2023

Trimble Layout Basics

Building Construction Field Solution Group

Trimble

Agenda

1 Overview

2 Layout Hardware

3 Field Software

4 Office Software

Getting Started - Why Layout First?

Layout is the product line that comes to mind when most customers think about Trimble and the legacy solution for our building construction channel. Helping customers answer the “how they figure out where things go” question with Trimble hardware has significant efficiency improvements over traditional layout methods.

Layout products still represent 75% of our global BCFS sales today and understanding these products and customers that use them is key to getting started in a new role or sales territory.

Business Problem - What does Trimble Layout help with?

- Translating design intent in the field
- Complex building designs
- Conventional methods are time consuming and open to error
- No proof / record of execution
- BIM - requirement for digital data in the field
- Outsourcing to third party
- Data flow issues from design to site

“5x productivity gains & accuracy compared to manual layout”

Overview

ROI seen by customers - Real Customer Quotes

“The results were eye-opening. In terms of productivity, the manual team was able to mark 156 points in about 48 hours. The Trimble FieldLink team marked 210 points in four hours.”

Chris Milford, BIM/CAD Manager, Trans Gulf Electro Mechanical

5.5 times more points on the RTS than two-person total station

“Last summer, even when the superintendents were busy with other aspects of the project, they weren’t ready to give up the RTS because they knew how useful it was.”

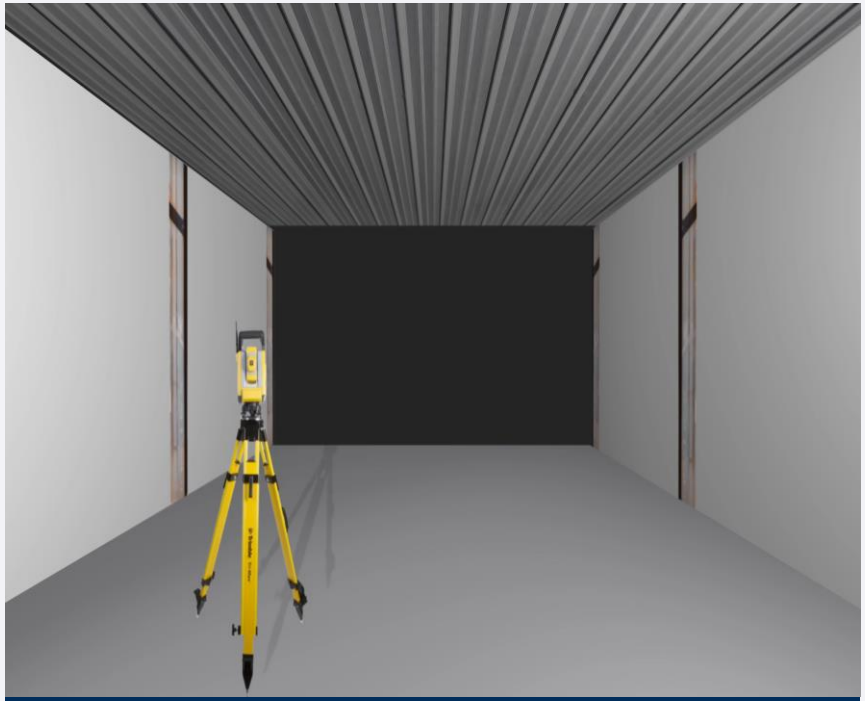
Jamie Spartz, Director of Virtual Design & Construction

Right Tool - How these work and Current Portfolio

Hardware

Total Station and GPS differences, use Interchangably.

Quick Refresh.. How Layout Tools Work



Prism Layout

Laser Layout

Advantages

- One setup
- Tilt compensation
- No LOS required
- Time

Disadvantages

- Initial setup
- Accuracy
- OpenSky needed

GPS Layout

Layout Portfolio

Model		Angular Accuracy	Telescope	Vision	Laser Layout	Tracklight	Active Tracking	Auto Calibration	Auto Laser plummet	Laser Measure Range
RTS573		3”	Y	N	NO	Y	Y	N	N	465 ft
Ri		3”	N	Y *(plus)*	RED *focusing*	Y	N *smart passive*	Y	Y	492 ft
RTS773		3”	Y	Y	RED	N	Y	N	N	492 ft
Ri (plus)		2”	N	Y *(plus)*	RED *focusing*	Y	N *smart passive*	Y	Y	1230 ft
RTS873		3”	N	Y	Green *focusing*	N	Y	N	N	492 ft
R780		0.8-2cm (¼”-¾”) accuracy correction dependent, no Line of Sight needed, OpenSky needed								

Field System Components

Total Station- Instrument and Pole/Prism with Tablet

GNSS- Rover/Pole, base optional

FieldLink - Field Software

FieldLink is the field (or PC) software that supports all BCFS hardware. Designed specifically for building construction, workflows have been streamlined with contractor use case in mind

FieldLink Value Proposition

- For contractors who need to **easily translate design intent in the field with a fully digital 3D process**.
- Best-in-class setting out systems **increase productivity**.
- Setting out solutions **increase accuracy and speed, reduce errors, avoid clash issues,** and **provide peace of mind** by providing a **smooth workflow** from design intent through field set out.

Trimble FieldLink

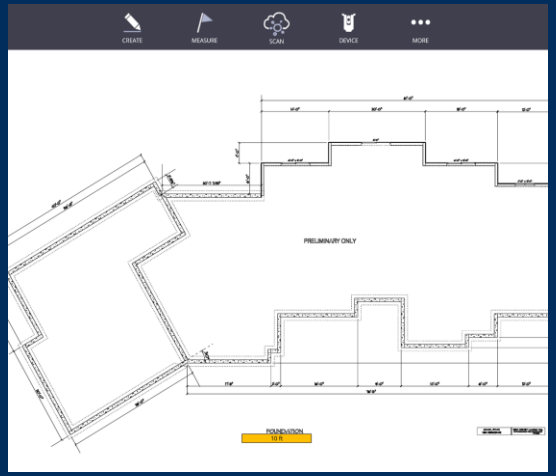
- **FieldLink**: One software, multiple field hardware applications
- 3D Tekla engine utilized to display and manipulate background files
- Multiple model file management
  - *PDF, TRB, IFC, DWG, DXF, RVT, NWD, etc*
- Point Creation
- True BIM data
- Multiple reports
  - *Field report, surface, daily summary*
- Trimble Connect workflow
- Section boxes, user defined view
- Point creation / line work

Data Continued...

Layout efficiency regardless of data used. Use what your customers use already for field drawings!

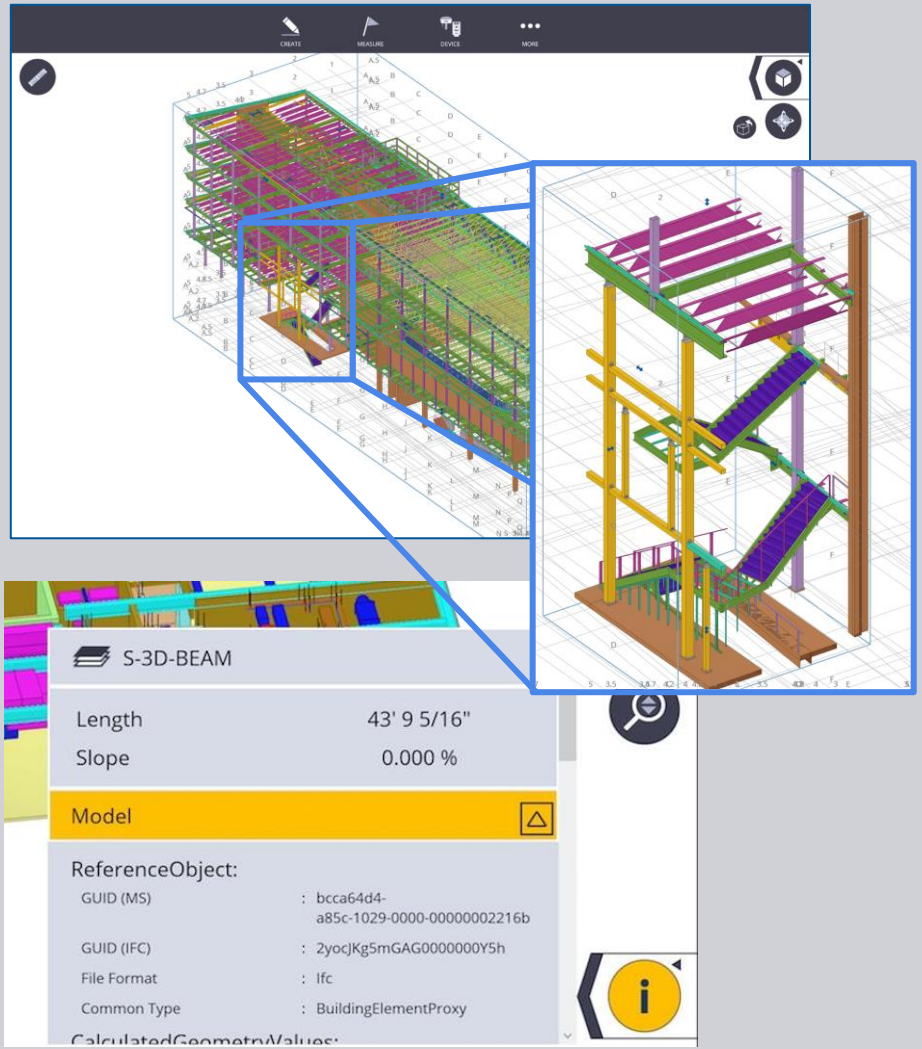
3D Files

2D DWG



PDF

PDF DWG CSV IFC



Manage Data

Models

- Import from CAD
- Manage multiple models
- Control layer visualization
- Create new layers
- Create views
- Query elements within model
- Create points from model in the field
- Transform models

Enter from plan

Import digital PDF’s

Import points

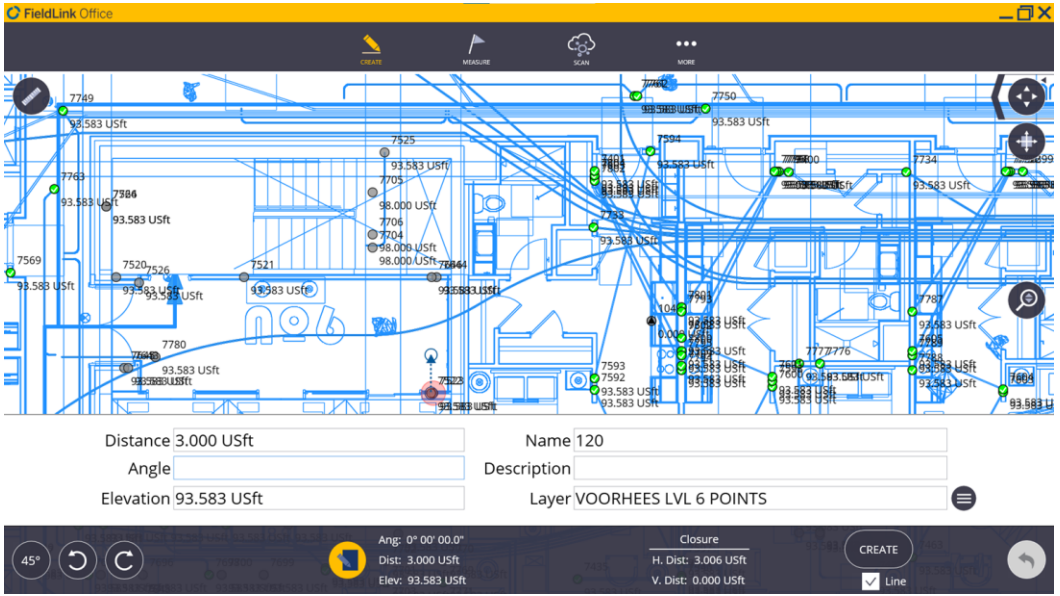
Supporting all workflows

Office Software

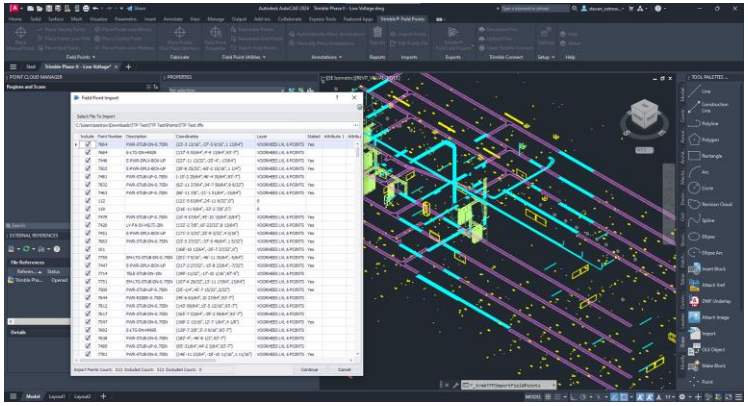
Point Creation for layout prep & As-Building

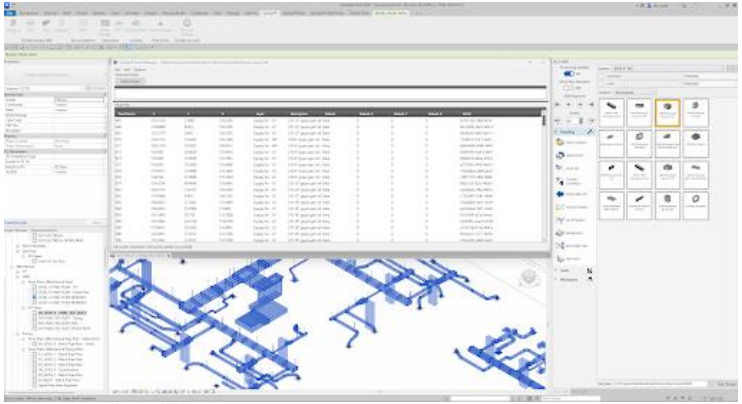
FieldLink Office

- Ease of use
- No CAD/BIM needed
    - The perfect solution for “we don’t have a BIM team”
- Add points to PDF, DWG or model
- Manual or offset points
- Automatically place points
- QA before sending to field



Revit & AutoCAD





Field Points Plugin for Revit & CAD

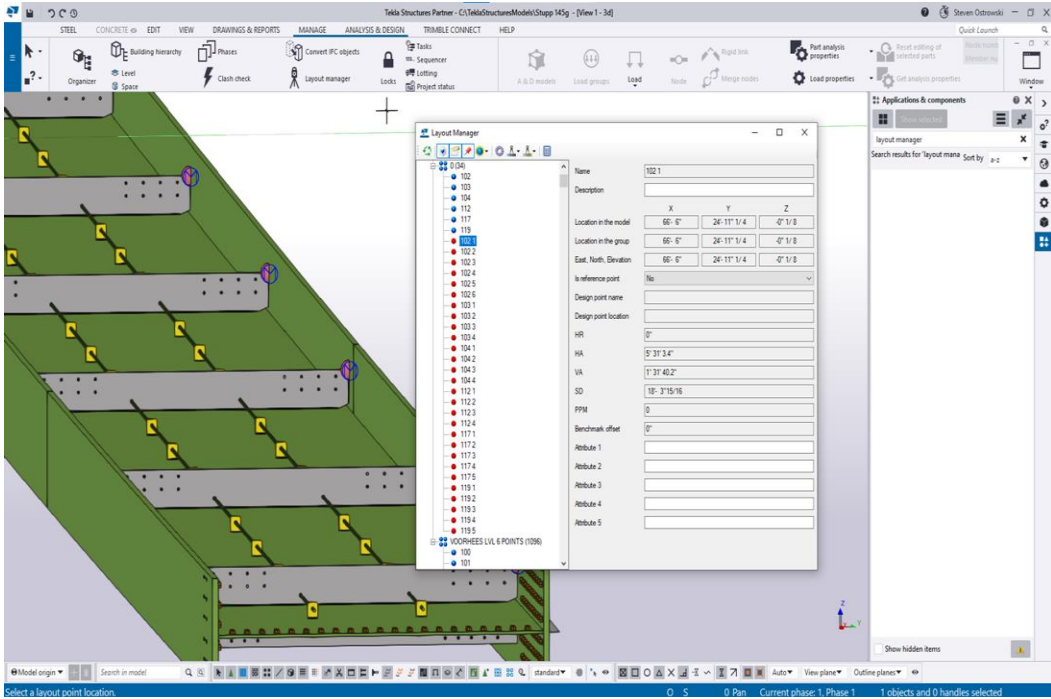
** Ideal for customers already working in AutoCad or Revit**

- Point Placements
- Field Data Imports
- Custom Report Creation
- Flexible Point Creation
- Direct Integration

Tekla®

For customers already using Tekla, there are several workflows that streamline layout prep from design work already done

- Examples Include:
  - LayoutPoint Placements
  - Field Data Imports
  - Custom Report Creation
  - Flexible Point Creation



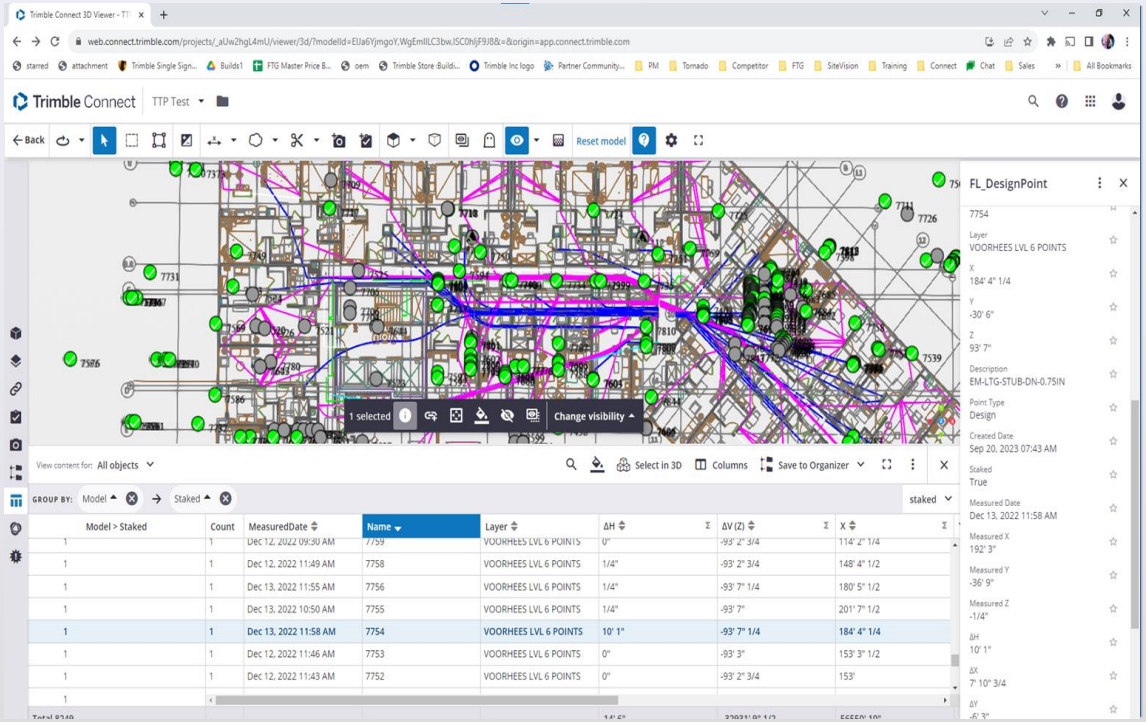
Connect’ed Construction

Connecting Data to everyone

Point Creation & As-Building

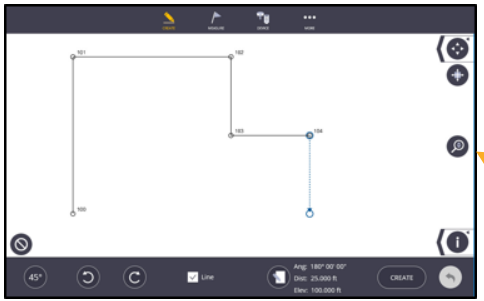
Trimble Connect

Field to Office & back



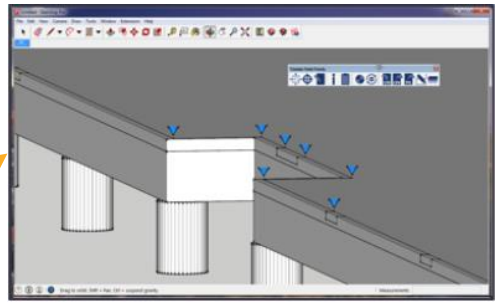
- Connect Field to Office
- Send 2D/3D Point Creation
- As-builts brought back
- Progress, status of update
- Access to anyone

Integrated, Connected Workflows



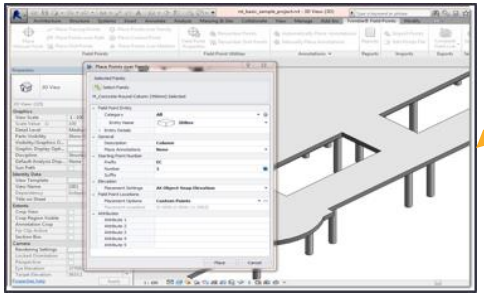
FieldLink Office

SketchUp



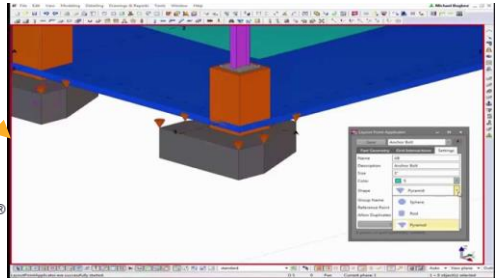
Field Points for SketchUp

Trimble Connect



AUTODESK

Tekla



Field Points - AutoCAD & Revit

Point Creator in Tekla

Building Construction Field Systems

Field Layout

3D Capture

xReality

Construction Robotics

Design

As-builts, Issues