nCircle™

nfinite possibilities

6 TRENDING Scan to BIM SOFTWARES

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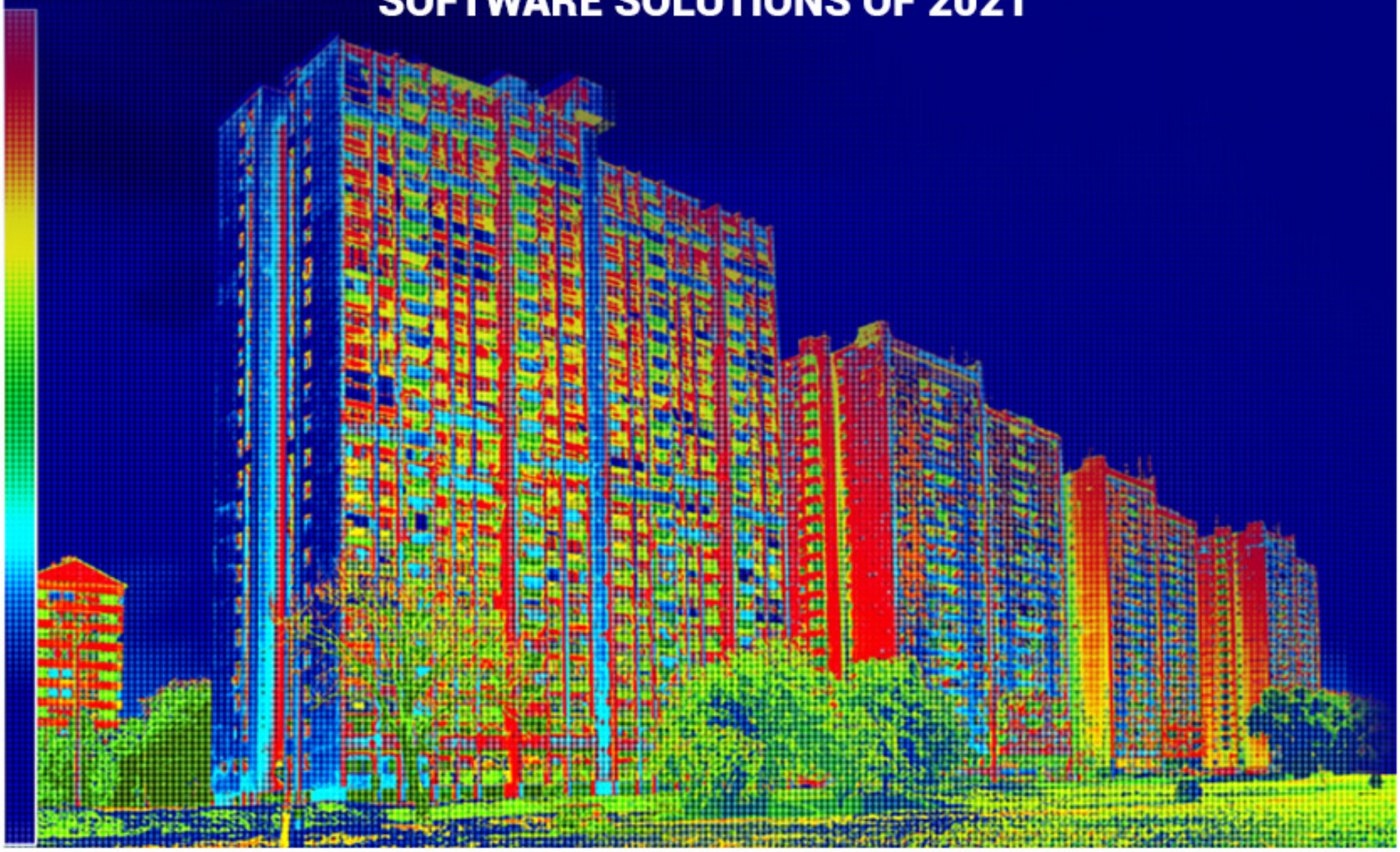
Automating your Scan to BIM Workflow with

6 BEST SCAN TO BIM

SOFTWARE SOLUTIONS OF 2021



Increasing number of renovations and extension projects are using the scan to BIM process for 3D visualization, 3D model creation, and animation. Scan to BIM modeling involves the technique of generating a digital representation of a building condition or structure with all its physical characteristics. Laser scanners are used to scan specific elements of a construction site. The scan data is then introduced into a 3D modeling environment to create either accurate as-built models or to familiarize the design with real-world conditions. Is the process as simple as it appears? Let's learn in detail.

In a Scan to BIM process after getting the scanned (point cloud) data, it is imported into a 3D modeling environment to build an accurate as-built model or to inform the design with the actual conditions. Different scan to BIM programs have distinct workflows for developing BIM models from scan data.

Automating the scan to BIM process has been the utmost goal for AEC industry. In advent of ML innovation, nCircle tech utilises its ML expertise to automate the process by reducing the manual interventions as much as possible.

HOW ARE WE AUTOMATING PROCESS WITH

ML-Powered Scan to BIM Solutions?

The Scan to BIM solution from nCircle Tech uses machine learning to help clients automatically retrieve several entities from point clouds using ML-powered framework that greatly decreases the cognitive burden necessary for modeling. We process the scanned data using the ML-based scan to BIM framework, at the interim phase of loading the 3D point cloud model into a BIM software, Our machine learning-based scan to BIM identifies and classifies distinct items in scanned data, assigning various colours as distinguishable feature and classifies respective entity into its respective category. The objective of Machine learning-based process is to help in auto Classification and Segmentation of entities from input point clouds.

HIGH LEVEL IMPLEMENTATION APPROACH

Input Point Cloud Data

- Already generated point cloud data from our clients

Auto Segmentation of Point Cloud Objects

- Objects get classified with different color codes with the help of smart machine learning Scan-to-BIM algorithm.

Automatic BIM Model Generation

. BIM Model generation requiring less human involvement

WHY OPT FOR OUR
ML-Powered Scan to BIM?

The basic idea is to save up modeling time. Our Machine Learning-Based scan to BIM can save up to 50% of the modeling time. Designers, BIM Modelers who are tired of investing much time in modeling work can reap all the advantages of using our ML-powered Scan to BIM process for faster and more accurate modeling. Our solution promotes the segregation of BIM objects using machine learning and automates the whole process with a lesser amount of old-fashioned manual work.

The main limitation of the existing scan to BIM software is usually a significant amount of time to import point cloud data into a 3D modeling environment. Our scan to BIM solution reduces the time needed for processing scanned data. As the point cloud data is 10 times larger than the size of the BIM model, it becomes tough for modelers to deal with such a large amount of data. Our Machine Learning based scan to BIM process helps modelers to deal with such a huge amount of data by automatically classifying objects and then color-codes those for easier conversion.

BENEFITS OF
MACHINE LEARNING-POWERED SCAN TO BIM SOLUTION

- ML-based algorithm extracts feature from Point cloud data, making the Scan to BIM process faster by 50%
- It's a web based solutions thats is compatible with all available BIM software
- No third party UI is required
- Auto-segmentation of Data is Done using the power of ML
- Minimum human intervention only at Modelling level
- ML segmentation reduces point cloud data size by 10 folds
- Segmentation produces multiple separate entities for modeller to work on individual models
- Hustle of navigating through heavy point cloud is reduced
- Auto removal of unwanted entities so as to focus on desired BIM entities
- Everything happens on Server/Cloud
- Mobile Device Processing Supported for Segmentation
- Our solution acts as a new member in the Modeling team. Takes time to learn you models but gives 24x7 output forever.

Apart from our ML based ScantoBIM.ai solution, there are many software solutions assisting in automating scantoBIM modelling. Here's a list of some of the top Scan to BIM Softwares available in the market.

EDGEWISE

EdgeWise is an as-built modeling platform that utilizes advanced algorithms to automate tiresome scan-to-BIM workflows. It creates as-built pipes, ducts, walls, structural elements, conduit, and cable trays from point clouds significantly faster than conventional manual modeling techniques—all while enhancing the accuracy of the model.

BENEFITS OF USING EDGEWISE

- Significantly Decrease As-Built Modeling Time
- Guaranteed Efficiency with Robust QA/QC Tools
- Complete Downstream Quick Design work
- Can be integrated with Autodesk® Revit® & Other Design Software

FARO AS BUILT

The FARO As-Built Software solutions enable architects and engineers to efficiently create building designs depending on accurate as-built data that are fully compatible with available CAD and BIM frameworks. The as-Built model reduces the time for data extraction from scanned data and gets the job done right on time.

Benefits of Using Faro as Built

- Guarantee Better Deliverables: Build your design based on precise, comprehensive, and anytime-available as-built data to guarantee that the design will work.

- Work with Existing Software: Use as-built data instantly with your current CAD and BIM systems. Verified data exchange interfaces and plug-ins for your design systems assure the highest model compatibility.

- Helps to Keep Budget and Schedules on Track: Boost productivity with a quicker design process using simple, and automated tools to transfer as-built data into your design systems.

- Get More Transparency in the Process: Cover your final design with a virtual image of the as-built conditions to either verify that the design will fit or examine your design options, resulting in better choices.

- Guarantee Return on Investment: Maximizes productivity while saving time and effort by limiting recurring visits to the sites.

Leica CloudWorx

Leica CloudWorx CAD plugins enable users to work effectively with massive point clouds directly inside their preferred CAD system. CloudWorx combines simple tools for viewing and working with parts of point cloud data to Speed up 2D drawing creation and 3D object and surface modeling.

Benefits of Using Leica CloudWorx

- Advance 2D drawing creation
- Improve survey workflows
- Simplify modeling
- 3D object and surface modeling
- Advance as-built modeling

Specific modeling and drafting tools of Leica CloudWorx software allows

- As-built piping models and other 3D constructions
- 2D and 3D ground surface surveying and modeling

Pointfuse

PointFuse point cloud to mesh software generates smart mesh models representing objects that can be selected, classified, and manipulated. PointFuse models can be up to 100x smaller than the point cloud, making reality capture simple to distribute across different shareholders' project teams and software environments. All while maintaining the as-built data observed in the initial point cloud.

This groundbreaking point cloud to mesh software allows you to create smart mesh models from point cloud data that can get incorporated:

- Into Digital Twin workflows
- Introduced into gaming settings for use with VR
- Used to generate LOD 200 BIM models for facilities management users

All of this is delivered as small, easily shareable files.

Benefits of Using Faro as Built

- User-friendly features with a high-quality user interface.
- No plugins required
- As a desktop application, designed to fit seamlessly in existing workflow
- Boosting up return on investment in reality capture data.

Infipoints by Elysium

Elysium has created a high-level functionality to automatically extract piping and planar surface information for creating BIM from point cloud data.This new technology complements any lost information in point-cloud with advanced processing abilities- such as feature
extraction and automatic registration of pipes and planar surfaces. This functionality enables users to precisely combine and perform registration within UAV/MMS-scanned data and data obtained from tripod 3D laser scanners. InfiPoints offers endless opportunities to Point Clouds.

Benefits of Using Infipoints

- Stress-free Approach - Makes possible stress-free handling of billions of point cloud data.
- Easy Point Clouds to CAD - Trouble-free modeling of steel and pipes structures. Seamless connectivity with Revit or other design software.
- Seamless Syncing with Viewer, VR, and Cloud - Anywhere, anytime
InfiPoints offers Point Clouds VR.

Parting Words

The global 3D scanning market reached around USD 1.12 billion in 2020 and it is projected to grow at a 14.1% CAGR by 2026 as the segment is supported by the increased investments and rapid technological advancements in 3D scanning.
People are using 3D scanning for various reasons, however, the biggest obstacle is that it is too manual a process to convert point cloud into a BIM model.
Given the ongoing investments and research, it's a need of the hour to automate the scantoBIM process that can ease the work to utilise point cloud at its best and convert it to relevant BIM models with lesser manual intervention. We, at nCircle Tech are committed to provide best in class ScantoBIM using Machine learning engine for automating scan to bim model.

Have you come across any scan to bim softwares - Comment in the Chat!

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