Leica CloudWorx 5.1 for MicroStation

Point cloud plug-in software

The CAD window can synch and follow the TruSpace viewer for easier navigation

New JetStream point cloud engine available for unlimited point cloud rendering in size and area

Clear viewing of entire job site with out the need to load only partial jobs. Load the entire job at once with instant rendering of unlimited points using JetStream
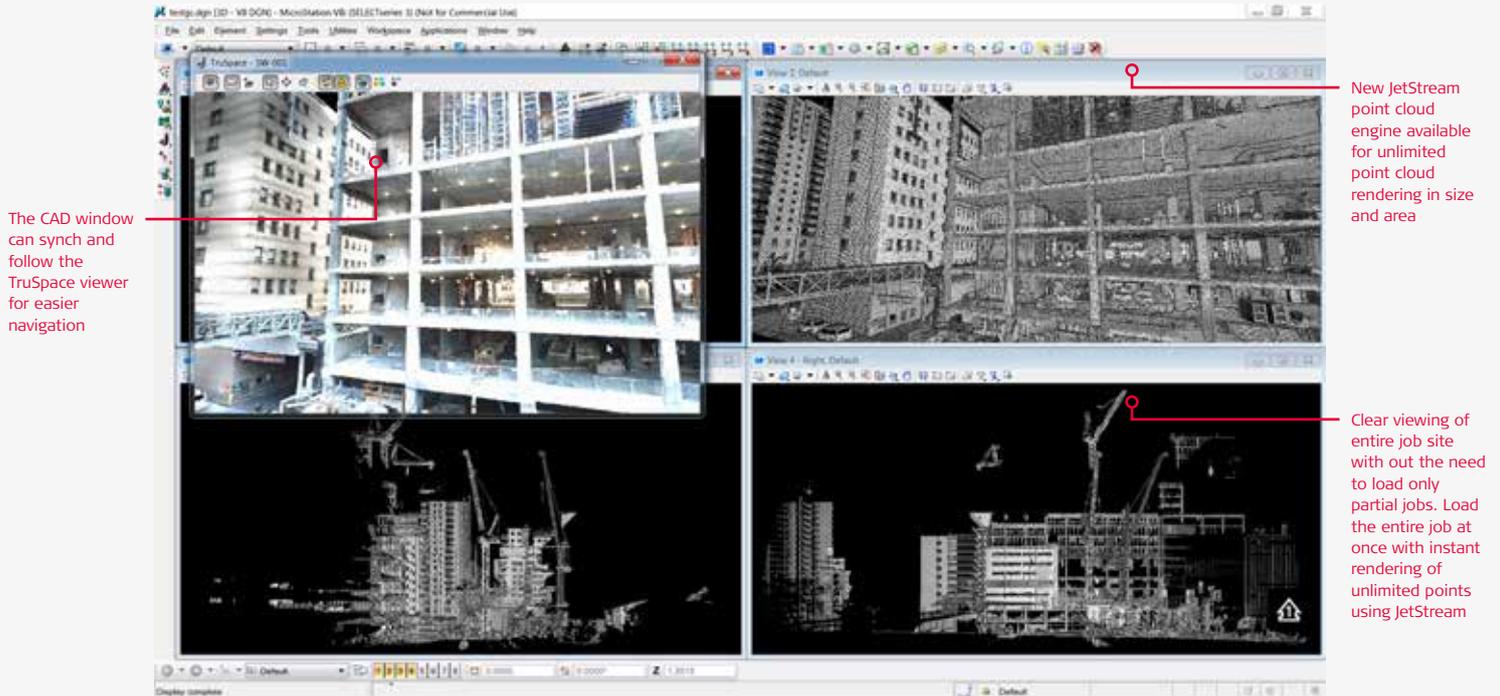
Efficient management, viewing and processing of laser scan data for architectural, plant, civil and other 2D & 3D projects.

Leica CloudWorx 5.1 for MicroStation is the most efficient and popular plug-in software for using as-built point cloud data – captured by laser scanners – directly within MicroStation.

Users take advantage of the familiar MicroStation interface and tools to shorten the learning curve for working with laser scan data. Leica CloudWorx and the powerful Leica Cyclone and new Leica JetStream point cloud engines let users efficiently visualise and process large point cloud data sets. Users can create accurate 2D and 3D as-builts, check proposed designs against existing conditions, perform critical construction & fabrication QA, and more… all directly within MicroStation.

In the past, users often struggled with point cloud manipulation when using MicroStation point cloud plug-ins. CloudWorx 5.1 overcomes this with its powerful TruSpace viewing window. This intuitive, panoramic viewing window lets users "see" better what the point cloud represents, and acts like a super-control to drive point cloud visualisation in MicroStation with unprecedented speed.

Features and Benefits
- New! Auto-Fit Polyline tool lets users quickly fit 2D lines and arcs to the point cloud with one or two picks
- New! QuickSlice tool lets users quickly slice and orientate the point cloud, aligning the UCS to walls and floors
- Points on a Grid tool
- SmartPick capability
- Steel fitters with support for standard catalogs
- Fast manipulation of scans in MicroStation
- Directly access laser scan data sets using the all new JetStream, and the popular Cyclone project structure
- Slices – quickly trace or auto-fit 2D lines, polylines, arcs
- 2D line, steel, flange, and auto-pipe fitters for intelligent as-builts
- Accurate tie-ins & clash checks
- Fully-featured for 3D or 2D deliverables
- English, German and Japanese versions

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Leica CloudWorx 5.1 for MicroStation

One common usage of point cloud data in CloudWorx is to trace over the point clouds to create dimensionally correct 2D or 3D wire frames for building elevations, model extrusions, etc. Several CloudWorx commands make this easy.
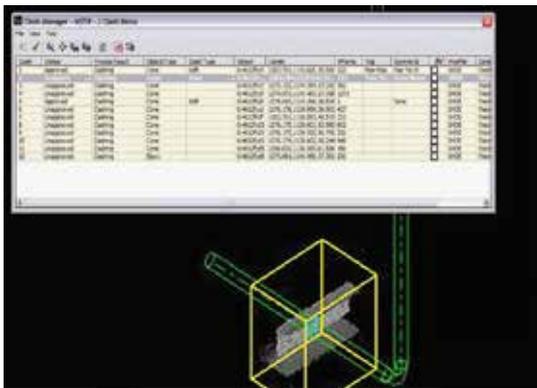
Clash Manager creates a database for managing, tracking, assigning and classifying clashes. A powerful navigation feature lets users easily pull up isolated views of any clash. Here we see a pipe clashing with scanned point cloud data of a beam.

Control point cloud display
To focus on particular areas of interest, easy-to-use tools define specific areas of 3D point clouds to display. For improved visualisation, segments of point clouds can be selectively hidden using fences and user-defined cutplanes, slices or 3D limit boxes.

Accurate building documentation
Slices through point cloud data facilitate the creation of planimetric and elevation drawings. 2D lines, polylines, and arcs can be best-fit to provide accurate results. Cross sections of point clouds can also be plotted directly, introducing an entirely new, accurate deliverable and reducing project cycle time.

As-built piping models
Pipe fitting, steel fitting (with catalog support), and flange fitting tools enable users to quickly create accurate, intelligent as-built piping models, best-fit to the point clouds, in conjunction with tools in Bentley PlantSpace, PDS, etc. Tie-in locations for proposed retrofit designs are also easily identified. Planar surfaces can also be modelled from point clouds using CloudWorx fitting and region growing tools.

Detailed information for retrofit projects
Engineers can use CloudWorx in retrofit design projects to check for potential interferences with point clouds that represent actual as-built or as-is conditions. The unparalleled detail provided by point clouds allows engineers to create 2D or 3D designs based on accurate, comprehensive information, providing time and cost-savings throughout a project's various construction phases.

Civil engineering applications
Leica CloudWorx integrates with applications like Bentley's InRoads and GEOPAK to deliver solutions for civil engineering projects – such as transportation infrastructure, land development, bridge models and more. Users can extract 3D coordinates to represent site features that are easily identifiable in detailed point clouds. Original ground points can be extracted for topographic modelling.

Available in multiple languages
Leica CloudWorx for MicroStation is available in English, German and Japanese. See the Leica CloudWorx Technical Specifications document for a complete listing of product specifications.

LEICA CLOUDWORX 5.1 FOR MICROSTATION*		MINIMUM SPECIFICATIONS	RECOMMENDED SPECIFICATIONS
Large point cloud mgt	3D limit boxes, slices, interactive visualisation of massive data sets Connects to Cyclone or JetStream Database Technology for fast, efficient point cloud management.	**Processor:** 2 GHz Dual Core processor or better **RAM:** 2 GB (4 GB for Windows Vista or Windows 7)	**Processor:** 3.0 GHz Quad Core w/ Hyper-threading or higher **RAM:** 32 GB's or more 64 bit OS
Rendering	Level of Detail (LOD) graphics, "Single pick" point cloud density control	**Hard disk:** 40 GB	**Hard disk:** 500 GB SSD Drive
Visualisation	Intensity mapping, true colour TruSpace panoramic viewer – Select view point from key plan – Drive CAD viewpoint from TruSpace – Quick limit box in CAD from single pick in TruSpace – Send point picks from TruSpace to CAD commands – Include background image Limit boxes, slices, cut planes	**Display:** SVGA or OpenGL accelerated graphics card (with latest drivers) **Supported operating systems:** Windows 7 (32 or 64 bit) Windows 8 & 8.1 (64 bit) Windows 10 (64 bit) **File system:** NTFS	**Large project disk option:** RAID 5, 6, or 10 w/ SATA or SAS drives **Display:** Nvidia GeForce 680 or ATI 7850 or better, with 2 GB's memory or more **Operating system:** Microsoft Windows 7 – 64bit **File system:** NTFS
Measurement	3D point coordinate, point-to-point, point-to-design entity		
Modelling	Pipe Modelling: least-squares fitting, fit points inside fence, grow from pick, grow a pipe run from picks, connect pipe runs. Planar surface (patch) modelling: best-fit 2D lines, polylines, arcs, Steel Fitter (with catalogs), Flange Fitter & Tie-Point Location tools.		
Interference checking	Check designs for potential interferences with point clouds, Advanced clash management database system		

* Reference the Leica Cyclone Technical Specifications document for a complete listing of product specifications.

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