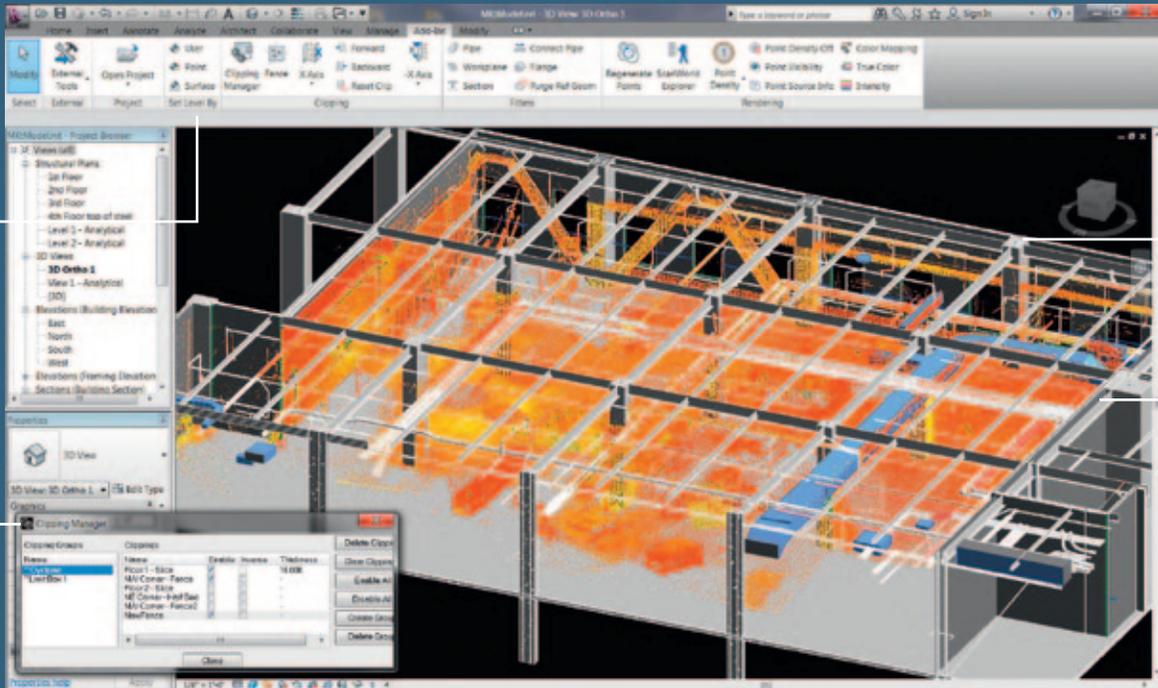# Leica CloudWorx 1.0
For Revit
PointCloud Plug-in Software

Quickly set building levels directly from picking on the point cloud.

Clipping manager allows the user to save, create, edit, and delete clipping records.

Users can create Revit modeled objects from the point cloud.

Visually check for clashing of new design against existing point cloud.

Leica CloudWorx 1.0 for Revit is a breakthrough plug-in for efficiently using rich as-built point cloud data, captured by laser scanners, directly within Revit for better BIM modeling of existing buildings. This is useful for a wide range of BIM activities including retrofit design, construction and operations, and lifecycle asset management of the building. It provides a virtual visit to the site within Revit with a complete view of the captured reality.

Users take advantage of the familiar Revit interface and tools to shorten the learning curve for working with laser scan data. Leica CloudWorx and its underlying powerful, Leica Cyclone point cloud engine let Revit users efficiently visualize and create BIM models from large point cloud data sets. Users get all the advantages of a high-performance point cloud application directly within Revit.

Features and Benefits
- Manipulate and navigate large point cloud data sets faster
- Model walls that are "out-of-plumb"
- Directly access laser scan data sets using the popular Cyclone project structure
- Work with point cloud data in Revit from any laser scanner
- Eliminate time consuming export/import process for Cyclone point cloud data
- Set Building Levels directly from the point cloud
- Crop the point cloud using Slices, Sections and Limit Boxes
- Automatically find center-line and diameter of pipes, round ducts and columns
- Set up Work Planes from point cloud
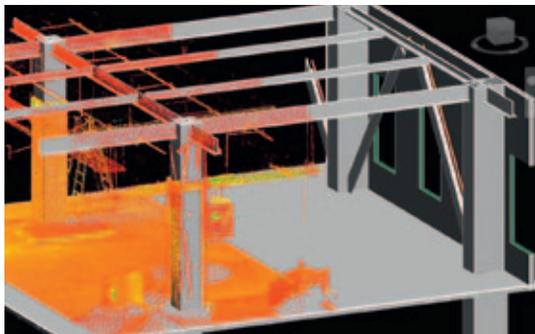- Place any Revit model item (walls, floors, etc.) from picks in point cloud

- when it has to be **right**

Leica Geosystems

Leica CloudWorx 1.0 for Revit
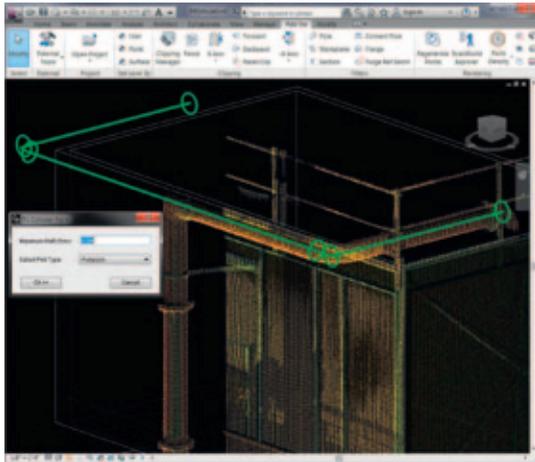
Intelligent point fitting tools assist in finding pipe centerlines and diameters. This ensures users can identify exact and accurate tie points and clashing, a very important part of modeling as-built piping.

Revit model objects (walls, floors, columns, etc.) can be best-fit to the point clouds which provide accurate as built models.

The Plug-in Advantage
Autodesk Revit Software has some built-in support for point clouds. However, by adding the Leica CloudWorx plug-in, users benefit from additional tools and higher efficency of a more productive point cloud enabled BIM modeling solution. Starting with much easier access to the point cloud data, a user can just open a Cyclone project directly in Revit. Users also find a critical set of tools for efficently cropping the cloud, and controlling the display parameters along with the ability to use unlimited sized point clouds.

Leica CloudWorx for Revit provides critical new modeling tools required to efficently and accurately create a BIM model of an existing structure.

The Advantage of Point Cloud Display Control
To focus on particular areas of interest, easy-to-use tools define specific areas of 3D point clouds to display. For improved visualization of point clouds, segments of point clouds can be selectively hidden using fences, slices or user-defined cutplanes.

The BIM Modeling Advantage
Tools to fit patches/workplanes directly from the point cloud or set up work planes facilitate the BIM-from-pointclouds process. Additional tools provide for accurate placement of walls, floors, structural members, doors, windows, mechanical equipment, etc.

BIM for Retrofit Projects
Engineers, Contractors, Architects and Designers can use CloudWorx for retrofit design projects to see their new work proposals/designs inside the point cloud that represents the actual existing condition. The unparalleled detail provided by point clouds allows users to conceive, design, visualize and dynamically interact in context with the real world "existing condition". Users experience a virtual site presence within Revit.

Leica CloudWorx 1.0 for Revit		Minimum Specifications	Recommended Specifications
Large point cloud mgt	3D limit boxes, slices, interactive visualization of massive data sets Cyclone Object Database Technology: fast efficient point cloud management	**Prozessor:** 2 GHz Dual Core processr or better **RAM:** 2 GB (4 GB for Windows Vista or Windows7)	**Processor:** 2.5 GHz Dual Quad Core i7 or higher **Ram:** 4 GB for 32 bit OS and 8 GB or more for 64 bit OS
Rendering	Level of Detail (LOD) graphics, "Single pick" point cloud density control	**Hard Disk:** 40 GB **Display:** SVGA or OpenGL accelerated graphics card (with latest drivers)	**Hard Disk:** 1 TB SATA **Large project disk option:** RAID 5, 7, or 10 with SSD drives
Visualization	Intensity mapping, True color, and Grey scale Limit boxes, slices, and cut planes	**Operating System:** Windows XP (SP2 or higher) (32 or 64), Microsoft Vista or Windows7 (32 or 64)	**Display:** Nvidia GeForce or ATI 6850 or better, with at least 1 GB memory
Measurement	3D point coordinate, Point-to-point, Point-to-design entity	**File System:** NTFS	**Operating System:** Microsoft Windows 7 64 bit
Modeling	Pipe center construction line generation Pipe diameter Connection of pipe runs Drive native Revit modeling commands using point cloud pick points Automatic planar surface (patch) detection to set work planes		**File System:** NTFS

Leica CloudWorx 1.0.1 for Revit is compatible with the Revit 2012-2013 family of products.

- when it has to be **right**

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