PiVDC

Automation tools to revolutionize your BIM workflows

30+ years

pivdc.com

VDC

Mission

Help the AEC industry optimize resources, cost and quality through innovative use of technology for:

- Sustainable and efficient design
- Collaborative pre-construction planning
- Agile construction process
- Reliable facility management

Vision

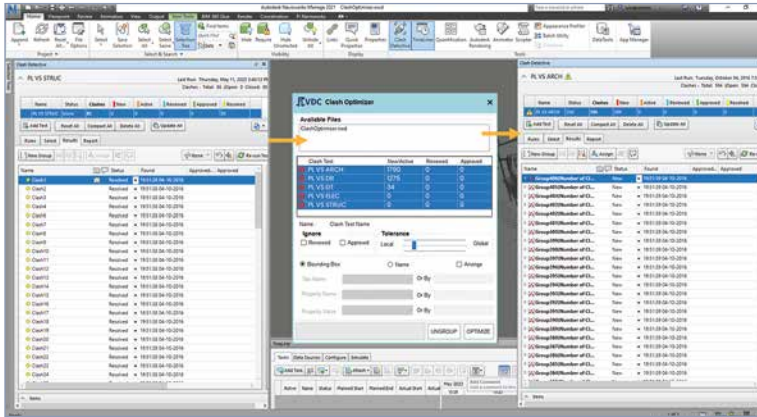Lead the global AEC industry to certainty and efficiency using technology.

Associations:

Our Values

E **Excellence**
We take pride in our passion for excellence. It is a way of life for us.

A **Agility**
We are always at the edge of technology and driven by agile transformations.

R **Reliability**
We have ISO-certified processes and workflow to produce consistent and reliable performance.

T **Teamwork**
Pinnacle provides an environment where teams collaborate effectively to excel.

H **Honesty**
We win the trust of our stakeholders through integrity, straightforwardness, and transparency.

PiVDC - Empowering AEC Professionals with Automation

PiVDC Automation in Navisworks - Clash Optimization

PiVDC is a suite of automation tools and technologies that emerged from the collaboration of 2,600+ in-house BIM engineers and the R&D wing of Pinnacle Infotech Solutions to solve the challenges BIM Engineers and Architects face every day.

Here's how we help —

Our products help virtual design and construction (VDC) professionals reach their goals faster by incorporating automation throughout the VDC lifecycle, including —

- *Modeling*
- *Prefabrication*
- *Quality Checking*
- *Coordination*
- *Shop Drawing*

Benefits of PiVDC

- Save time & increase productivity
- Help in code compliance
- Eliminate error & repetition
- Help in standardization & consistency
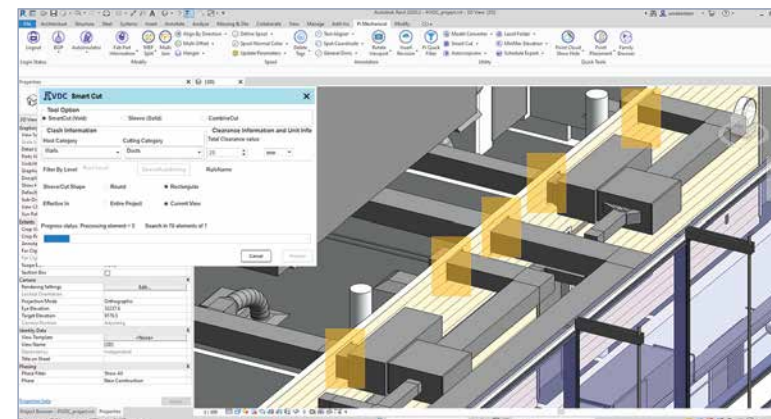- Improve quality

- ✓ **150+ add-ins**
- ✓ **18-25% project hours saving**
- ✓ **15-30% productivity increase**
- ✓ **Used in 3,600+ projects in 40+ countries**

Our Products

We provide automation add-ins for Revit, Navisworks Manage, and Plant 3D versions 2019-2024, consolidated in these comprehensive packages.

Our Packages —

1. **Pi Dock** *Free*
3. **Pi Electrical**
5. **Pi Plant 3D**
2. **Pi Mechanical**
4. **Pi Navisworks**

PiVDC Automation in Revit - Smart Cut

Get a free demo: https://www.pivdc.com/requestdemo/

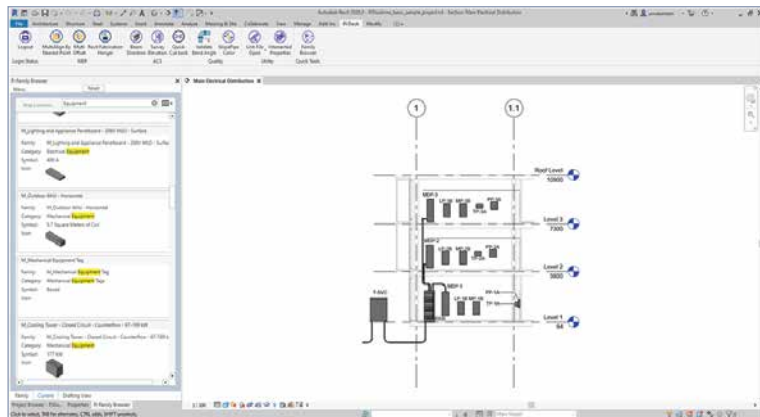pivdc.com | Construct Certainty, with Technology

1. Pi Dock *Free*

Free add-ins to speed up almost all your projects. Content management & utility to quality checking, Pi Dock has got you covered.

- Quickly align and offset MEP elements
- Experience accelerated and accurate hanger placement
- Check beam direction, control cut-back value, and more in a matter of minutes
- Maintain standard bend angles and pipe slopes without any hassle
- Browse family folders, get file locations, and inject properties efficiently
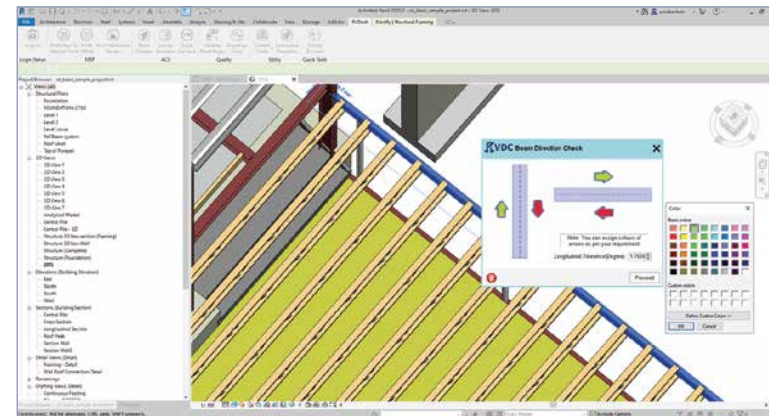
1.1 Content Management

Finding the required family and related content in the sea of files and folders can take up a lot of your valuable time during large, complicated projects. However, with our Family Browser tool, you can find and manage Revit content in seconds. With the keyword search, Filter by family name, category, type, material, and many more user-friendly features, you will say goodbye to wasting time inspecting thousands of folders.

Content Management - Find families and manage related content effortlessly

1.2 Quality Checking

Pi Dock's quality-checking features, like the Beam Direction Checker, ensure the correct beam frame even in complex projects. All you have to do is set your project-based rules, and the tool highlights the beams that do not match your rule.
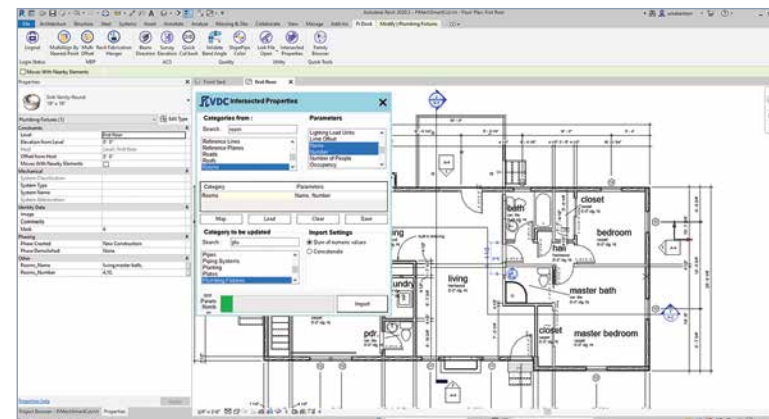

Quality Checking - Maintain the correct beam frame without any hassle

1.3 Utility

Nobody likes looking for Revit project files when you have thousands of hangers to place in the model. Let our automated utility tools take care of such tasks and utilize your time in more critical aspects of the project. Use our File Location tools and get the path of the local folder, central folder, and the linked file in a click or two.

- Get local, central, and link file locations in seconds
- Easily identify host file through point cloud visibility management
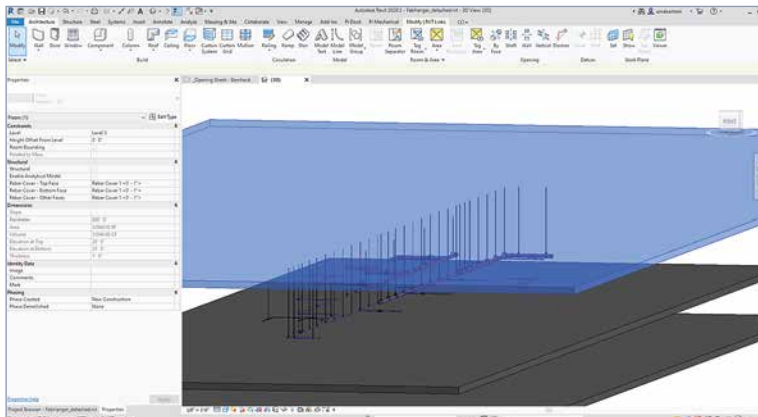- Quickly import element properties from one category to another

Utility - Automatically import room-wise element properties

2. Pi Mechanical

A set of 70+ add-ins for automation at every step of your mechanical project operation, compatible with Revit 2019-2024 versions.
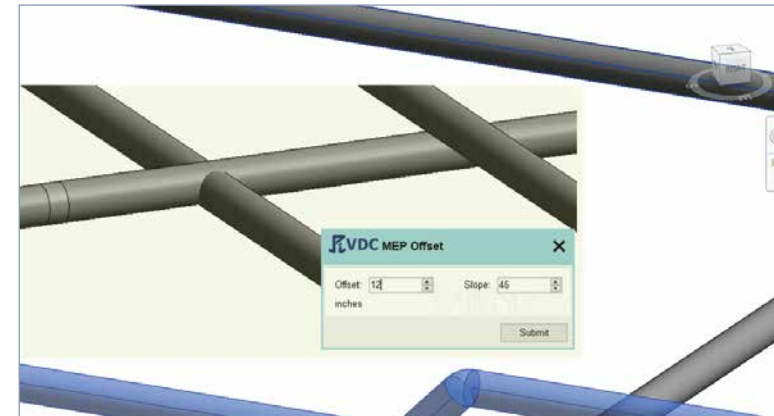
- Automated element splitting, pipe drawing, insulation, and more to revolutionize your modeling workflow
- Pipe and duct aligning, offsetting, and standard spacing, among others to make coordination smoother and more efficient
- Automated dimensioning, text alignment, and other features for clear and aesthetic shop drawings
- Quick spool sheet generation, point placement, and more for accurate prefabrication

Pi Mechanical - Automatic hanger placement and more
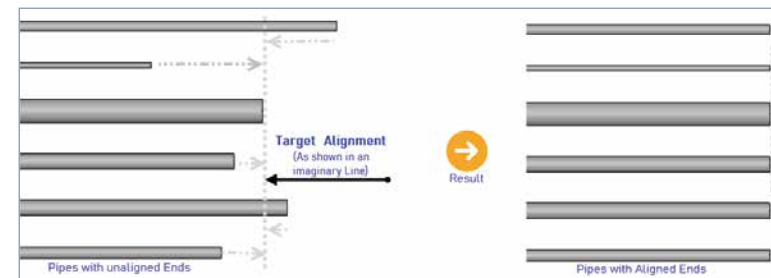
2.1 Model Modification

With automation add-ins such as Pipe on Rack, spacing tool, and more, Pi Mechanical saves you from spending countless hours drawing pipes manually and maintaining a standard space while modeling in Revit. It automates repetitive manual tasks, making your modeling efficient, quick, and accurate.

MEP Offset - Offsetting multiple pipes & ducts at different or same elevation
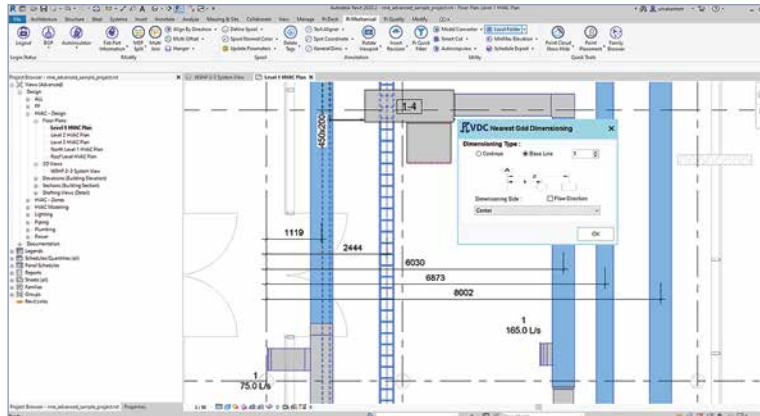
2.2 Coordination

A large mechanical project can have thousands of pipes and ducts, and coordinating them can be daunting. But Pi Mechanical's alignment and offset tools, among others, to keep standard angles of pipes and ducts, set the path to easy and seamless coordination.

Coordination - Aligning multiple elements simultaneously by a point or direction

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Pi Mechanical cont.
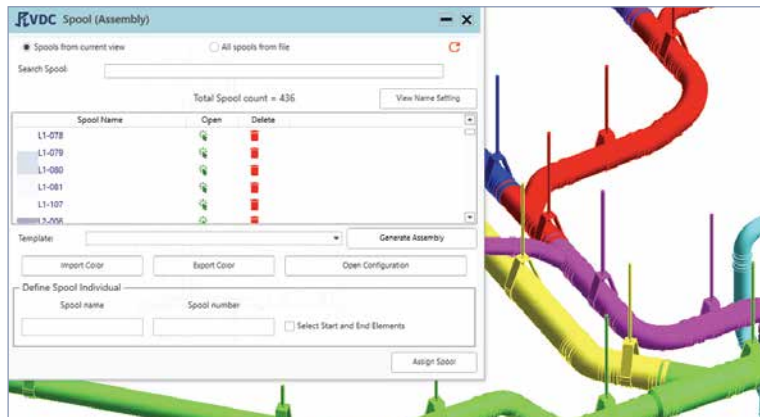
2.3 Shop Drawing & Annotation

Pi Mechanical tools provide accurate dimensions for pipes and ducts, reducing errors in your shop drawings. On top of that, the package offers text alignment, tag placement, and other features to improve the clarity of your shop drawings, promoting smoother fabrication.

Annotation - Generating the dimensions automatically as per user selection

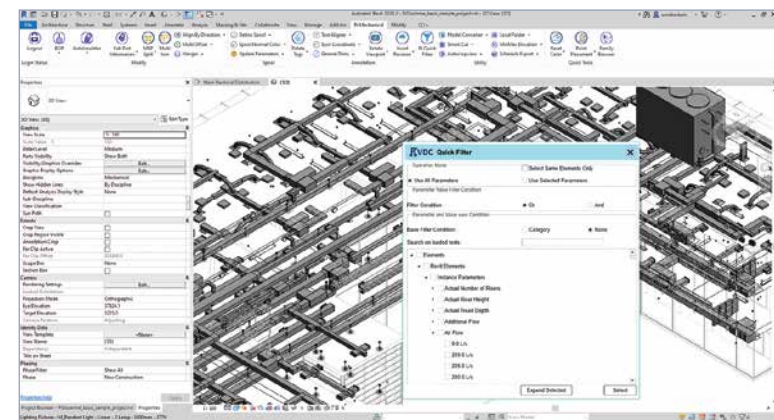## 2.4 Prefabrication & Spooling

We automate spool defining, updating parameters in a new sheet, and detailing tasks throughout your spooling workflow. Our PiMechanical package has add-ins to automate even the most time-intensive tasks, such as generating individual sheets, data population, and more, to make your prefabrication projects easier.

Spooling - Automatically generating spool sheet, assembly, and more

2.5 Data Management & Filter

With Pi Mechanical add-ins, you can quickly filter elements, locate files and folders, get a 3D view of specific sections of a model, populate parameter values in elements, and many more to speed up and streamline your mechanical project workflow.
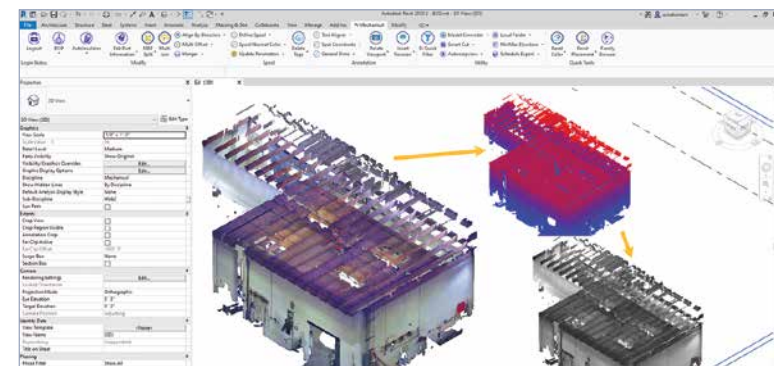

Element Filter - Quickly select elements based on parameter values

2.6 Point Cloud & Sequencing

Extracting data for prefabrication in a complex mechanical project with thousands of elements can be overwhelming and extremely time-taking. However, our Pi Mechanical add-ins make it all easier for you.

- Group elements of the same parameters and quickly extract data
- Easily identify the host model and manage point cloud visibility
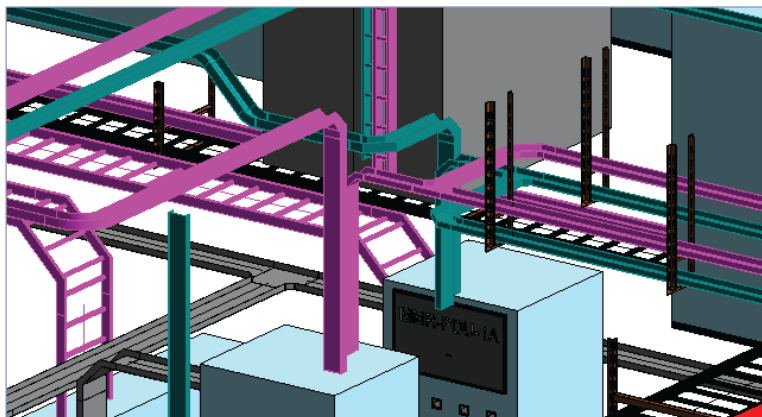- Sequence elements for convenient and smooth operations

Point Cloud - Easily manage point cloud visibility

3. Pi Electrical

A dynamic collection of 80+ software modules, compatible with Revit 2019-2024, that revolutionize every step of your electrical workflow
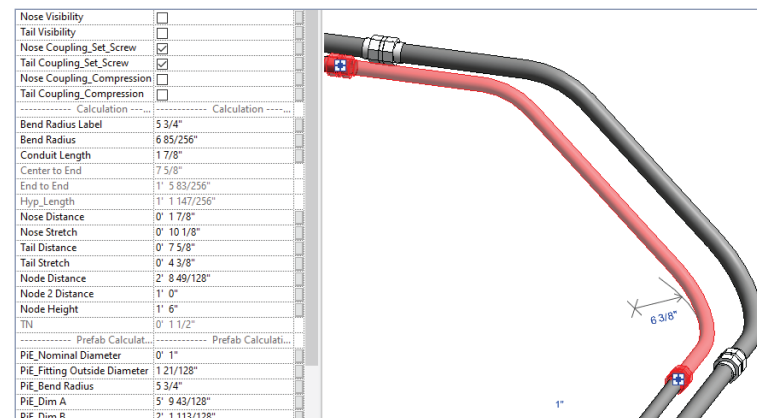
- Smart bend families to ease coordination, gather prefabrication data, cut installation time, and more
- Automated element splitting and conduit drawing to speed up your modeling workflow
- Conduit and cable tray aligning, offsetting, and standard spacing to make coordination smoother and more efficient
- Automated dimensioning and text alignment for clear and aesthetic shop drawings
- Automated BOM/BOQ report generation and quick point placement for accurate prefabrication

Nose Visibility	☐
Tail Visibility	☐
Nose Coupling_Set_Screw	☑
Tail Coupling_Set_Screw	☑
Nose Coupling_Compression	☐
Tail Coupling_Compression	☐
---------- Calculation ---...	----------- Calculation ----...
Bend Radius Label	5 3/4"
Bend Radius	6 85/256"
Conduit Length	1 7/8"
Center to End	7 5/8"
End to End	1' 5 83/256"
Hyp_Length	1' 1 147/256"
Nose Distance	0' 1 7/8"
Nose Stretch	0' 10 1/8"
Tail Distance	0' 7 5/8"
Tail Stretch	0' 4 3/8"
Node Distance	2' 8 49/128"
Node 2 Distance	1' 0"
Node Height	1' 6"
TN	0' 1 1/2"
------------ Prefab Calculat...	------------ Prefab Calculati...
PiE_Nominal Diameter	0' 1"
PiE_Fitting Outside Diameter	1 21/128"
PiE_Bend Radius	5 3/4"
PiE_Dim A	5' 9 43/128"
PiE_Dim B	2' 1 113/128"

Smart Bend - Connecting conduit or set of conduits using minimum connection points

Automation for Electrical Projects

3.1 Smart Bend & Modeling

Electrical modeling is a critical task. Routing multiple conduits and cable trays in accordance with project specifications may feel like a spider web. And our add-ins help you solve the tangle. Our smart bend technology lets you connect conduits and racks at different elevations in just a few clicks while modeling. With our tools to automate conduit drawing, routing, spacing, and many more, your electrical modeling will soar in efficiency.

3.2 Coordination

Tackle the challenges of coordinating thousands of conduits effortlessly with Pi Electrical. Our tools let you automatically add or edit clearance around cable trays, align conduits, place rolling offset, kick bend, and other smart bend families, avoiding clashes and leading to seamless coordination.
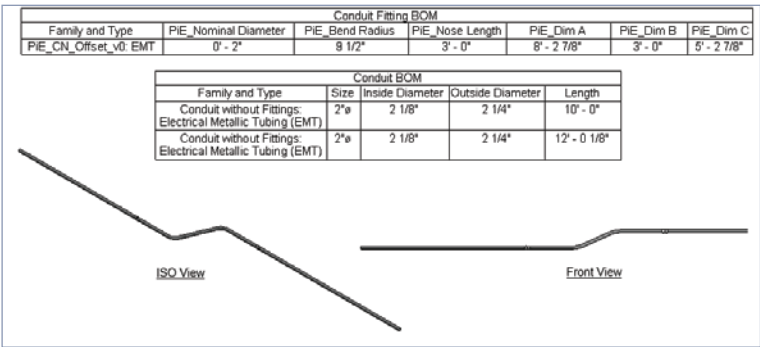
- Place bends and offsets in minimal steps
- Simultaneously add/edit the clearance of multiple cable trays
- Accurately place fittings for quick constructability review

Coordination - Avoiding clash by using a rolling offset

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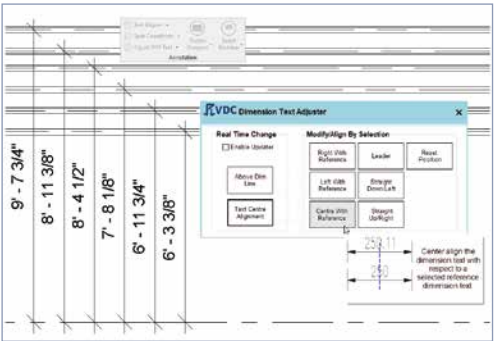
3.3 Prefabrication & Spooling

As prefabrication becomes increasingly common in the construction industry, efficient spool drawing becomes more crucial. Our Pi Electrical tools let you seamlessly organize spool drawing sheets based on installation orders to avoid delays and costly idle time. Our Packaging and Export tool automates the process, creating PDF files and binders with ease. Plus, our smart bend families come with already-loaded parameters to make your prefabrication easier.

Prefabrication - Extracting fabrication data for BOM
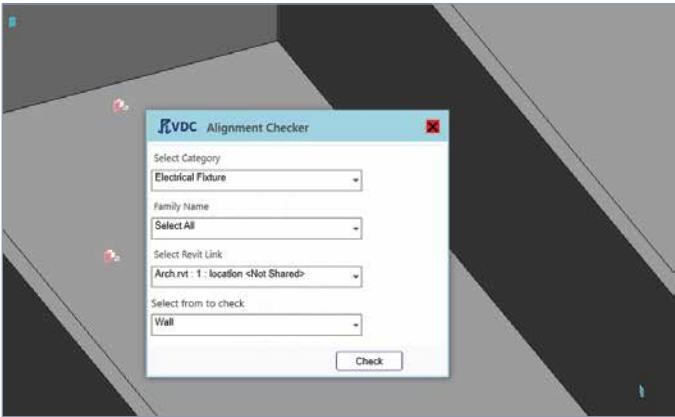
3.4 Shop Drawing & Annotation

Unclear shop drawings can lead to extended installation time, material wastage, increased cost, and even hazards on the site. It is highly crucial for the shop drawings to follow project standards. And our Pi Electrical tools help you achieve exactly the same. Our dimensioning tools enhance your shop drawing's quality and aesthetics, while text formatting, sheet cloning, and other annotation tools keep you in compliance with the project standards.

Annotation - Automatically arranging dimension texts
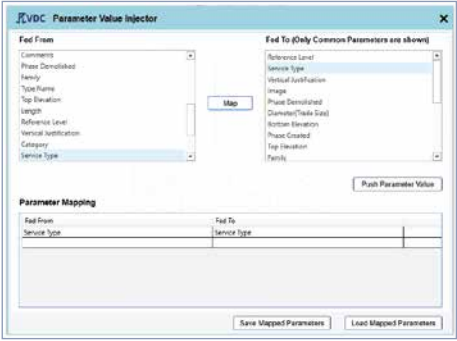
3.5 Quality Checking

Experience unmatched precision in your electrical projects with the PiVDC Electrical package. In a few clicks, our tools let you make sure that all the bends have the permitted angle, assuring standardization and eliminating manual checking. Moreover, our add-ins also simplify conduit bend angle validation and ensure compliance with project standards.

Quality Checking - Keeping a tab on fixtures' alignment

3.6 Parameter Management

As crucial as updating parameter values is for providing annotations and modifying elements' specifications, there's no denying that it's a long, repetitive, and tedious job. However, our Pi Electrical add-ins automate the process, enabling you to update the values of multiple parameters in a few clicks. Our tools also let you map and edit the parameters of various connected networks simultaneously, making annotations easy and efficient.
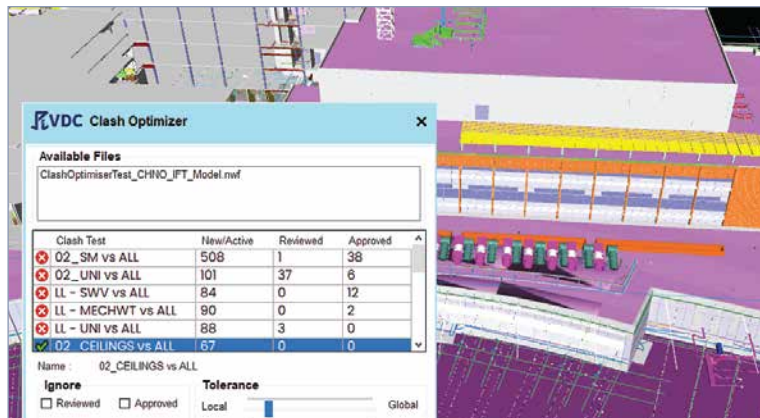

Parameter - Update values from source to destination parameters

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4. Pi Navisworks

A comprehensive set of precisely curated automated add-ins to get the most out of coordination
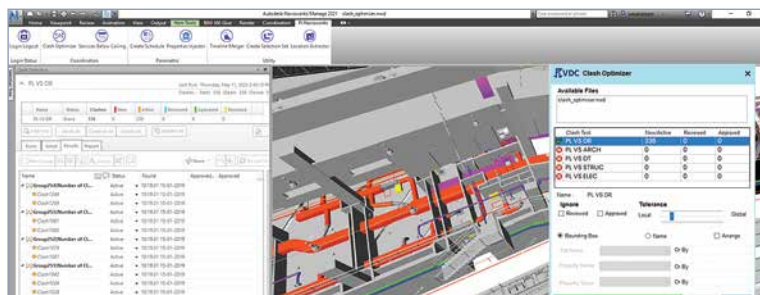
- Improved clash coordination with automated clash optimization
- Merge timelines for enhanced collaboration during 4D simulation
- Import and export Revit schedules in a jiffy for hassle-free coordination

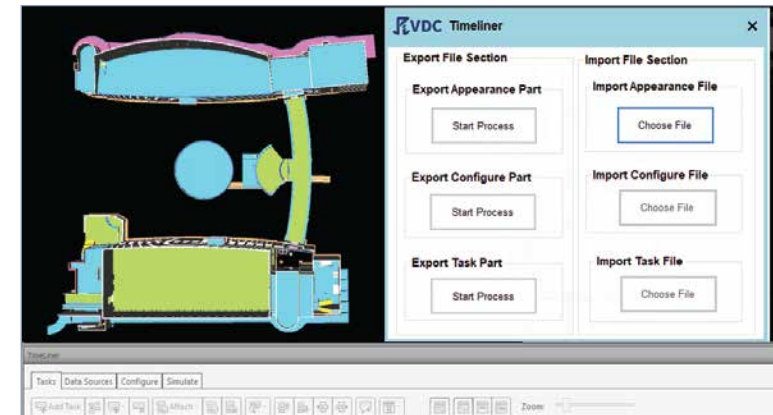*Pi Navisworks - Automatic clash optimization and more*

4.1 Clash Coordination

Clash coordination in Navisworks can be complex and confusing as Navisworks detects the same clash from different views, significantly increasing the number of clashes. With our add-ins, including Clash Optimizer and Services Below Ceiling, you can automatically group similar clashes and identify air terminals, lighting fixtures, and other services running below the ceiling, streamlining coordination.

Clash Optimizer - Group similar clashes to streamline coordination
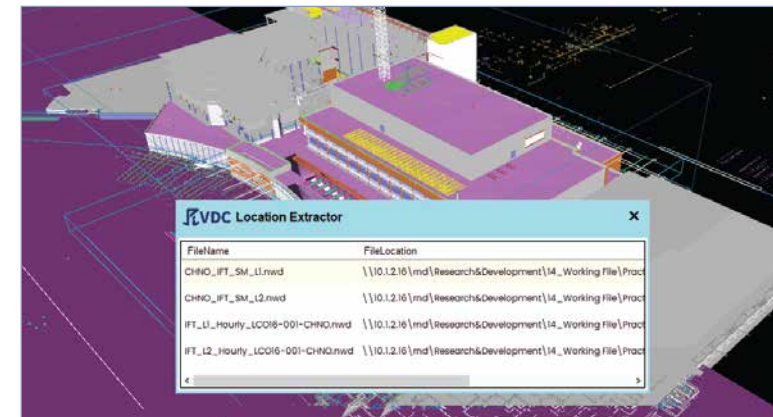
4.2 4D Simulation

Maximize the value of 4D simulation in Navisworks with automated timeline merging. Our tools let you automatically export tasks and timelines from multiple project files and import them to a master file, making simulation simpler and quicker.

Timeline Merger - Consolidate multiple timelines in a merged file for smooth collaboration

4.3 Utility

With our Utility tools, you can say goodbye to manual coordination and hello to a smoother workflow. Our add-ins enable you to automatically create Revit schedules, inject custom properties to elements, find file locations, and more, saving time and increasing efficiency.

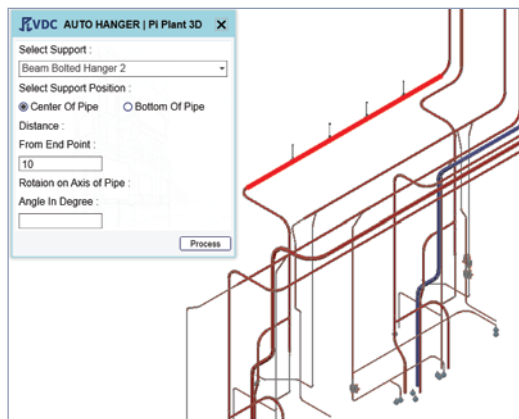*Location Extractor - Quickly find the exact file location & name in Navisworks*

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5. Pi Plant 3D

A set of 15+ automation add-ins to help you glide through your AutoCAD Plant 3D projects, compatible with Plant 3D 2019-2024 versions.
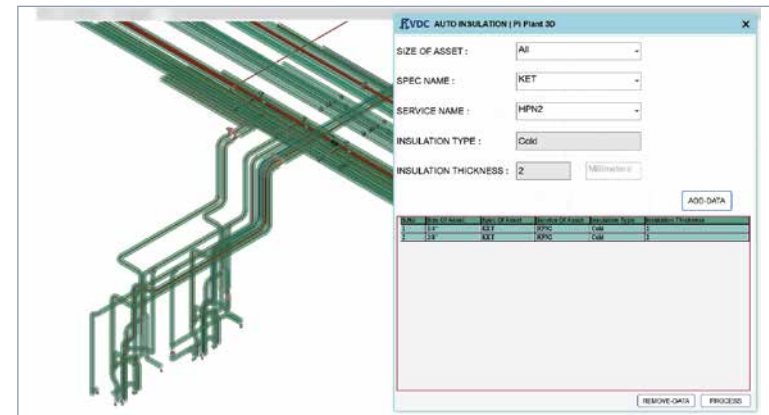
- Automated pipe alignment, extension, insulation, and more for seamless modeling and coordination
- Practical annotation tools to facilitate the aesthetic arrangement of tags in Orthographic drawings
- Features to export piping and spool data for efficient documentation
- Quality check tools to ensure optimal slope pipes, insulation, and more
- Quick and streamlined element filtration based on their property values

Simplifying process piping with automation

5.1 Modeling & Coordination

Modeling and coordinating industrial pipes take undivided attention and dedication, as a minor miss can translate to costly consequences. Manually placing hangers, connecting supports, insulating and aligning pipes, among other repetitive tasks, leave room for human errors. With our Plant 3D package, you can leave these worries to automation. Our tools automatically place hangers, maintain the distance between the fittings and hangers, align multiple pipes simultaneously, and more, simplifying the process and increasing efficiency.
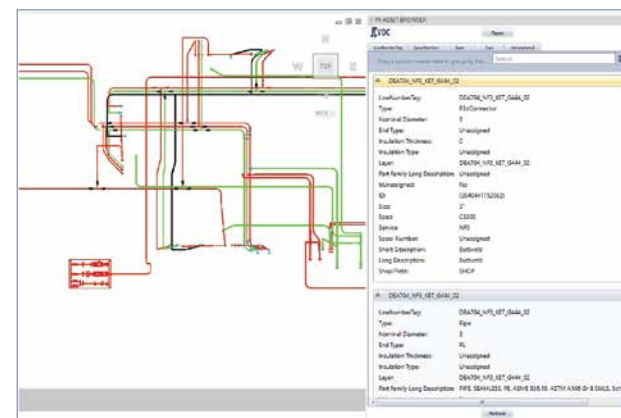

Modeling - Automatically insulating industrial pipes

5.2 Asset Management

Effortlessly navigate through Plant 3D drawings and search for specific assets. With Pi Plant 3D's Asset Browser, you can get rid of the tedious manual work of hovering over each element to locate assets. Our tool enables you to filter and group elements based on their property values, making it easier to manage assets.

- Quickly filter out elements based on different parameters
- Group elements according to various categories
- Easily search elements with keywords and parameter values
- Select and replace accessories with similar properties in a few clicks
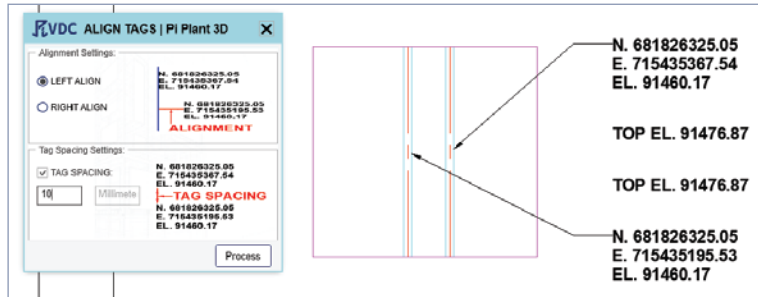

Asset Management - Quickly searching and grouping assets

Pi Plant 3D cont.

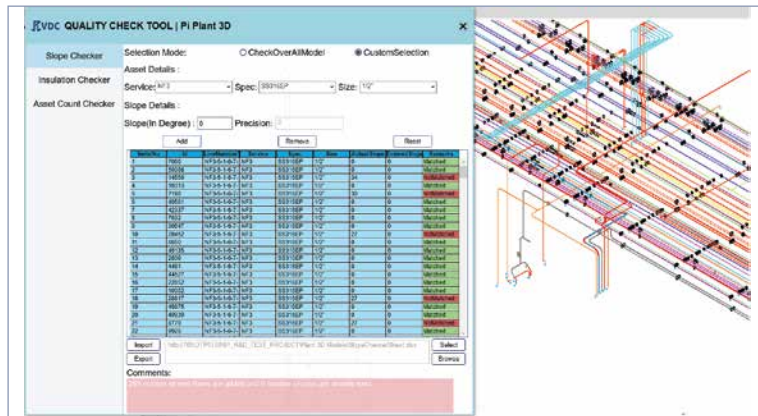## 5.3 Annotation & Shop Drawing

Ensure the quality and aesthetic of your orthographic drawings with our annotation tools. Our align tag feature lets you quickly align and arrange multiple ortho tags simultaneously, enhancing the clarity of your shop drawings. Moreover, our automatic leader placement tool saves you from spending hours trying to figure out the elements associated with tags.

Annotation - Arranging ortho tags accurately and swiftly
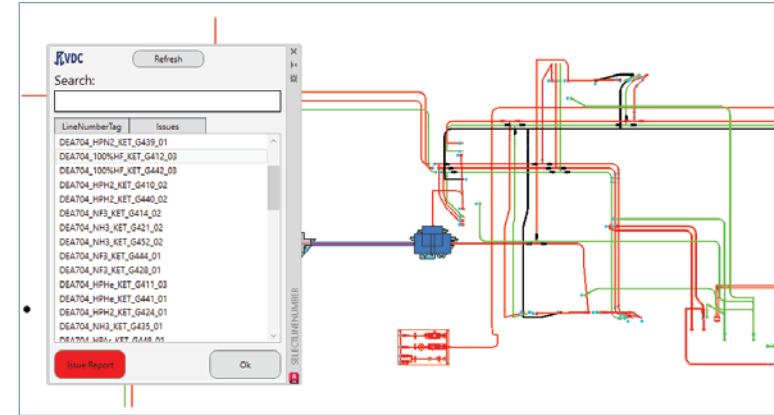
5.4 Quality Checking

Elevate the quality and performance of your industrial projects with Pi Plant 3D's quality check features. Our tools ensure precision in pipe slopes by identifying any deviations from specified requirements, set the seal on top-notch assets insulation, and verify the count of fittings or items in specific line number tags, making sure your project meets the highest standards. They also enable you to customize the specifications of services and get the required quantity of asset/slope/insulation.

Quality Checking - Checking slope, insulation thickness, and asset count

5.5 Report Generation

Experience effortless data export for swift and easy report generation. Our Plant 3D tools let you quickly order and renumber welds and export weld coordinates and names to an Excel sheet for seamless material order and cost estimation. We also have features that allow piping and spool data export, including piping length, nominal diameter, line number tags, spool number, count, etc., in a few clicks, providing invaluable information for hassle-free and accurate report generation.

Report Generation - Exporting weld names and coordinates to excel

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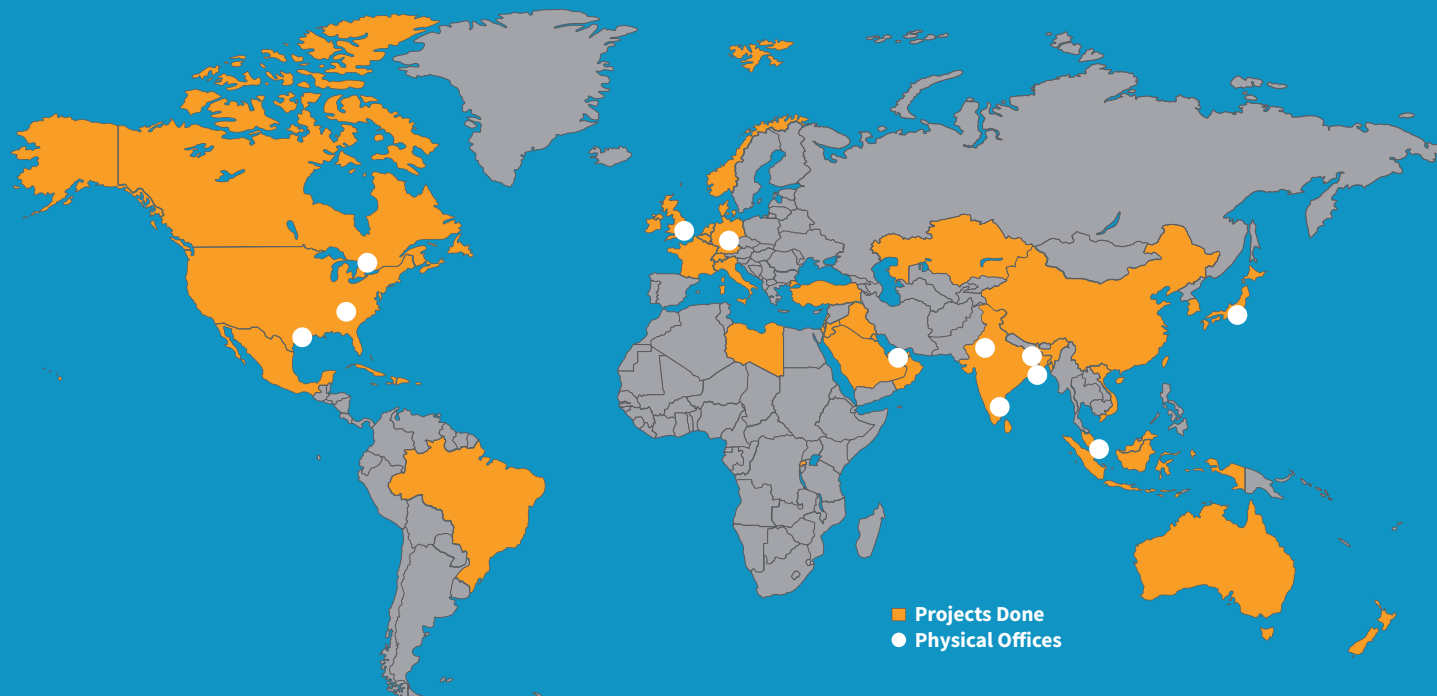Email: info@pinnacleinfotech.com

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