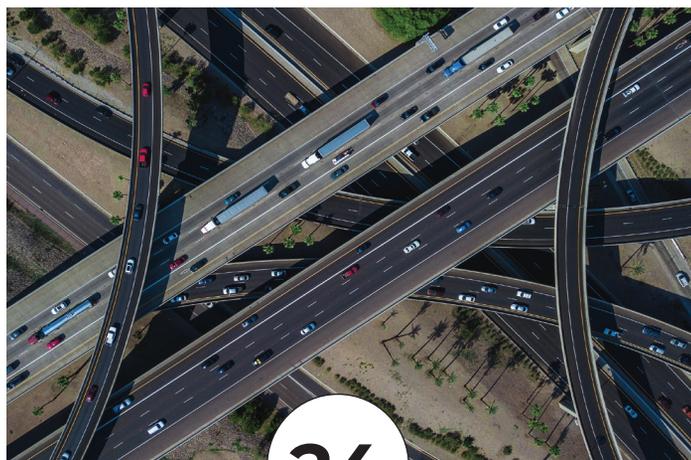
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CORRECTION: The AUGIWorld editorial staff regrets that Jason Lush was not properly credited with writing the "BIM Management Mistakes To Live By" article in the August 2021 issue. We are grateful for her contribution. Please read Jason's bio below.



Jason is a BIM Technician who has built his 18+ year career by working in various architectural and engineering industries, practicing and coaching many design and drafting tools and concepts. Whether producing drawings, modeling buildings, educating others, or managing aspects of projects and people, Jason takes pride in his attention to the details and his delivery of accurate results and consistency. He also has experience with installing, implementing, instructing, and supporting Autodesk applications. Jason is also the Revit Structure Content Editor for AUGIWorld, an industry-focused magazine with over 500,000 digital subscribers.



From the President



Hello AUGI Members!
 One of the most difficult things to nail down within an organization that uses BIM & CAD software is how to manage that software. There are so many variables that it can be overwhelming.

We have the IT perspective of deploying the software, standardization development from a BIM/CAD manager perspective, as well as leadership for all aspects. For bigger firms this may be more obvious, but for smaller to mid-size firms there isn't always a clear answer on how these tasks should be handled.

To help you with this daunting task, this month you'll find articles on management of BIM & CAD software. For example, BIM Manager Mistakes, Civil 3D Management & Leadership Cloning.

Whether you are a smaller organization trying to figure out a good starting point, or a larger organization trying to fix existing problems, you'll find an article this month to get you started on the right path.

I hope all of you are surviving the heat, the drought, the fires and the flooding. Mother nature at her finest this year!

"When life gives you a hundred reasons to break and cry, show life that you have a million reasons to smile and laugh. Stay Strong!"

KaDe

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Letter from the Editor (The Beginning!)

If you read last month's issue, you will have noticed that our beloved David Harrington has stepped down from the Editor-in-Chief role and has since passed the baton on to me. Thank you for your faith in me David...I think 😊

Many of you know me from being in the industry for quite some time. I became a member of AUGI around 2004-ish. I could give you the exact year, but my profile was recently reset, and it shows that I've been a member since July 1, 2019. Very far from the truth, and I have the beer mugs to prove it! Oh, and a Top Daug t-shirt to boot!

I joined the Board of Directors for AUGI in January of 2018. The following year, I stepped into the Secretary position. In 2020, I was *AUGI WORLD's* Copy Editor. Now we are in 2021, and I'm your new Editor-in-Chief, and the Treasurer. Brian Andresen has since stepped into the Secretary position, and his daughter, Isabella (Izzy) Andresen is our new Copy Editor. Congratulations to both.

How exactly does *AUGI WORLD* operate? First, you establish a list of subjects for each month of the year. As I mention later in this letter, it has been the same for some time, but not for long. Once the subject matter has been established, then we seek out authors. We have some content managers that help us with this task. Thanks to each of you for your help with this.

We use a platform called Basecamp to send messages about articles and upcoming issues. Basecamp is a project management & team communication software, as well as an online service. On the 15th of each month, it is the Editor-in-Chief's (EiC) responsibility to open up communication for the upcoming issue inside Basecamp. All the content managers receive an email notification about the post on Basecamp. The EiC reminds the group about the upcoming subject and asks what they plan on writing about. This helps later down the line in case we have more articles than we asked for. In that case, we hold excess articles for a later issue.

The next step is to stay on top of things until the end of the month. There is a folder on Dropbox where the content managers place the articles once they have finished them or received them from someone they chose to write the article. We use Dropbox as a channel to receive articles from content manager. Most articles are in by at least the 5th of the next month. There is some wiggle room, but not much.

When the articles are placed in this folder, it's then the Copy Editor's (CE) responsibility to retrieve the articles, read them, and correct any misspellings, punctuation, grammar, etc. After the CE edits the files, the files are moved into a production folder on Dropbox.



Now, the Layout Editor takes over. Their role is to rearrange the layout of the magazine. They retrieve relevant photos for the cover and initial title pages. They are also responsible for placing the ads in the magazine that vendors, such as Dell, BOXX, etc., pay to have their ad displayed to gain more exposure to our members.

After the layout is finished, the Layout Editor then sends a draft copy for the CE and EiC to look over.

After comments from the CE and EiC, the Layout Editor then addresses the comments and sends back a draft #2. Depending on if there are more comments, the process continues with a draft #3, #4, etc., until the CE and EiC receive a final copy.

Once the final copy is approved, the CE is responsible for creating a “blurb”. The “blurb” highlights the author and a brief summary of the article. This is then sent to the Email Administrator. The Email Administrator takes the “blurb” and mocks up the email to send the blast out. They send the EiC a copy of the email as a “test” for approval. Once approved the email is then blasted out.

Finally, when the email blast is sent out, the EiC goes to ISSUU and inputs various information. After the information is filled out on ISSUU, the EiC hits the publish button. A URL is created that is used to navigate to the online issue of *AUGI WORLD* magazine. On their website, there is a lo-res, hi-res, and a read online option. From there, the EiC goes to publish it on AUGI’s website. And that my friends, is the process.

On another note, most know that we are simply AUGI, Inc. now. So, what does this mean? What this means is, changes are coming. We are now open to ALL software and AEC platforms. We are actively seeking authors for all of this. We want more content. We want more authors. Really the only change with us is that we are now free to accept these other avenues of information.

As we move forward toward 2022, I want to make you all aware that we are going to change up the monthly subjects a bit. They have been the same for quite some time. With all that has happened in the world the past year and a half, what better time than now to make a change? I hope all of you will embrace this as a step up for AUGI. We understand your position in the industry and we fully accept all criticism and/or praise. We want this organization to reach as many people as possible. For those that have steered away in the past due to using cross platforms, etc., now is the time to get back in the saddle with us and be a part of something that is much greater now.

I truly want to thank the entire industry and our loyal followers. I also want to thank David Harrington for allowing me to take over this position

that he has held dearly for so many years. David is still around, and very active with AUGI because he IS our Executive Director. Without him, we would be a little lost. Well, maybe more than a little.

With all that said, I hope I can fulfill your interests and passions in this new position. We at AUGI appreciate our members (we have over 500k) and want to provide them a place where they can collaborate and learn from one another. This is, and has been our goal, and we will continue to do so.



Mr. Todd Rogers is the BIM Manager for Walter P Moore with over 28+ years of experience in teaching, managing, and providing hardware and software solutions in the greater Houston, Texas area. He also holds the “Autodesk Expert Elite” status - a program to recognize individual community members who have made extraordinary contributions with helping customers by sharing knowledge, providing community leadership, and exemplifying an engaging style of collaboration that drives a healthy and valuable Autodesk customer community. Todd is also the Treasurer on the Board of Directors for AUGI, and AUGI WORLD’s Editor-in-Chief. He is an active blogger. Through his personal blog website (civil3dj.wordpress.com), he shares tips and solutions with Autodesk software issues.



BIM Management Mistakes To Live By

BIM Manager” seems easy. You know BIM, you know the technology, we have been a manager before or took some classes, we are ready to roll.

Roll right down the hill which we just climbed up to get here. Being a BIM (feel free to add CAD as needed) Manager is tough.

Let’s take a look at a few lessons learned on mistakes easily made on the way to BIM Management success and how they can be turned into a successful journey.

KNOW THE GOAL

Promoted from within, hired from outside, the first thing you need to do, is find out the goal. This is not the same as what goals you feel are important, but what the end will look like for your company or what they are trying to achieve with you in a manager position.

You may need to dive into the ideas behind the goal as sometimes it is such lofty or wide weeping goal, that you are not going to be able to do it all at once. So, break it in to small achievable blocks that lead to the end goal. This way you will not lose site of what it is you are meant to do.



Figure 1 – can't see the forest through the trees

The goal maybe something as simple as we want to be BIM leaders, or we are going 100% BIM. OK, but what does that mean? Now you get to start working. Technology goals, staffing goals, workflow goals, et cetera. Stop, look at your 'map' make sure those small goals will get you to your over goal. See the end goal, and making the small goals work together is the key.

Do not lose site of what you are there to do and what you are to achieve.

IT'S NOT YOUR WAY

You are the one now, you cannot wait to implement all the great ideas and procedures you have. Finally, it will be your way and the right way.

So why are these great ideas and work flows not working?

Easy answer is, they are yours, not your companies or team's way. Change needs to be for a reason, and to fit the end goal you are trying to reach. Keep in mind you also will be affecting how people are doing their job, and in some cases changing something they may have had a hand in creating.

It is not that you have bad ideas or can not implement them correctly. Just be mindful of why you are changing, modifying, adding et cetera to the existing standards, workflow, technology library. Everything needs to fit into the overall goal.

Remember, the people you manage are part of the process. Look to them for input. Stop, look at your 'map' make sure these changes are helping achieve the small goals that will get you to your over goal. Your way, may not be exactly right for the team or

the goal, adjust it as needed with help from others and it will be come the way.

YOU CAN NOT DO IT ALL

Managing does not mean doing it all. As BIM managers technology is a big part of what we do. But nowhere does it say we have to do it all, all the time. Plus, if you really want your team to feel involved and part of the process, you should really make them part of it.

Assigning tasks to team members is a great way to get things done, take something off your plate, and to have that team members feel really involved in the team.

If you need a family done in Revit, we know you can do it. But why not get a young power user to do it.



Figure 2 – You can not do it all

Now this is where the people managing comes into play, making sure you get what you are needing. You will need to lay the task out with a clear goal of '1-2-3' know when to step in to say they have gone off track and explain why 101 and 106 is not needed all though interesting. Knowing what you need from them is easy. Getting them to know what you want from them is the hard part. When done right, this will build a great sense

or teamwork as well as owner ship of how they are doing tasks.

As well as freeing up time for you to reach the goals laid out before you.

TAKE CONTROL

This does not mean to become, as we have all heard before "the standards police". No one responds well to being told what to do or what they are doing is wrong. Let's face it, no one likes telling people no, that they have made a mistake or that they cannot do it their way.

We need to be able to, and as hard as it is, it is part of the job we do. The good thing is, in most offices we have a process and a workflow, which makes it easy to help bring in those few who still just want to do it their way back on track.

Make sure everyone is aware of the process, from drafters, to modelers, designer, engineers, to project managers. Take control of the process you have in place by teaching all of them what it is and why it is there. Show them the goal and explain why and how it will help. If everyone is on the same journey it becomes harder for people to make it about their journey and not the common one.

TEACH THEM

We work in a fast-passed world that at times does not lend itself well to teaching. This is a hill you will have to overcome.

Questions on how to do things, or why is something not working right come up on a daily if not hourly basis, and it is always easy to just fix it for someone. Since really managers just want things done right and fixing is kind of what we do.

Sadly, just fixing something will not move you to your goal. Take the time to show someone how to do it, chances are you will not have to do it again. As well, have people share their knowledge with others with others.

BE ABLE TO DO IT

Be able and willing to jump in if need be. If you want someone to do something a certain way, make sure you do it that way and are able to jump in a do it.

You are what you do, not what you say you'll do.

Figure 3 – Do as I do.

When you find that happening maybe that is one of those times you need to ask is there a better way. Hey why not ask your team, this is really not working, any ideas.

DO HEAR THAT

Meetings are great, we get together with our team, and we get to go over all the goals, plans to get there, and how we all will be better in the end. Now

It is true, leading by example is one of the best ways to do it. If you ask for it to be done a specific way, you sure better be doing it that way. And be able to jump in and help when needed. If you are not doing that way, you cannot expect anyone else to as well.

think, how often do you hear your team talk in a meeting. I mean really talk. Not just answer, when you say, "Any questions?"

Let them talk, let them have suggestions, let them have ideas. This is where you will learn what is working for them. They after all, are the ones getting it done. Keep it positive and productive. It is easy to have it take a dive into complaints and finger pointing.

Lesson and learn. This is the big one, if you like something and say you are going to investigate it. Follow up with it. Look into it, try it, and if it works out implement it. If it does not, let them know that it is not going to work out and why.

You will always learn more by listening then you will be talking.

IT IS NOT EASY

BIM management is not easy. It is a complex role that has you 'managing' many different things all the time. Knowing what you are to achieve is a must. Then you can plan your goals to reach your goal. Relying on a well-educated and trained team, that are willing to work with you and not for you. Take the time to stop and review the goals if things are not going right. Is the problem with you or the team? Look, listen, learn.



Jason is the BIM Manager at Lavergne Draward & Associates, a Structural Consulting Firm in Winnipeg, Manitoba Canada. Jason has over 22 years of experience in Structural Consulting using AutoCAD and Revit as a drafter, modeler, coordinator, team leader and CAD Manager. In his current role as BIM Manger Jason is responsible for implementing and maintaining BIM and modeling standards as well as providing technical support and training for both AutoCAD and Revit users and continues to enjoy the challenges of daily production work. He can be reached for comments or questions at jpwpgcad@gmail.com on Twitter @JP_WPGCADGUY or LinkedIn..

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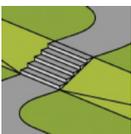


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Version: 2022 , 2021 , 2020 , 2019 , 2018

The Land[x] stair plug-in provides tools for creating and editing simple parametric staircases in Autodesk® Civil

3D®. The staircase is an Autodesk® AutoCAD® 3D solid and the parameters (height of riser, length of tread, width, landing and slope) are stored in a property set attached.

This tools are useful to landscape architects and engineers when using corridors for designing landscape paths. As the staircase is a solid it can be projected to profile views and as the parameter is in a property set it can be labeled with this parameter.



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Version: 2022 , 2021 , 2020 , 2019 , 2018**

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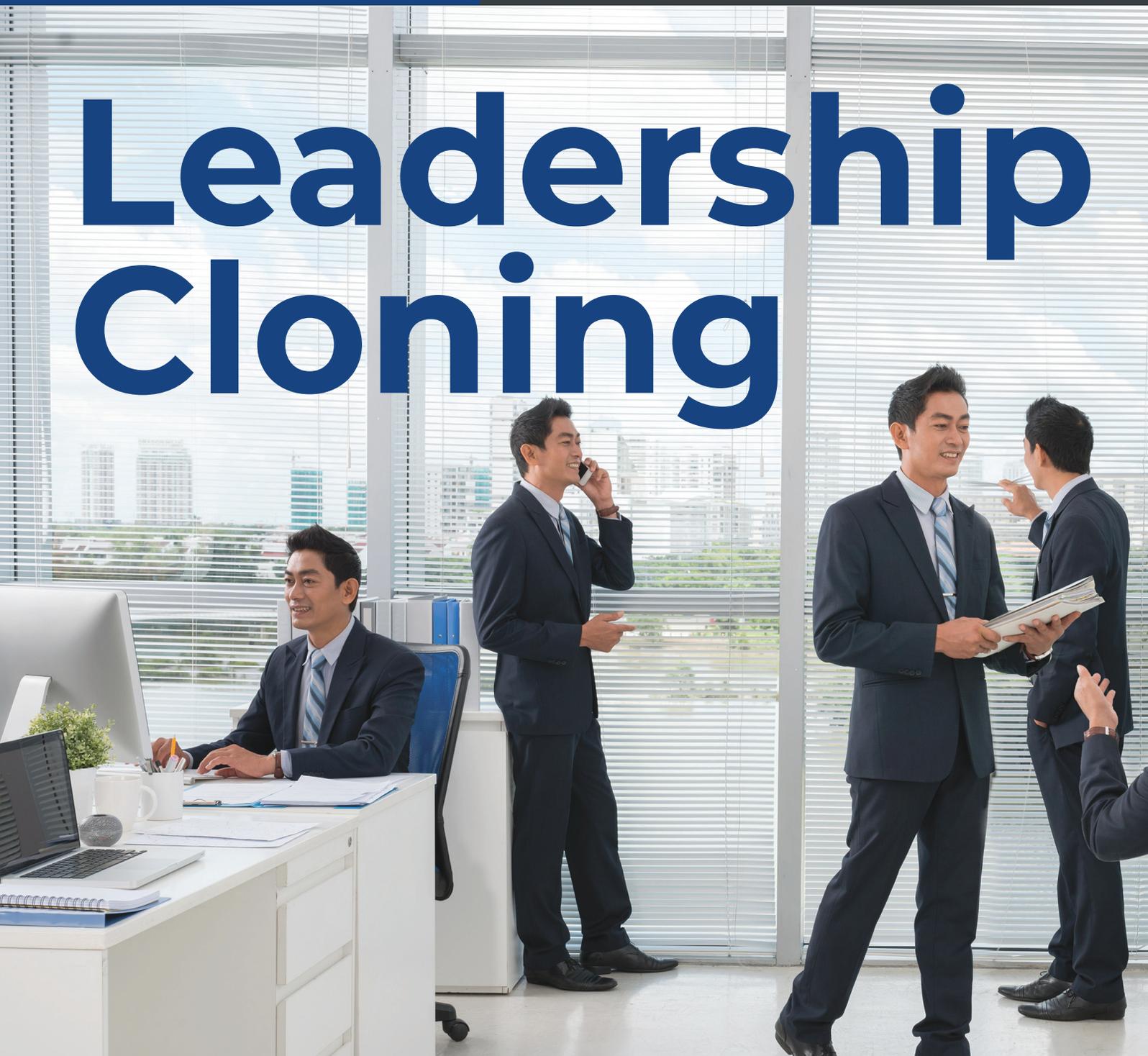
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If you have some news to share with us for future issues, please let us know. Likewise, if you are a user of a featured product or news item and would like to write a review, we want to know. brian.andresen@augi.com

Leadership Cloning



Everyone is like a good leader. You probably think you are a good leader and think that others who pattern their leadership after what you have learned will be good leaders also. As you bring people along, they will start to act like you. Part of you hopes this will happen. They will watch and learn. They will see you in action and follow in your steps. They will imitate your methods, learn from your guidance and start producing like you do. Or so you hope. Or do you? According

to brainyquote.com, Charles Caleb Colton says, "Imitation is the sincerest form of flattery," so don't we all want to be imitated? Don't we all want others to lead just like us? Can't we just clone them? Can't we just clone me?

CLONING

From genome.gov, the term cloning describes several different processes that can be used to produce genetically identical copies of a biological



entity. The copied material, which has the same genetic makeup as the original, is referred to as a clone. Researchers have cloned a wide range of biological materials, including genes, cells, tissues and even entire organisms, such as a sheep.

Remember Dolly the cloned sheep? She was born in July 1996. She grew up and gave birth to 6 lambs, the last one born in 2000. She was put to sleep in February 2003 at the age of six after contracting lung cancer from a sheep retrovirus. Following the

postmortem, Dolly will be donated to the National Museum of Scotland in Edinburgh, where she was stuffed and put on display. But I digress... back to leadership.

As you lead, others are watching. They notice, they perceive, they ponder and slowly they clone themselves to match what they are impressed with in you. They also hopefully avoid the negative traits they see in you. A Mini-Me kind of process that stamps out an exact copy. Leaders really like this – it flatters them to think that others want to be just like them. It is easy for them to see this burgeoning leader as a future star. There is no guarantee that a clone will look or act exactly like you, but they will be pretty close.

The means and methods that you employee are the best ones you know. If they were not, you would not use them. How you get things done and what you use to make things happen is part of your leadership style. It works for you. It may not work for others. As others try to perform by mimicking your actions, it may not produce the same results.

Rather than cloning, maybe there is a better way. You want to help others get things done using their own methodology. They may be better than you at many things and you want them to capitalize on that. They do not have to be a clone.

But like the doctor in Mary Shelley's book *Frankenstein*, people will take parts and pieces from you and others. Kind of like building, "the Monster." Pieces from one person, parts from another. The novel has a very tragic ending that differs from the old black and white movie with Boris Karloff (no pitch forks, torches or burning windmills in the book).

THE PROBLEM WITH CLONING LEADERS: CLONING IS NOT VERY EFFECTIVE

Again from genome.gov, reproductive cloning is a very inefficient technique and most cloned animal embryos cannot develop into healthy individuals. For instance, Dolly was the only clone to be born live out of a total of 277 cloned embryos.

Why would I want to have an exact copy of myself? They would make the same mistakes, and there is no guarantee that they would have the same success. Every leader knows that the environment they are in and the people on the team make for

success and failure. They could do everything right and it still come out wrong. Conversely, they could do everything wrong, and the team might still succeed.

CLONING DOES NOT RESPECT OTHERS TALENTS

I find that I do not really want someone else doing exactly what I do in every situation. Even those that might be a stand-in for me in meetings or projects. Each of us brings a mix of talent, experience and giftedness that creates the unique blend that is our leadership style. I want to capitalize on that by giving others the leeway to do it their way. The best way to promote a leader is to let them lead their way and make slight course correction when you see troubles coming. Help them be leaders, not clones.

CLONING TENDS TO CONTINUE YOUR FAILURES

If someone else does those same things you do, even down to the mistakes, then they will have the same troubles you have. Better to have a leader that can take a different approach than one that always acts and reacts like you. I have seen other succeed where I have trouble making headway. I actually enjoy seeing that happen, since my ultimate goal is the make progress on a project. Letting others take the lead on portions of the project can bring new vitality to the team.



REPRODUCTION, NO CLONING

Like most living things, reproduction is best. It is a combination of differing inputs and allows for uniqueness of everyone to shine through. Your goal is to identify other people's talents and not try to just look for reflections of your own. And your job is to let them lead in small things and in large. Your job is to identify and empower and then get out of the way.

NATURE AND NURTURE

For many years people have discussed the juxtaposed stances of nature vs nurture. Are there natural born leaders or can you make them via training, experience and exposure to the leadership role? Is it a combination of genes or is it the environment that creates leaders? I think it is a little of both. When you lean into someone's natural talents and create an environment for growth, then others will be able to expand their leadership style in their own way. You take the natural and nurture it for success. I have had others do that for me. Hopefully, I have done that for others.

"Leaders don't create followers; they create more leaders." – Tom Peters

So, when you are noticing others who have leadership skills, let them use them, in their own way. When you see others with leadership talent, encourage them to take the lead, which includes you stepping back and letting them step forward.



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.

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Scene Management with Pulze for 3ds Max

Pulze Scene Manager is an interface built to work with 3ds Max for scene management. The interface is designed to be efficient, intuitively organizing settings and tools. The Manager works with V-Ray, Corona, Fstorm, Redshift, and Arnold renderers (check documents for versions).

Figure 1 displays Pulze's intelligent interface. The controls conveniently organize settings otherwise scattered throughout the depths of various dialogue boxes inside 3ds Max. We'll highlight some of the functions in this article.

SCENE LIST AND CAMERAS

The Scene List organizes scenes primarily based on the camera's name. For each scene, users assign their resolution, aspect ratio, and light source. The Setup List gives users a convenient way to navigate camera locations while simultaneously adjusting resolutions and light sources. For

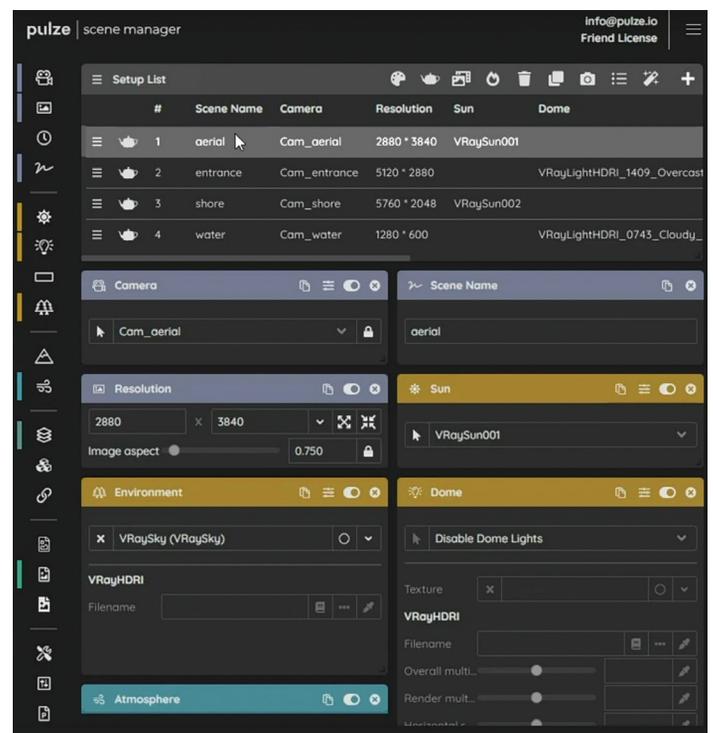


Figure 1 – Pulze Interface

example, a user can place multiple V-Ray Dome Lights in their scene. However, this is not standard practice. The Manager automatically disables Dome Lights not associated with that scene by selecting a scene in the Scene Manager Setup List. This procedure allows users to work with several HDRI environments in a single scene. Additionally, camera settings are organized within the Scene Manager to give user-specific control over the elements they wish to modify. See Figure 2, for example.

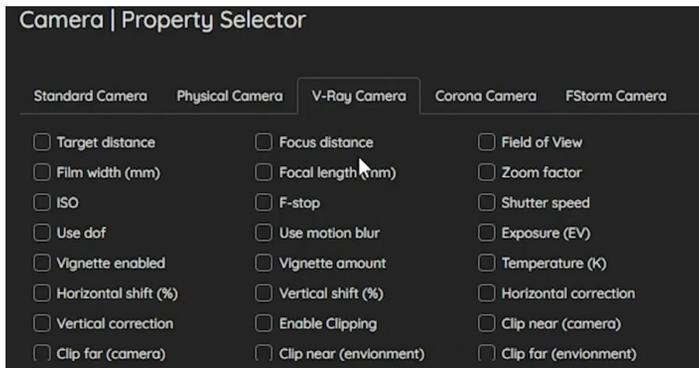


Figure 2 – Camera Settings

HDRI QUICK BROWSER

The HDRI quick browser provides users with a quick way to apply HDRI images to their scenes. Additionally, it provides the ability to search the HDRI Skies library, giving users convenient access to the hundreds of HDRI images available for download. See Figure 3, for example.

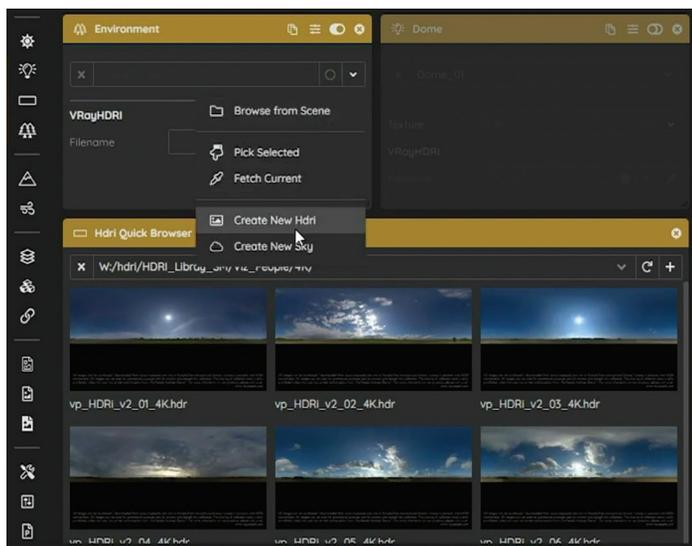


Figure3

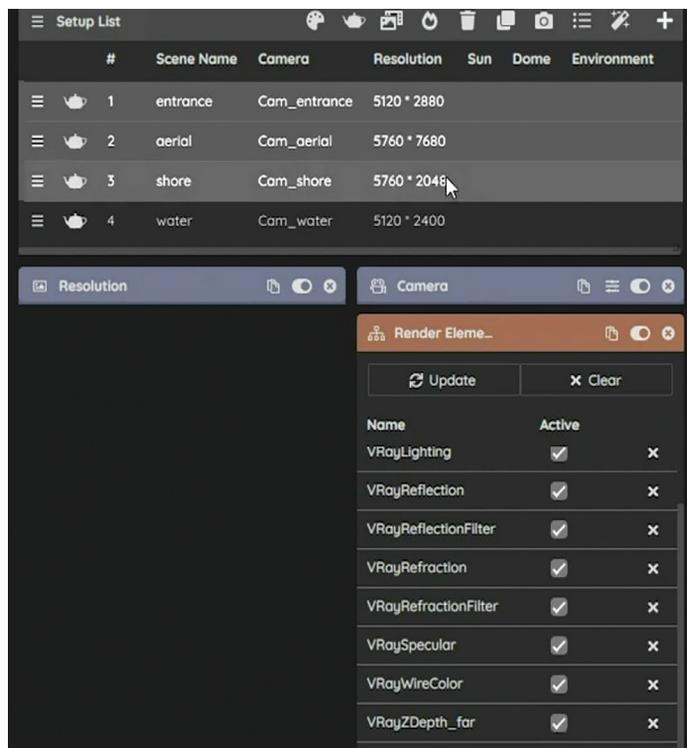


Figure4

RENDER ELEMENTS

The Scene Manager allows users to assign specific render elements to each of their scenes, helping to organize and save time with renders where specific elements aren't needed. See Figure 4, for example.

FINAL NOTE

The Pulze.io team also created Post Manager and Render Manager worth exploring to determine if they can help you with your production needs.



Brian Chapman is an Autodesk Authorized Developer, Digital Artist, Designer, and CAD Application Specialist. Brian shares tips and tricks at procad.blog with a portfolio of digital artwork and renderings at emptypawn.com. Brian's email is procadman@pro-cad.net

Revit Project Setup in a Multi-Trade Environment

For who? For a small 10 person firm? For a 10,000 person firm? For C&S Companies? (The 500+/- person company I work at). It does make a difference. What your firm does also makes a difference. So therefore, I'd like to stick to the topic for this article. I want to discuss basic production. No BIM Execution Plans or LOD. I just want to discuss my checklist and how I start every project regardless of the size.

TEMPLATES

OK, it starts with the templates. I'll be honest right now and just say that I am lucky to have some pretty talented folks around me. I wish I could say I know everything about anything but I sure don't.

Templates for each trade need to be developed with input from the folks who are doing the design every day. This development doesn't happen overnight. The way I approach each trades templates is to let the engineers, architects and designers hash out what they feel is most productive for them. Not everyone in the room is a Revit expert (in fact some of the people are proud of the fact they don't know Revit). I sit in the meetings looking out for the entire company. For example. When an architect starts hating on the Arial font. I say, "Nope choose a different battle. This is what you want a two fire rated wall to look like in plan? Awesome. That's great, let's do it. But leave Arial alone"! My company's drawings look a certain way in terms of

borders, fonts and view titles. I need people to be as flexible as possible, but within the envelope of my company's brand. This consistency takes the guesswork out of wondering what templates to use and how we must configure them for a specific person or project.

I should mention how much content I like to add to a template. I am personally a minimalist. I see templates with every conceivable family loaded... preloaded borders, typical details, you name it. It's too much. Have a standards directory available for users to load content that isn't obvious. Sure 2x4 lighting fixtures, diffusers and receptacles and 120 and 277 volt panels are preloaded into the template, but not every VAV unit from every manufacturer.

BORDERS

I keep saying I'm never touching our borders again but, as I write this article, I'm making edits to my company's border. All I can say is this. Make them flexible, (Visibility parameters, different view title types things like that) but not to the point where you need a 5 page PDF of instructions that come with it. Use as many default parameters. I know you will probably need a shared parameters file but keep those parameters to a reasonable amount. The less you have to instruct people in the "simple stuff" the tighter your workflow is going to be. Especially if you are working with an outside client.

Just use one border for a project. If people are copying borders in a project stop them. There's no reason to do this. Make it flexible enough for each trade to use the same border.

PROJECT COORDINATION

OK, I'm going to vent here for a minute. If I get pulled into another project that went sideways, that was setup on the fly by parties unknown, with no project kickoff or coordination... I'm gonna lose it! Well, maybe not lose it but you get my point. Once the templates are tuned in, this part is almost secondary but it takes coordination from this point on. I would much rather have a BIM coordinator on a project that is actually working in the project every day. Someone who is looking out for the health of the data. OK, sorry that was a stupid analogy. Health of the data. I'm sounding like a salesman here. The idea is, we want someone who knows the building, knows the schedule, and at least knows the basic scope of work. I love being the BIM person on projects, some projects are

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better handled with a person that has a deeper knowledge of the specifics. Like I said, I don't want to get into BIM implementation, but this is where you would slide that in. Not every project needs it though. If you can sit down and just go over how it is being set up, you are much better off.

PROJECT SETUP

OK, here's how I like to do it. When it comes time to set up the project, I go to my templates to start new models. I have a separate template for Architecture, Interiors (when needed), Structure and Plumbing. Models I combine are Mechanical and Electrical. I put both trades into that one template. I know that model has more people in it and is a little harder to manage but the benefits (powering mechanical equipment being one) outweigh the extra maintenance. I also have a combined Life Safety template. All of my sprinkler, security and low voltage trades are in there. Not everybody likes doing it this way, but as a company we hashed it out and that's the standard. I use these templates to start every project regardless of the size or scope of work.

Once the models are created (either on a local server or BIM 360) I of course set up the worksharing. I have no standards for worksets so I use the defaults. If there's a project that would need

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an approach to where we would need worksets I allow it, but it's not our standard.

When it comes to linking models, the default is Internal Origin to Internal Origin. If it is deemed that we will be coordinating with site, I will ask for the Civil 3D model and acquire the shared coordinates from the site model and place the project on shared coordinates. If the project is on shared coordinates is should be determined before you put these models on BIM 360. You cannot publish coordinates to models that are on BIM 360. You need to either pull the models off BIM 360 or come up with a better strategy.

I link all trades into all models. I copy monitor the architectural levels from the architectural model and I copy monitor the structural grids from the structural model. From there I like to drag a plan view onto a sheet. If the default C&S view template works, I use it. Generally I have to modify it, then reapply it to my views.

PROJECT MAINTENANCE

Stuff gets messy. I don't like going into models and purging everything. Instead I encourage my team to maintain their models. Most do. If not I do it. Performing audits is never a bad idea. I also like to compact the central models every so often.

The one thing I generally tell people is to just think about if someone was coming into this project with no prior knowledge. Would they know what to do? This is where having good project management pays off!

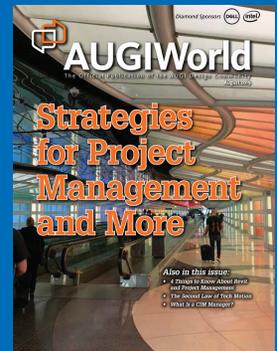
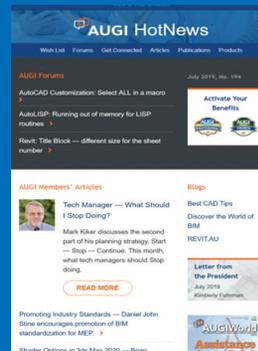


Eric Wing lives in Syracuse NY where he is the Director of BIM Services for C&S Companies. Eric is a popular speaker at events around the country speaking on many BIM-related topics. He has authored several books including Autodesk's official training guide for their BIM solution "Revit" called Revit 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. He 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.

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Autodesk Civil 3D – Simple Management Tips

As we all know, there is a ton of data to manage when it comes to Civil 3D. Not just data, but files, best practices, styles, folder structure, et cetera! At times it can be a bit overwhelming, especially if there has been no management over these items in the past. But for those looking to get a better handle on things, I have outlined several of the topics I would make sure to spend a bit more time getting up to speed on. There are obviously many more things that help in project management, but these are some of the things I see being underutilized.

MANAGING DATA IN PROSPECTOR

Did you know you can create folders within Prospector for things like alignment, surfaces and pipe networks? This can be extremely helpful when managing large projects.

Take surfaces for example. On large projects you probably end up with several surfaces that represent an overall finished grade surface, or several surfaces to build your existing ground surface.

This can get a bit messy and confusing at times, as shown below in a simple example. But right click on Surfaces and simply select NEW FOLDER to make your life easier!

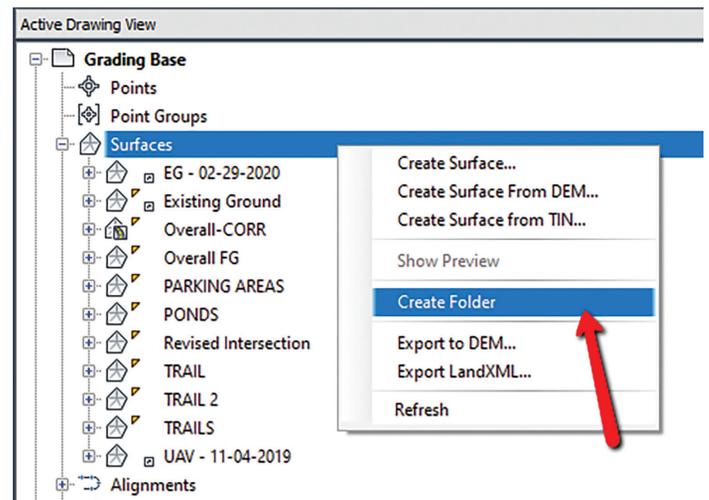


Figure 1

I typically leave two surfaces outside of the folders, one for my existing ground and one for my overall finished grade. Once you have created the folders, simply drag and drop your surfaces in the correct folder.

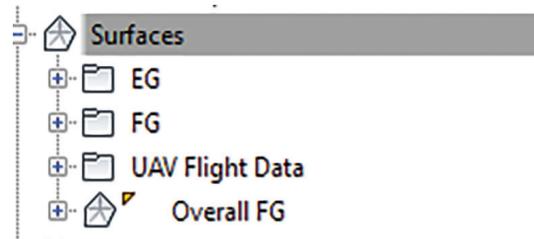


Figure 2

MANAGING DATA SHORTCUTS

Use them! This is a very overlooked, and often misunderstood function of Civil 3D. Even for simple projects, data shortcuts can really help production and speed up time to completion. But what do you do on these larger projects when you literally have hundreds of data shortcuts?!! Well... I think we are all still trying to figure out the best practices, but here are some tips I have found to be helpful.

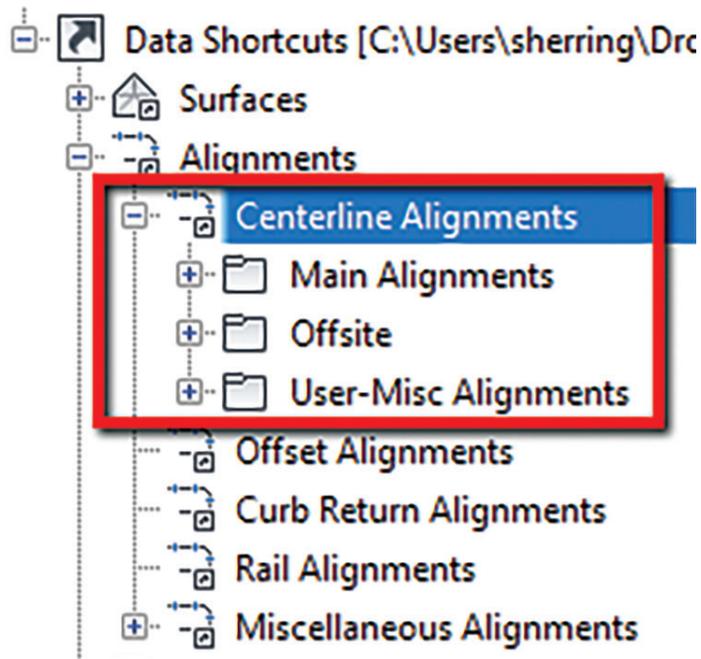


Figure 3

Tip 1: Just as we can create folders in the Prospector, as mentioned above, you can also do this for data shortcuts! Throughout a typical project, you have main alignments (i.e., road centerlines) but you also end up with misc. alignments (offsite utilities, cross section alignments, et cetera). I would create a couple folders within the folders in data shortcuts, one for "MAIN" alignments and one for "USER" alignments. This will make it easier for users to find exactly what they are looking for much quicker.

Tip 2: Did you know there is a Data Shortcut Manager? You can use this to replace drawing objects with shortcuts or repair broken references. This is helpful in managing multiple shortcuts at once. At times, the need to replace an associated shortcut may arise, this is the simplest way to handle that.

Tip 3: I did not know this until I saw something from the great Brian Hailey, but you can select

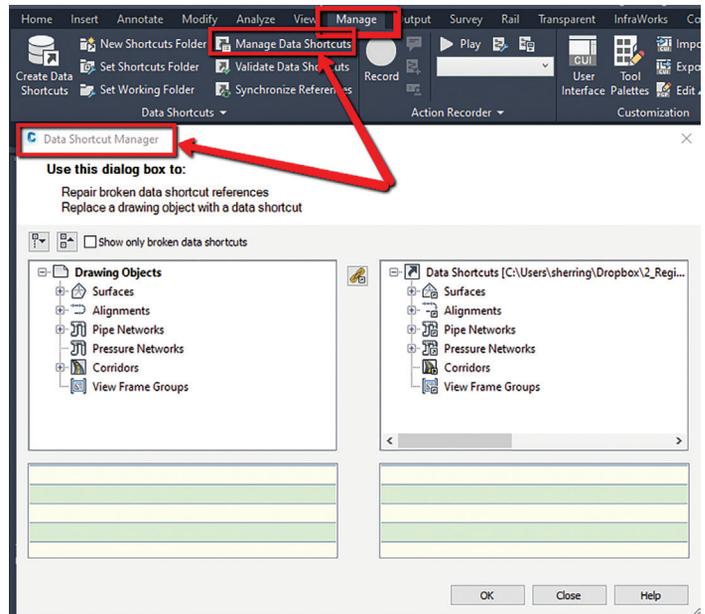


Figure 4

multiple shortcuts at once and either right click and "Create Reference" or drag and drop them on your screen to import them at once!!

Tip 4: I may not condone this one, but it is helpful!! I am not one to promote data shortcuts, but if you need to send out a Civil 3D file to someone, you can promote all shortcuts at one time! Talk about a time saver.

Go to the Manage tab of the ribbon, drop down the Data Shortcuts panel, and select Promote All Data Shortcuts.

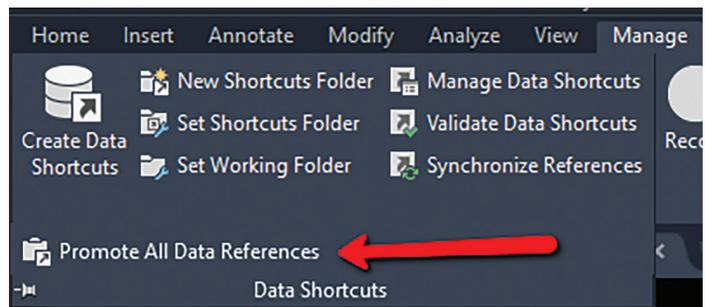


Figure 5

MANAGING PALETTES (SUBASSEMBLIES)

Let's be real, how many of us use 5-7 subassemblies for almost ALL subdivision roads!! OK, maybe it is just me? You have lanes, curbs, asphalt, sidewalk and end sections. Simple right? So why do we need 40 tabs on our palette, and constantly go through several to find what we want? Why change a curb &

gutter setting every single time you use it? I do that all the time and it drives me nuts! Adding the curb to a new palette and changing the properties once will save you a lot of time.

Creating a custom palette is super simple! Add individual assemblies, blocks, script routines, and much more. Palettes can be on your local machine, or preferably shared throughout the company on a server (or both)!

First, I would remove any palettes you never use. You can right click on the heading of your palette and go to Customize Palettes.

Now give this a shot. Right click on any tab of your Tool Palette and select New Palette and name your palette.

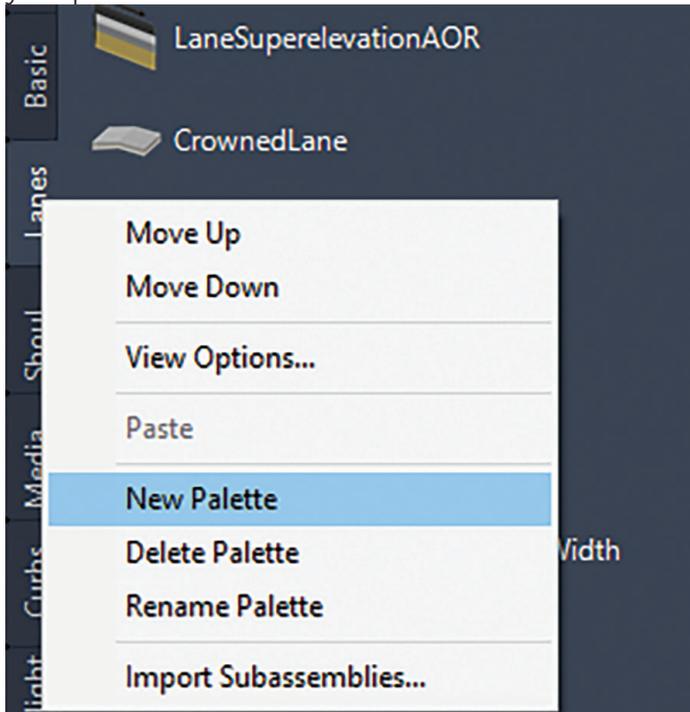


Figure 6

Then, for this example, we will add a few subassemblies to the palette. You can select any subassembly, right click, copy and paste it to your new palette. You can add things like text and line separators to help clean it up a bit (Figure 7)..

MANAGING STYLES

Maybe the toughest thing to manage overall? Who is in charge? Who can make template changes? Many companies are pretty relaxed on this, but many also have very strict CAD standards they have to adhere to (either self-imposed or client). Some



Figure 7

projects drag on for years, and how do you know that they are using the most updated standards?

How about referenced templates? This came out in circa-2017 (or 18). From the Manage tab of the ribbon, to the far right on the Styles panel, choose Reference.

This will allow you to add in your template, or multiple templates! See Figure 8.

When a user goes to edit a style, they will get this warning! This is a great way to manage styles as you will have one source file of styles to edit. See Figure 9.

Now, if only Autodesk would add in a pushback button where you can edit styles in a current drawing and push it to the master template!!

FILE MANAGEMENT / CLEANUP

Keeping files clean, clear of corruption and working smoothly throughout the project lifecycle is next to impossible with Civil 3D. And please... please let me know of any solutions you may have! Here are a few things I do to help manage file size and stability. Just type in some of these commands on those troubled files.

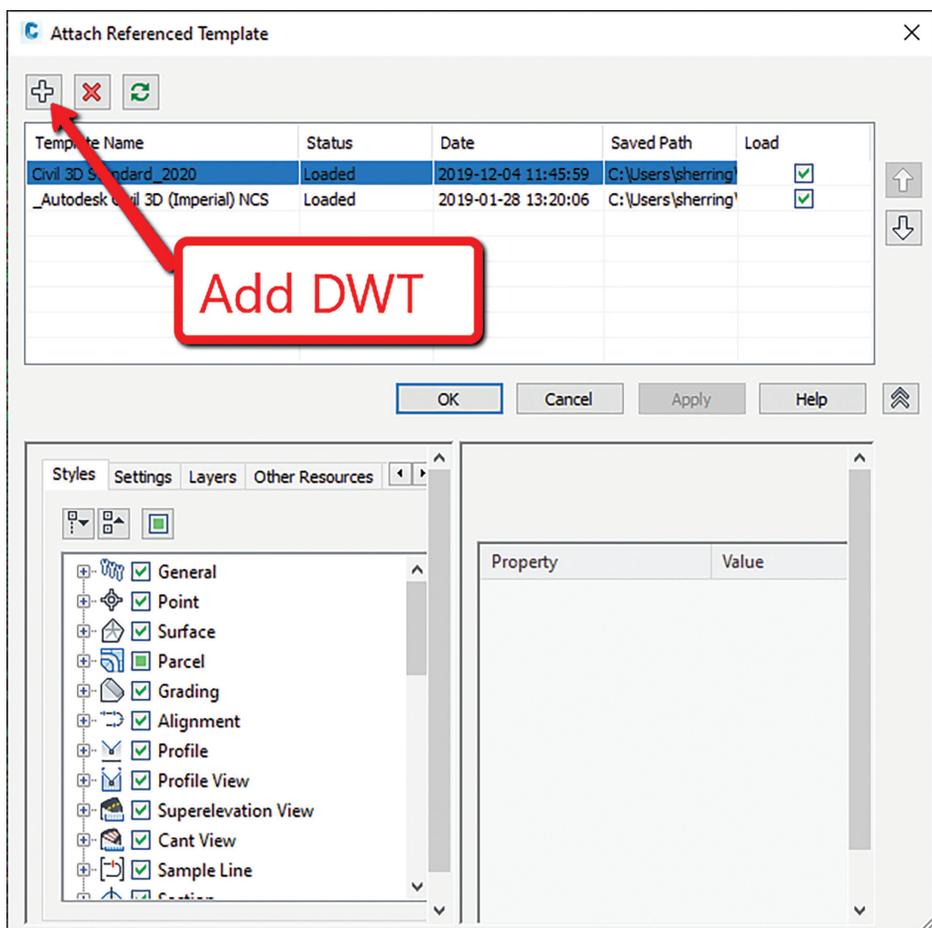


Figure 8

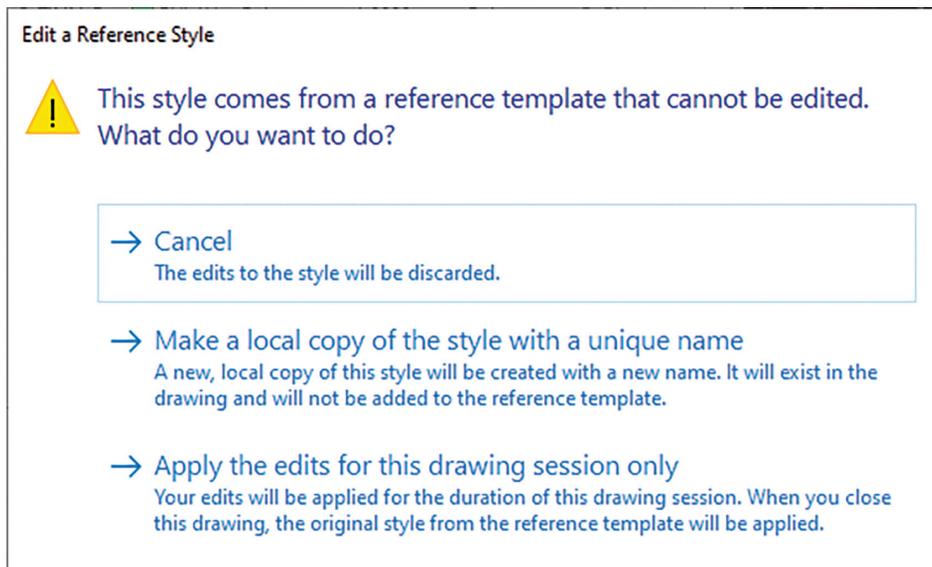


Figure 9

- PURGE (Regapps)
 - XREF CONTAMINATION - Purge them, save, close, and then reopen the DWG. Those REGAPPS will be back if they are in the xreffed file.
- PURGE
- OVERKILL
- WBLOCK
 - This is the number one way to really purge unused layers, blocks, REGAPPS, and any other funky junk that someone has done to that drawing. It will even remove bad settings that a user has changed! The Entire File option will take drawing layouts with it, which is great if you have a corrupt Sheet file.
- AUDIT
- RECOVER and RECOVERALL.
- MAPCLEAN
- Drawing Purge Add in
 - https://apps.autodesk.com/ACD/en/Detail/Index?id=3773138176974634673&appLang=en&os=Win32_64&autostar t=true
- LAYOUT TABS
 - Autodesk recommends no more than seven layout tabs per drawing. I recommend no more than 3-5. Technically, you can add 256...AND I HAVE SEEN THIS BEFORE! Most people on the forums say between 5-10 layouts are the max they will use.
- CIVIL 3D LABELS
 - Use data shortcuts and label live in the sheet files. Try not to label a really long profile, corridor, or large surface that spans multiple sheets. This can really slow down the

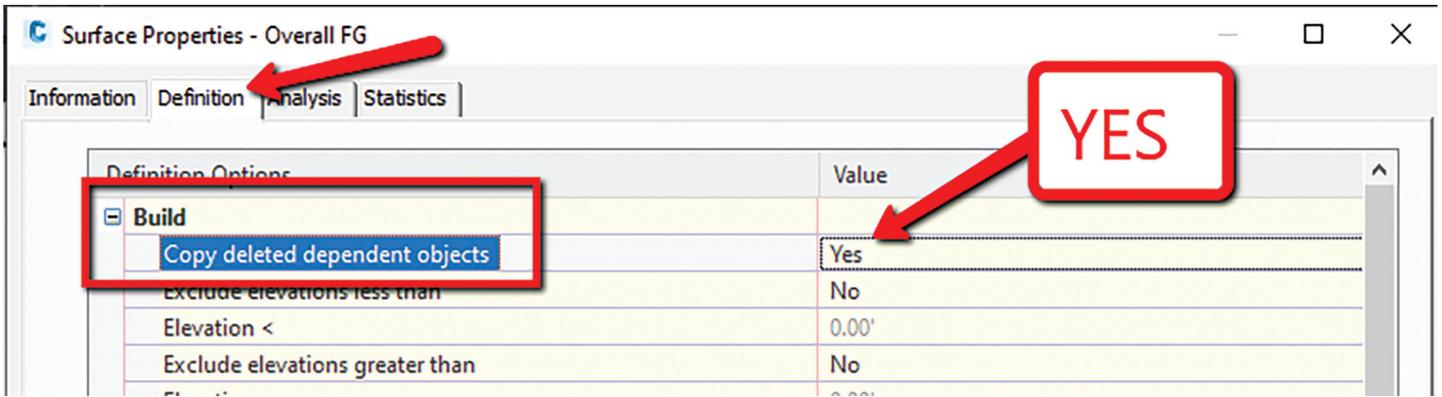


Figure 10

performance because AutoCAD and Civil 3D will process/cache every object whether you are viewing it or not. Also, use XCLIPS.

- TURN OFF THESE SETTINGS
 - Hardware Acceleration
 - Smooth Line
 - HPQUICKPREVIEW
 - Controls whether a hatch preview is displayed when specifying a hatch area.

MANAGING SURFACES (DXF/POINT CLOUD)

I see a lot of people struggling with creating surfaces from GIS data, specifically large datasets with a lot of contours. Users tend to import as polylines and add the polylines, with millions of vertices, to a surface and wonder why the slowdown or crashing happens.

Did you know that if you create a surface from contours (polylines) you can delete those polylines and keep that surface in place!! A CAD file with millions of vertices of a polyline can be very slow. Simply go into your surface properties, BEFORE YOU ERASE THE POLYLINES, and change the build definition as shown above! See Figure 10.

Problems with large surfaces? The term “large surface” applies to a surface with a number of points exceeding one million (generally, 1 million points for a grid surface or a snapshot of a TIN surface, and 2 million points for a TIN surface).

When you save files with large surfaces, you may have noticed Civil 3D create a .mms (TIN) or .grs (GRID) file that it stores in the same folder as your DWG. But within those large surfaces, do you really need 100 million points? Try something like simplifying your

surface in order to make the file, the surface and the external surface files smaller. I’ve seen many times where a simplification of the surface doesn’t lose its quality, and the .mms will be removed.

Note: Every time you move the drawing file to a different location, you must move the companion file to the same location. At times this causes issues, especially if users delete the .mms without understanding what it does.

CONCLUSION

Create a plan and stick to it! All the management best practices in the world will not help if it’s not documented, reviewed regular and most importantly ENFORCED!

Other items such as sheet set manager, file organization and best practices can be documented easily in some sort of a CAD Manager handbook. Monthly, or quarterly, meetings to review best practices and even items such as template changes are also a good idea. If I only followed half of the stuff I mentioned above I would be in much better shape!!

Thanks for reading.



Shawn has been a part of the design engineering community for roughly 15 years in all aspects of design, construction and software implementations. He has implemented and trained companies across the Country on Civil 3D and other infrastructure tools and their best practice workflows. Shawn can be reached for comments or questions at sherring@prosoftnet.com.



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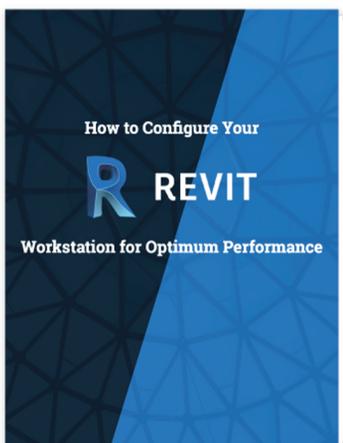
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