



# Trimble Business Center

OFFICE SOFTWARE



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Office Software

## SURVEY + CONSTRUCTION FIELD TO FINISH WORKFLOWS WITH CONFIDENCE

Leverage the power of raw geospatial and construction data in a single, robust software environment to confidently deliver project after project with Trimble® Business Center (TBC) office software. With your professional reputation, financial well-being, and requirements on the line, use TBC's unique capabilities to separate yourself from your competition and stand out to your clients.

### Data Integration

In a single software package, combine raw measurements from GNSS, total stations, and levels; then, add in data from unmanned aerial vehicles (UAVs), mobile mapping systems, and terrestrial laser scanners, all of which is scaled to your survey data. No need to import and export between multiple software packages. No need for training, warranty maintenance, or support for different applications from different providers. TBC provides the capabilities and inspires the confidence you need to deliver complete survey and construction deliverables.

### Confidence Inspiring Results

Work with the raw sensor data, not just X,Y,Z coordinates, view and edit rod heights, prism constants, vector timestamps, and more to achieve the most accurate horizontal and vertical results. Visualize your data in context with Google Earth or DigitalGlobe background imagery. Don't put up with fragmented data sets or disjointed workflows that cause costly mistakes and jeopardize your livelihood. From third-party or Trimble hardware, have the data to backup your office and field work for every project, every time.

### Robust Deliverables

When "good enough" is never acceptable, TBC enables you to deliver diverse results with point, adjustment, takeoff, and many other report types, digital surface and site models, CAD plans, point clouds, corridor designs, machine control models, and station-based imagery. Or work with other industry-leading software packages from Autodesk®, Bentley®, ESRI, and more with import and export support for a variety of third-party file types. When it's time to submit, store and share projects online to Trimble Connect, Trimble Sync Manager™, Trimble Clarity, or Bentley ProjectWise®, all initiated with TBC.



## Use the cloud for real, simple productivity

Use TBC and the Trimble Connect platform to help you send your data to your field crews and back, visualize and share your projects with your clients and your clients' clients, and more. It's the cloud for survey and construction professionals.

- ▶ Send project data and files to Trimble Access™ 2018.00 and later with Trimble Sync Manager
- ▶ Publish your station-based total station and SX10 data to Trimble Clarity, then share it with your client and allow them to interact in 3D with your work
- ▶ Toggle background maps that refresh with your project location, save and load TBC projects from Trimble Connect storage

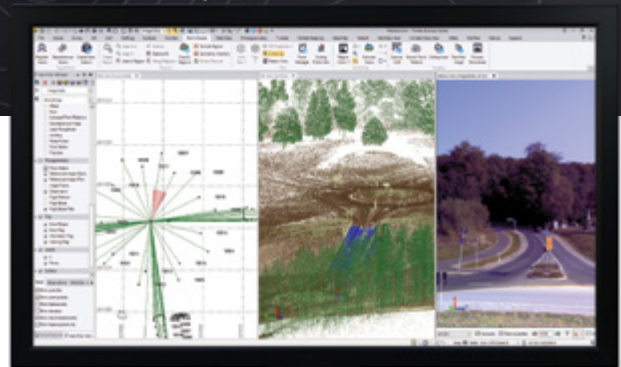
# Supported Workflows

One survey and construction CAD office software that does everything you need.

## Field Data QA/QC

Import and interact with Trimble and third-party raw data.

- ▶ Visualize, interact, and measure your data across multiple views and reports.
- ▶ Check and edit raw data with spreadsheets, selection filters, and interactive property menus.
- ▶ Sync data with Trimble Access, SCS900, and machine control systems.
- ▶ Process feature codes from the field or keyed into TBC.
- ▶ Provide context with background maps, georeferenced images, and overlays in Google Earth.

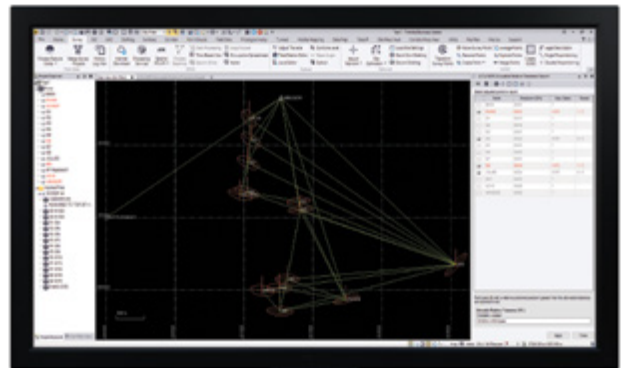


Use multiple views to review and edit raw data

## Adjustment and COGO

Efficiently reduce observations and perform cadastral survey workflows.

- ▶ Process static and kinematic GNSS observations and edit raw session data.
- ▶ Compute and adjust traverse and level runs.
- ▶ Translate field book data and notes into the Level Editor and Total Station Editor.
- ▶ Complete least square corrections with mixed data observations and constraints in the Network Adjustment.
- ▶ Input survey plans, compose legal descriptions, and compute parcel misclosures intuitively with the Create COGO routine.

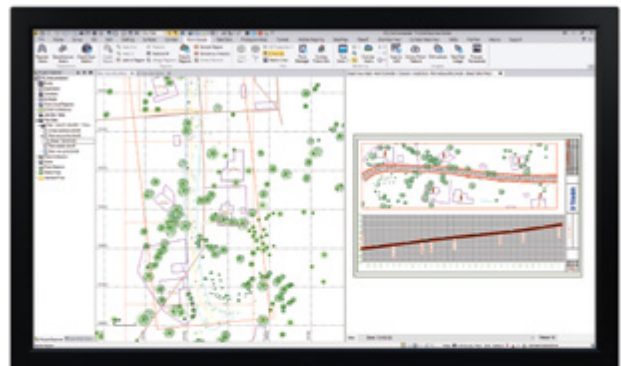


Apply a least-squares adjustment in Network Adjustment

## CAD and Drafting

Produce your final survey linework, construction models, and roadway design plots with ease.

- ▶ Draft and edit points, 2D or 3D linework, and CAD geometry.
- ▶ Use Dynaviews to place your model space data into sheet plots.
- ▶ Add dynamic labels, line and curve tables, scale bars, and other map elements.
- ▶ Automatically plot profiles and cross-sections for alignment-based surfaces or corridors.
- ▶ Create digital deliverables such as DWG CAD files or print deliverables like plan sets or 3D PDFs for communication and collaboration.

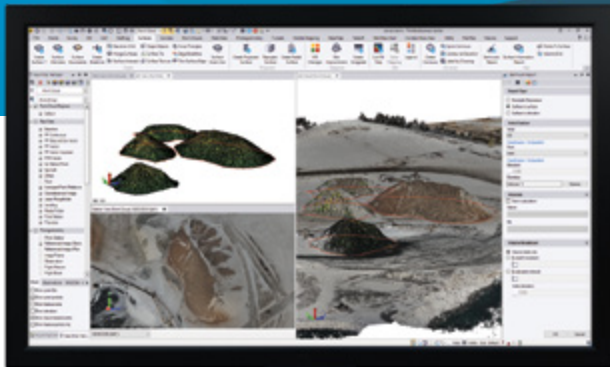


Draft plan and profile sheets with Dynaviews

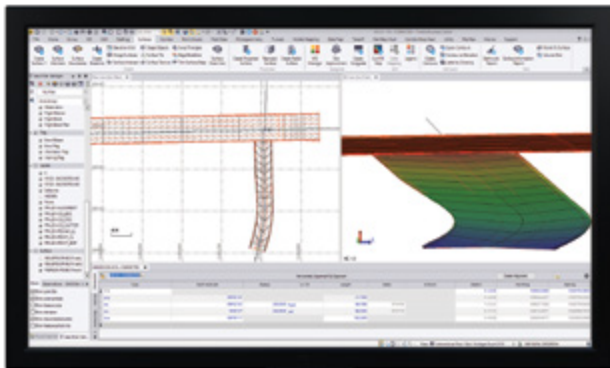


# Supported Workflows

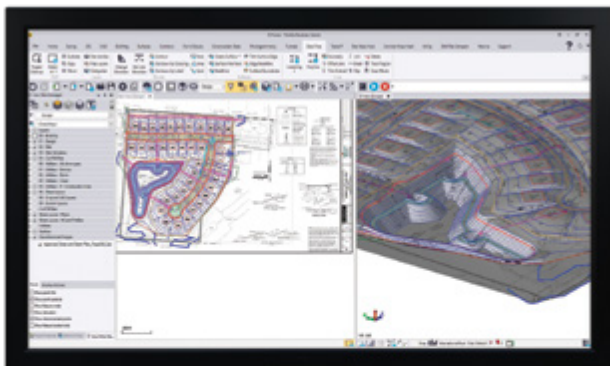
One survey and construction CAD office software that does everything you need.



Compute surfaces & volume stockpiles



Model and visualize simple or complex alignments & corridors



Digitalize plan sets from PDF into 3D linework & models

## Surfaces and Volumes

Create, process, and deliver complex surface models for field devices, machine control systems, and third-party export.

- ▶ Create traditional, projected/vertical, and radial surfaces that dynamically update when surface members are modified.
- ▶ Generate quick and accurate volume reports from surface comparisons, stockpile/depression, and corridor surfaces.
- ▶ Compute gridded Cut/Fill surfaces and reports with customizable color mapping.
- ▶ Specify contour lines and labels that update as the surface changes.
- ▶ Drape objects onto surface and run point-to-surface comparisons.

## Corridors

Model and manipulate alignments and parametrically-designed corridors.

- ▶ Define horizontal and vertical alignments from scratch or existing CAD linework with support for station equations and superelevations.
- ▶ Enter corridor template instructions with interactive, graphical feedback.
- ▶ Handle complex roadway designs with conditional instructions and slope and node tables.
- ▶ Design corridor features such as interchanges, ramps, and intersections with parameter prompts.
- ▶ Generate corridor earthwork reports, apply material properties, and create subgrade surfaces.

## Data Prep

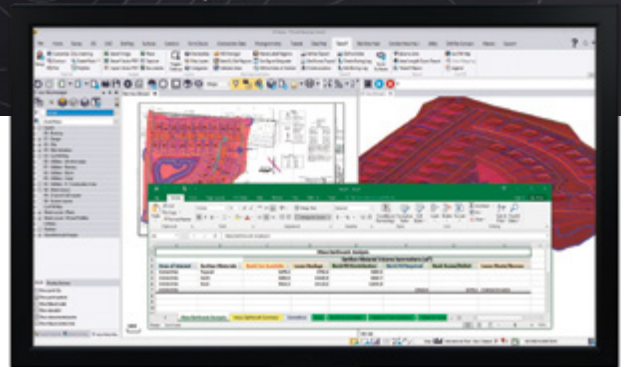
Make sure your data is clean, up-to-date, and delivered in the right format to get the job done.

- ▶ Import, cleanup, and organize CAD and PDF data with Project Cleanup.
- ▶ Extract and digitize data from vector PDFs.
- ▶ Elevate 2D contours, points, lines, and polygons into 3D models.
- ▶ Interact with site and corridor designs from third-party packages with support for a variety of CAD and BIM formats.
- ▶ Create linework, surfaces, and avoidance zones for machine control systems.

## Takeoff and Mass Haul

Calculate earthwork and material quantities of a construction project.

- ▶ Define site improvements in the Material Site Manager for computations and reports.
- ▶ Generate takeoff reports for earthwork, materials, and costs.
- ▶ Balance and optimize earthwork volumes to reduce borrow and waster.
- ▶ Plan and design optimal material haul routes.
- ▶ Create mass haul diagrams and reports to plan and monitor progress for sites and corridors.

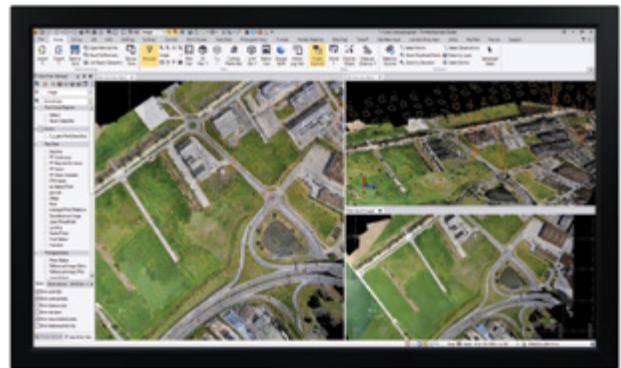


Calculate earthwork, material, and cost data

## Trimble VISION and Aerial Photogrammetry

Measure and model from Trimble VISION™ technology and UAS data with highly automated workflows.

- ▶ Extract points and geometry from station imagery, ortho images, and point cloud data.
- ▶ Choose TBC or UASMaster to adjust imagery and create deliverables.
- ▶ Generate photo tie-points automatically and match GCPs.
- ▶ Create high resolution point clouds, orthomosaics, and elevation raster DSMs from Trimble or third-party UAVs.
- ▶ Process and create deliverables from oblique images in UASMaster.

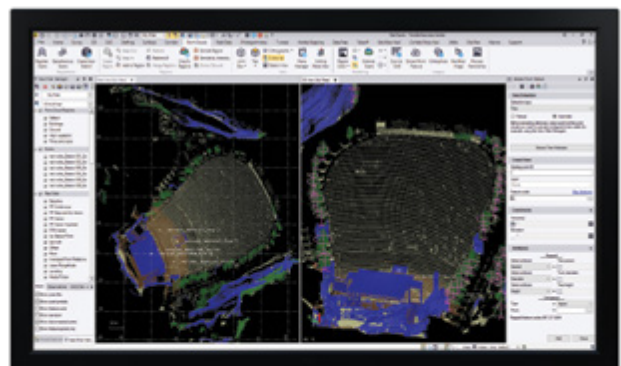


Adjust UAV data and create deliverables

## Scanning and Point Clouds

View, manipulate, and extract information from terrestrial, mobile, and aerial point cloud data.

- ▶ Colorize, register, georeference, and adjust Trimble SX10 scan data.
- ▶ Import and register Trimble TX6 and TX8 and third-party terrestrial laser scanner data.
- ▶ Scale scan and point cloud data to survey data in an integrated project environment.
- ▶ Classify regions, segment point clouds, and use limit boxes to manipulate scan data from formats like \*.las, \*.pts, \*.e57, and more.
- ▶ Extract points, attributes, and linework with user-defined planes and automatic and semi-automatic feature extraction tools.

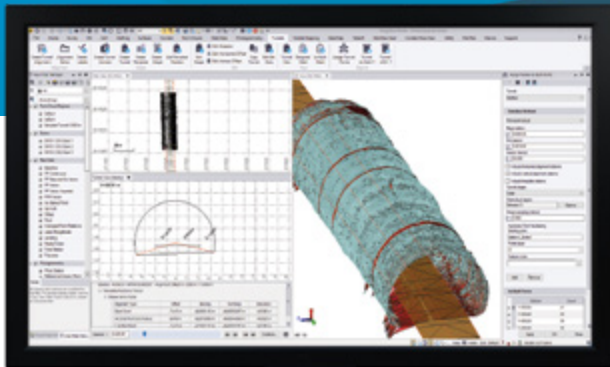


Extract features from scans and point cloud data



# Supported Workflows

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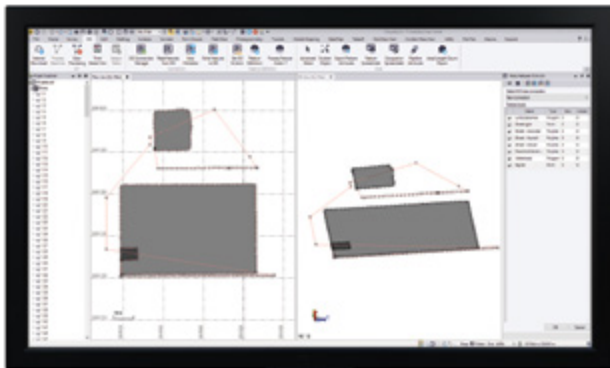


Use point cloud or topo data to build tunnel models

## Tunneling

Work with Trimble Access Tunnels module and leverage TBC's point cloud and reporting tools.

- ▶ Parametrically design tunnel shape templates with dynamic cross-section interface.
- ▶ Prepare tunnel geometry and set-out points.
- ▶ Visual and draft tunnels with the Designed Tunnel Mesh and As-Built Tunnel Mesh objects.
- ▶ Assign as-built points and point cloud data to create customized As-Built Tunnel Reports with over/under-break and volume information.
- ▶ Generate ASCII-based tunnel reports.

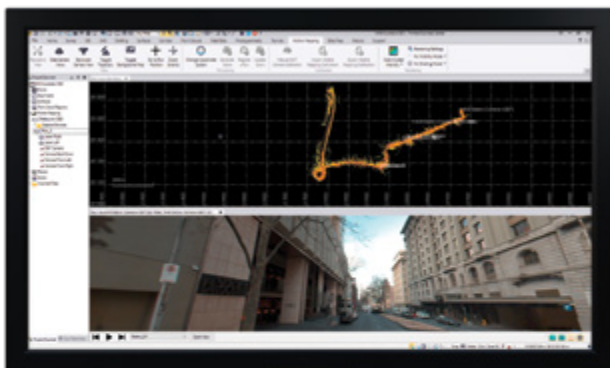


Import SSF data and attributes via a File Geodatabase

## GIS

Integrate GIS within survey data and provide deliverables to an ESRI-based environment.

- ▶ Extract schemas and convert to feature definition code libraries.
- ▶ Import and export File Geodatabases.
- ▶ Post-process \*.ssf GNSS data from TerraFlex™ and other Trimble GIS field sources.
- ▶ Map metadata from data source connections.
- ▶ Support for \*.cor files with feature and attribute data from Trimble GPS Pathfinder® Office (PFO).



Work with trajectory, registered point cloud, and imagery

## Mobile Mapping

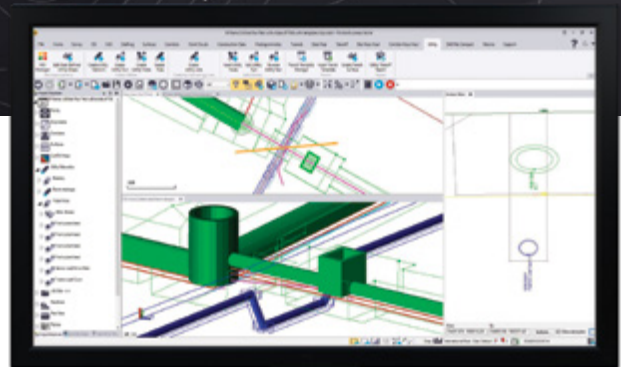
Process, utilize, and integrate data from Trimble's mobile mapping hardware platforms.

- ▶ Adjust, colorize, and register scan data.
- ▶ Calibrate mobile mapping camera systems.
- ▶ View mobile mapping runs and extract points.
- ▶ Export data to third-party and Trimble software file formats like Mapillary and TMX.
- ▶ Integrate mobile mapping with GNSS, total station, and other survey and construction data.

## Utility Modeling

Define gravity or pressure-based utility networks for takeoff and visualization applications.

- ▶ Create pipe and utility networks.
- ▶ Customize utility shapes and structures.
- ▶ Design parametric trench templates and surfaces.
- ▶ Add utility models to existing sitework, CAD geometry, and surface context.
- ▶ Generate customized utility takeoff reports.

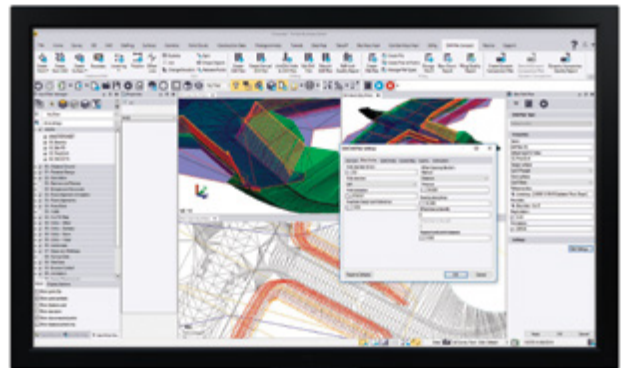


Model pipe networks, structures, and trenches in 3D

## Drilling, Piling, and Dynamic Compaction

Prepare work plans and connect to DPS900 systems.

- ▶ Create boring and drilling plans and work reports.
- ▶ Create foundation and infrastructure piling plans and work reports.
- ▶ Create dynamic compaction plans and work reports.
- ▶ Customize pile types and drill quality reports.
- ▶ Import and export to Trimble DPS900 systems.



Set and edit drill, piling, and dynamic compaction plans

## CUSTOMIZE TBC WITH MACROS

Use IronPython scripts and access TBC's objects and calls to write your own commands or encrypt and publish your own macros for distribution online. TBC enables you to solve local requirements and deliverables like never before.

Learn more and get help on TBC's Macros Community, linked through TBC's Trimble Community:

<https://community.trimble.com/groups/trimble-business-center-group>

# SYSTEM REQUIREMENTS

## Operating system

- Microsoft® Windows® 10 (64-bit version)
- Microsoft Windows 8 (64-bit version)
- Microsoft Windows 7 (64-bit version with Service Pack 1)

## Processor

- Dual-core 1.80 GHz or better recommended
- Quad-core 2.80 GHz or better recommended (additional cores with hyper-threading support highly recommended) for Aerial Photogrammetry, Mobile Mapping, and Scanning workflows

## RAM

- 4 GB or more recommended
- 32 GB or more recommended for Aerial Photogrammetry, Mobile Mapping, and Scanning workflows

## Hard Drive

- 10 GB free or more recommended
- 100 GB free on SSD required with overall capacity of 500 GB recommended for Aerial Photogrammetry, Mobile Mapping, and Scanning workflows

## Graphics

- DirectX 11 compatible graphics card with 512 MB memory or more
- OpenGL version 3.2 or later required when working with point cloud data (latest version recommended)
- 8 GB graphics card or higher (NVIDIA Quadro P4000 or similar) required with Aerial Photogrammetry, Mobile Mapping, and Scanning workflows

## Monitor

- 1920 x 1080 or higher resolution with 256 or more colors (at 96 DPI)

## Supported Languages

- Chinese (Simplified)
- Czech
- Danish
- Dutch
- English US
- English UK
- Finnish
- French
- German
- Italian
- Japanese
- Korean
- Norwegian
- Polish
- Portuguese
- Russian
- Spanish
- Swedish

# LEARNING RESOURCES

Interested in TBC but wondering where to start? Want to learn more? We offer a variety of helpful resources to make you productive quickly. Learning TBC has never been easier.

## TBC Power Hour:

A live monthly session where a guest host from Trimble or industry explains and showcases a workflow in TBC. All sessions available afterwards and on-demand, for free:  
[http://infogeospatial.trimble.com/TBC\\_PowerHour.html](http://infogeospatial.trimble.com/TBC_PowerHour.html)

## TBC Website:

Our central site for downloads, support information and bulletins, as well as customer testimonials and videos:  
<http://www.trimble.com/tbc>

## TBC Tutorials:

Follow along with sample data and PDF instructions as we explain and illustrate specific workflows and introductions to TBC:  
<https://geospatial.trimble.com/trimble-business-center-tutorials>

## TBC YouTube Channel:

Watch as our team explains how a specific function works or what's new in our latest release:  
<https://www.youtube.com/user/TBCSurvey>

## Trimble Community TBC Page:

Join your fellow TBC users and ask questions, showcase a project, and learn from your peers in this open online forum:  
<https://community.trimble.com/groups/trimble-business-center-group>

## TBC Facebook Page:

Follow us and look for the latest TBC announcements, webinars, and news:  
<https://www.facebook.com/Trimble-Business-Center>

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