# FARO® As-Built™ Suite

All-in-One solution for Reality Data Evaluation

Point Cloud Modeling and more across Autodesk® AEC Software Platforms

FARO As-Built Suite is a product bundle of FARO's As-Built Plug-ins for AutoCAD® and Autodesk® Revit®, that accelerates the evaluation of laser scan data significantly. It provides a complete set of powerful point cloud processing tools supplemented by analytical and photogrammetry capabilities and the ability to connect total stations to AutoCAD®, all under one license. Utilizing the As-Built Suite enables service providers the maximize flexibility to deal with 3D documentation tasks in every business field of Architecture, Engineering and Construction (AEC).
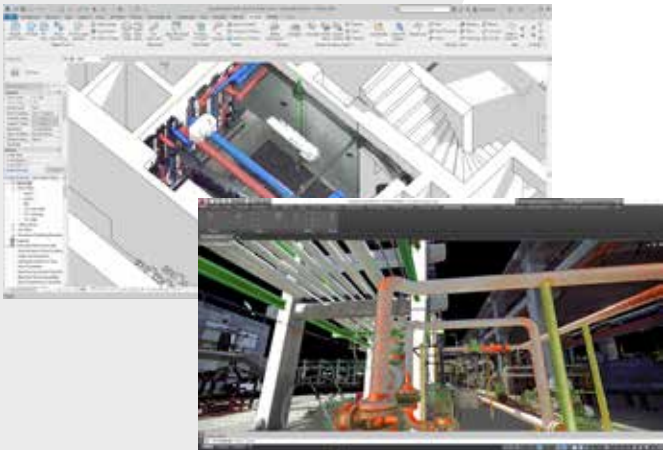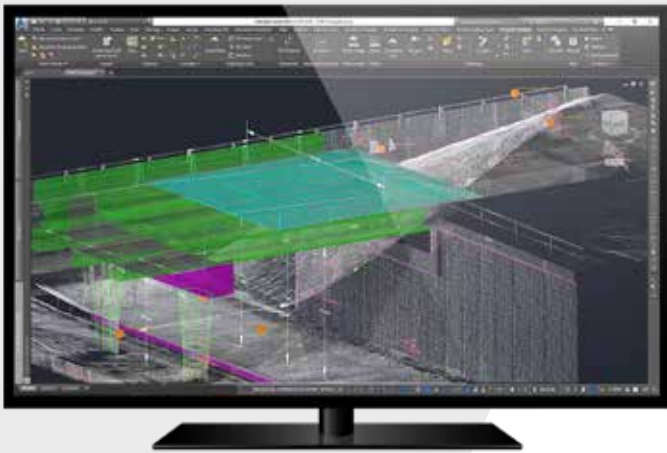
Powerfull Tools for Point Cloud Modeling & Analysis
Accelerate point cloud processing with enhanced scan navigation, geometry extraction tools, intuitive sectioning and intelligent SmartSnaps.

Intelligent Industry Tools
Create industry specific 2D and 3D results from as-built data according to the specific documentation task. Extract: 2D plans, 3D building elements, topo features, pipe and steel structure, tanks, or generate new BIM Family objects.

Support of Multiple Sensors and Surveying Technologies
Work with different instrument types like 3D laser scanners, drones, mobile mapping systems, cameras, and combine the data of the different sensors in one AutoCAD® plan. Connect a total station with AutoCAD® software and draw complete plans on-site. Define a 3D framework for the positioning of laser scans or stake out references from the design into reality.

Superior Analytical Functions
Visualize deviations of as-built CAD models with point clouds in configurable heatmaps, elevation plans or lists to verify for the accuracy of modeling. Analyse tanks, calculate masses and volumes.

Combine Feature Data with CAD Objects and Structured Room Schedules
Manage room polygons and additional spatial information in a clear and freely adaptable tree structure. Export the area data to text tables or directly to databases (for example to a CAFM system).

Benefits

- All-In-One solution for processing scan data within familiar Autodesk® environment

- Affordable investment compared to buying separate As-Built programs

- Convenient laser scan data extraction between As-Built software modules to serve various industry specifications

- Supports most commonly used laser scanner and total station 3rd party data formats

- Convenient software handling, considering that all software tools are stored under one license

Features

The As-Built Suite bundles all well-known As-Built products for AutoCAD® software and Autodesk® Revit® in one package. The As-Built Suite offers intelligent geometry extraction and analysis tools for modeling across Autodesk® AEC platforms. Deliverables can be easily extracted in the Autodesk® platform of choice.

Process 3D laser scan data directly in Autodesk® Revit®

- Automatic fitting and alignment tools for walls, pipes and structural elements
- Create directly in the point cloud using real 3D point snap and work plane fitting
- Process scan data in the Revit® Family Editor
- Compare your model with reality using the surface analysis tool

Process 3D laser scan data directly in AutoCAD® Software

- Evalutate consistent plant models from laser scans
  - Pre-calculate and auto-recognize industry standard components (pipe runs, steel beams)
  - Tank analysis tools (deformation, volume analysis etc.)
  - Determine tie in points and pipe center lines
  - Export models to design programs such as AutoCAD Plant 3D®, Advance Steel® ...

- Generate 2D plans from 3D laser scan data
  - Fast construction of 2D sections through tools for automatic line extraction
  - Drawing commands for building elements such as windows, stairs, doors…
  - Database driven area management tools
  - Tools for analysing deformations such as floors and facades

- Use photogrammetry and laser scans in AutoCAD® software
  - Flexible construction of 3D models thanks to integration of point clouds and photos
  - Generation of true-to-scale image plans and unwound image plans
  - Intuitive navigation within the planar scan view of the scan data

- Controll tolerances, detect clashes and compute volumes
  - Tools to quality analysis of your model exported as deformation reports inclusive heat maps and elevation plans.
  - Implement given stakeholder tolerances or industry standards from e.g. USIBD® or BuildingSMART®
  - Analysis of vertical tanks with shell unwrapping and volume calculation even with deadwood subtraction.
  - Use flatness analysis or solid modelling (2.5D meshing, terrain model) for volumetric calculations
  - Collision analysis between scan and CAD design objects
  - Quality control of built structures based on given tolerances and standards (LOA)

- Combine feature data with CAD objects and structured room schedules
  - A convenient database feature management
  - Creation and visualisation of a list of floor areas at the press of a button
  - Automatic recording of bounding polygons, calculation of surface areas, room information blocks and bill of materials supported by intelligent pattern recognition
  - Numerous functions for asset- and feature data capture and exporting of data in a database suitable format (Excel, ASCII tables, XML, HTML, AutoCAD® blocks, CAFM suitable polygon, Shapefile…)

- Connect total stations to AutoCAD® software on-site
  - Connect and control via As-Built for AutoCAD® Software with most common total stations/robotic stations
  - Convert measurements immediately into CAD geometry.
  - Stake out referenced or modeled CAD geometry to reality

- Generic tools for point cloud modeling
  - Section manager assists in management, hiding/displaying of sections
  - SmartSnap feature allows easy snapping of corners, edges and planes
  - Tools to create results, such as deformation reports e.g. as heat maps and elevation plans.

Industries

Architecture | Civil/Survey | Industrial Plant/Process | Construction QA/QC | MEP | Facility/Asset Management | Historic Preservation | Specialty Trades

Technical Requirements	
Platform	AutoCAD® 2015 and Autodesk® Revit® 2015 and above. Also compatible with associated products e. g. Civil 3D®, Architecture®, Map 3D®. Users of elder Autodesk products please contact FARO.
Operating system	Dependent on the version of AutoCAD® or Autodesk® Revit®, 64-bit systems only .
Recommended hardware requirements	Computer: Graphics card as recommended by Autodesk, RAM at least 8 GB, better 32GB and more, processor at least 2.5 GHz, better 3-4 GHz and 4-8 cores, SSD for larger projects; Laser scanner type, camera and total station to suit job in hand.
Data requirements	Registered scans (and images).
Supported scan data formats	E57, ASCII, LAS, FARO (LSPROJ, FLS, FWS), Leica (PTZ, PTS, PTX), Zoller&Fröhlich (ZFS, ZFPRJ), Topcon (CL3, CLR) Leica (PTG) and Riegl RiScanPro-Projects (RSP).

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