



Updated: October 2022

TBC Resources

How to use this document

The TBC Resources document has been sorted by platform and topic.

On the platform and topic index pages, click on the underlined items to learn more.

[Click here to navigate by platform.](#)

[Click here to navigate by topic.](#)



Trimble Business Center



Complete Survey + Construction
Office Software Enabling Field to
Finish Workflows with Confidence





TBC Resources - Sorted By Platform

TBC Resources - Sorted By Platform - Index

Click on the underlined item to navigate to the slide and learn more.

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- [eLearning](#)
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TBC Geospatial Webpage

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Platform Index,
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Click [here](#) to view the TBC Geospatial Webpage.

Survey Workflows

Trimble Business Center

Office Software for Surveyors

[Download TBC v5.40](#)

[Overview Video](#)

[What's New in v5.40](#)

Trimble Business Center's field-to-finish survey CAD software helps surveyors deliver high-accuracy GNSS data, create CAD deliverables, and leverage full data traceability throughout a project's lifecycle.

- Focus on product information for prospective customers + educational resources for current customers
- Latest Tech Sheet for v5.70 - [English](#)
- Use for:
 - latest version download
 - what's new in the latest version
 - bulletins, white papers, + support notes
 - tutorials + links to webinars, eLearning, sample datasets
 - request TBC training
 - help for licensing + installation



Learn Trimble: Self-paced online TBC courses

Enroll in free workflow-based courses or learning plans to build and sharpen your TBC skills.

[learn.trimble.com](#)



Download Sample Datasets

From survey adjustments to point clouds, experience TBC's capabilities for yourself with our library of sample datasets to download.

[Sample Datasets](#)

Version-specific notes

- **v5.40 Workflow Matrix (December 2020)** - Get an overview of the workflows and routines supported in each of TBC v5.40's editions and modules in this bulletin. [View...](#)
- **v5.40 Command Matrix (December 2020)** - Find what edition or module each command is licensed to in TBC v5.40 with this bulletin. Disclaimer: Trimble reserves the right to change the licensing or make corrections to the program at any time through an update to Trimble Business Center and/or a correction to this list. No guarantees are implied and you should confirm licensing details with your Geospatial Distribution Partner before purchasing. [View...](#)

Product bulletins and Support notes

- **Coordinate Enhancements for CenterPoint RTX Corrections in Trimble Access 2020.20 and Trimble Business Center 5.40 (December 2020)** - Trimble has made significant enhancements to how CenterPoint RTX positions are transformed and match local coordinate systems. Positions are now available in local coordinate systems with greater accuracy, without the need for a site calibration or offset. Please read the Product Bulletin and White Paper to learn about position differences between software versions. Distribute this Bulletin to current CenterPoint RTX customers before upgrading customers to TA 2020.20 and TBC 5.40. [View...](#)
- **Trimble Software: A Guide to Getting the Best Performance with Large Data Sets (July 2020)** - Trimble's suite of software for surveyors offers an array of functionality that saves time and produces high quality deliverables; however, very large data sets can prevent the user from maximizing the full potential of the software. With some pre-planning, the most advantageous configuration of computers and storage devices can be selected to facilitate the transfer and processing of large data sets. [View...](#)

Product Information

[Tech Notes v5.40](#)

[Feature Matrix - v5.40 Editions and Modules](#)

[Power Hour Webinars](#)

[Facebook Page](#)

[YouTube Channel](#)

[Tips Blog](#)

[Bulletins and Updates](#)

[Resources PDF Presentation](#)

Support & Downloads

[Download Trimble Business Center](#)

[Latest Releases - Features and Enhancements](#)

[Community Forum](#)

[Request Training](#)

[Tutorials](#)

[Utilities, License, and Installation Support](#)

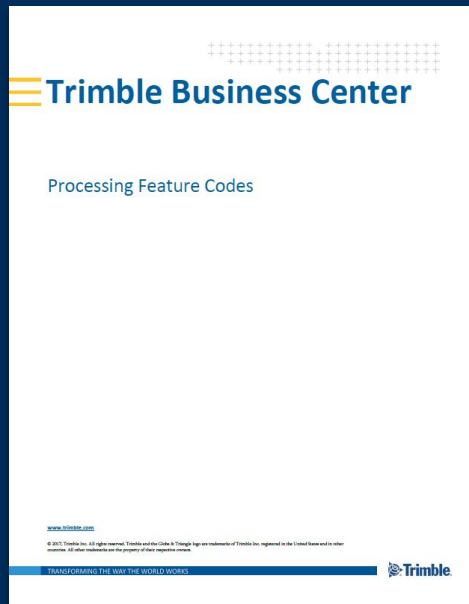
[Trimble Sync Manager](#)



TBC Tutorials

Click [here](#) to view TBC Tutorials.

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Platform Index,
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Trimble Business Center Tutorials

Instructions:

Click the Download link for any of the tutorials below to download a ZIP file containing the tutorial package. When you extract the ZIP file to the location of your choice, a new tutorial folder is created containing tutorial instructions in a PDF document and, as applicable, a VCE project file, a project folder, and a data folder. Just open the PDF tutorial document and follow the instructions.

Download all tutorials

- **All tutorials** — Download a single ZIP file containing all of the available tutorials. Note that the ZIP file is quite large and, depending on your Internet connection, may take a while to download. Alternatively, download any of the individual tutorial ZIP files listed below. [Download](#)

Getting familiar with Trimble Business Center

- **Setting Up a New Project** — Set up a new project, select various project settings, and save the project as a template that can be used for other new projects. [Download](#)
- **Using Spreadsheets, Selection Sets, and COGO Controls** — View spreadsheets, create a selection set, and work with COGO controls. [Download](#)

- ~50 TBC tutorials
- Tutorials include PDF instructions + sample data
- Use for:
 - learning major survey + constructions TBC workflows
 - learning new TBC workflows - tutorials are constantly being added + updated!
 - use as sample workflow + data for training sessions

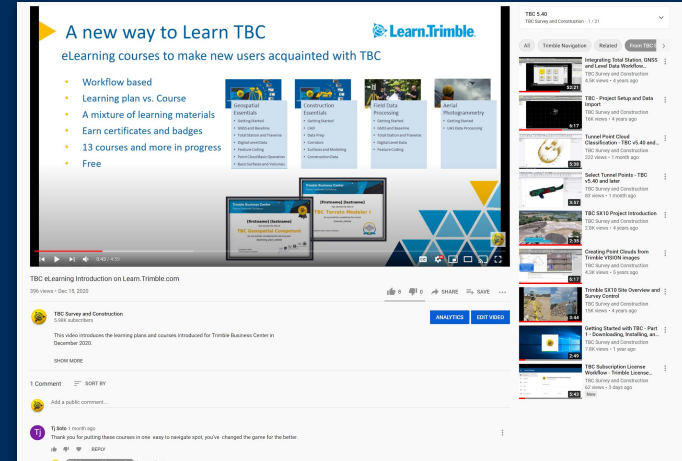
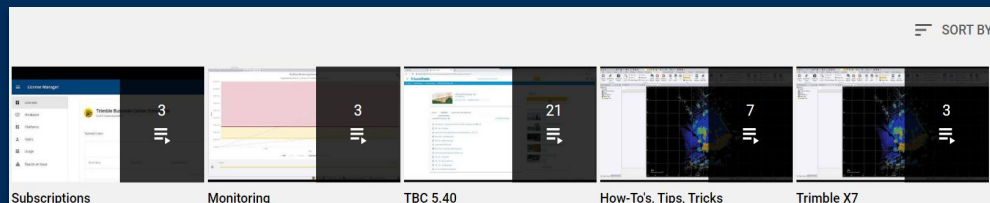
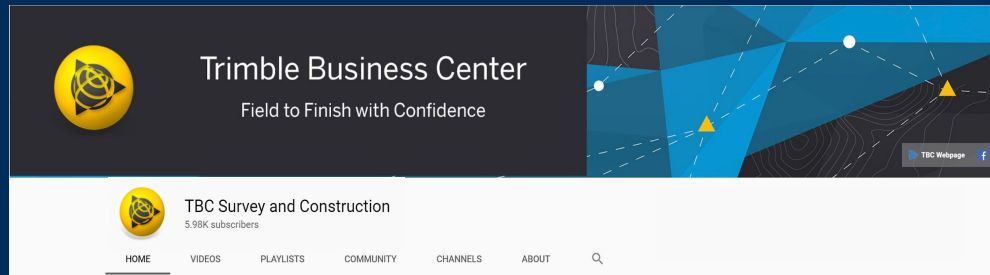


TBC YouTube Channel

Click [here](#) to view the TBC YouTube Channel.

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Platform Index,
click [here](#).

- TBC Survey and Construction channel
- Use for:
 - learning commands or routines in TBC via short (3 - 10 minute) videos
 - explore 30+ workflow-based playlists made up of 330+ videos
 - Latest release - v5.70 - has videos detailing new functionality



TBC Monthly Power Hours

Click [here](#) to view TBC Monthly Power Hours.

- Free live demo or workflow in TBC from a Trimble or industry professional with a Q+A session
- New sessions typically every last Wednesday of the month. Visit this [page](#) to sign up for upcoming webinars.
- All Sessions are archived + available on-demand for free on the [Geospatial Webinar page](#) or via the [TBC Community's Power Hour Vault](#)
- Use for:
 - learning a complete TBC workflows
 - practical information on what others are doing in TBC
 - connecting with industry or Trimble leaders

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Platform Index,
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Trimble Business Center Power Hours

Explore our collection of on-demand TBC Power Hour webinars to learn about workflows and receive industry tips.

 On-Demand Webinar TBC Power Hour: What's New in TBC v5.70 & Trimble Access v2022.00 Watch Video	 On-Demand Webinar TBC Power Hour: How to Streamline Tunnel Data Capture with TBC and Trimble Access Watch Video	 On-Demand Webinar TBC Power Hour: Working with Custom Reports in Trimble Business Center Watch Video	 On-Demand Webinar TBC Power Hour: Network Adjustment Workflows in Business Center Watch Video
 On-Demand Webinar TBC Power Hour: Back to Basics - Nov. 2021 Watch Video	 On-Demand Webinar TBC Power Hour: Combining Aerial and Point Cloud Data for High Accuracy 2D-3D... Watch Video	 On-Demand Webinar TBC Power Hour: Tunnel Convergence Monitoring Workflows Watch Video	 On-Demand Webinar TBC Power Hour: Introduction to the MX50 in TBC Management Watch Video



TBC Tips

Click [here](#) to view TBC Tips.

- Short tip, trick, or command demonstration + documentation
- Part of the TBC Community page
- Organized by category + date, easy to find
- 185+ Tips + counting!
- Use for:
 - exposure to unique features + helpful commands that could be missed or unknown by beginners
 - efficiency gains within TBC
 - great way to learn tools quickly

Field Data

#4 - Spreadsheets - February 2017
#5 - Process Panorama - March 2017
#18 - Visualizing Survey Data in Google Earth - July 2017
#19 - Investigating Data with Point Derivation Reports - August 2017
#27 - "Sunny" Level Editing - February 2018
#33 - Easy* Job to *id File Conversion - March 2018
#43 - New GNSS Planning Online Tool - June 2018
#62 - Observation Vector Arrows - December 2018
#82 - Lock Levelled Scan Data for Registration and Geo Referencing Purposes - August 2019
#101 - Understanding the Session Editor - March 2020
#115 - The Job Converter - July 2020

Adjustment & COGO

#1 - Coordinate Controls - January 2017
#9 - Bearing/Azimuth Angle Controls - May 2017
#22 - Transform Survey Points - January 2018
#29 - Sources of Default Standard Errors - February 2018
#34 - The Power of the Comp Engine and Point Derivation Report - March 2018
#47 - Network Adjustment North/East Components - June 2018
#58 - Average Points vs Merge Points Command - September 2018
#65 - OPUS Alternatives—Post Process Static Data from TBC - January 2019

CAD & Drafting

#2 - Layer Manager - January 2017
#3 - Project Cleanup - February 2017
#6 - Using View Filters - April 2017
#15 - Using the Best-Fit Line Command to Draft Catenary Lines - June 2017
#16 - Using Selection Sets for Time Saving - June 2017
#24 - Label Style Previews - January 2018
#25 - Hiding the Dynaview Frame - January 2018
#32 - Customize Drafting Templates - March 2018
#42 - TBC Point Symbols in AutoCAD - May 2018
#44 - Locking Manual Edits to Feature Coded Geometry - June 2018
#45 - Creating Arcs with PolyLines - June 2018
#46 - Ortho Snaps Modes - June 2018
#48 - Object Snaps - July 2018
#52 - Creating a Point On-Line Between Two 3D Points - August 2018
#56 - Smart Text in Plan Set Templates - September 2018
#61 - Consistent Drafted Deliverables - November 2018

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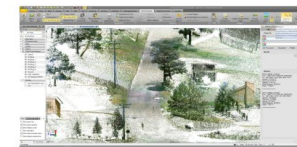
Tip of the Week #10 – Measuring Clearances with Trimble SX10 data

Blog Post created by Billy Smith on May 17, 2017

Like + 1 Comment + 0

This week's topic is a very specific workflow but often required for many topographic and as-built surveys near power infrastructure. Whether it is to design future utilities and structures near power lines or checking clearance for traffic beneath and above, the everyday surveyor needs efficient tools to measure and extract this information.

There are several ways of doing this. To simply measure distances and angles for clearances, you can use the Measure Distance command. Pick two points and view information such as the slope/vertical/horizontal distance values as well as coordinates of the measured location. This command works with point cloud data as well making for a useful QAVOC tool. These measurements can be stored using the Save button.



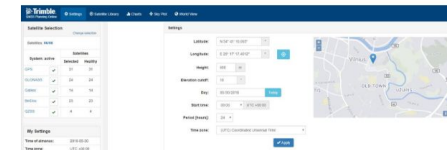
Tip of the Week #43 - New GNSS Planning Online Tool

Blog Post created by Joe Blodhu on May 30, 2018

Like + 5 Comment + 5

Believe it or not, Trimble is not just a provider of world-class field-to-finish survey CAD office software, we make industry-leading GNSS units too, among others! And, we help the broad geospatial community by publishing a new HTML JavaScript-based GNSS Planning Online tool. Check it out at: <http://www.gpsplanningonline.com/>

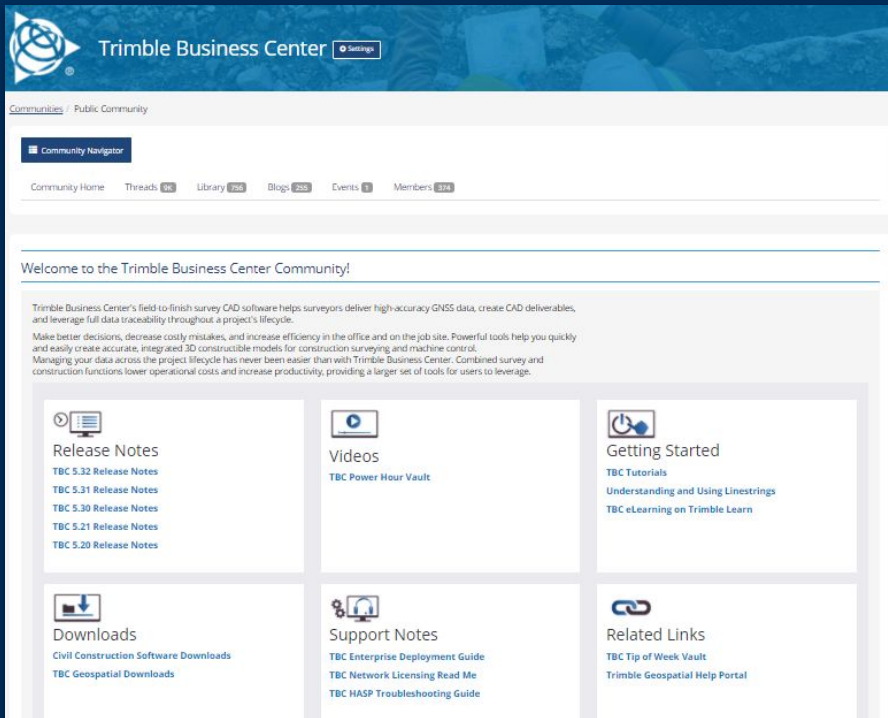
Set your position graphically or with Lat/Longs, enter height, elevation cutoff mask, day and time parameters, along with a constellation toggle to set the satellites you wish to use.



TBC Community

Click [here](#) to view the TBC Community.

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Platform Index,
click [here](#).



The screenshot shows the Trimble Business Center Community website. At the top is the Trimble Business Center logo and a 'Settings' button. Below the header is a 'Community Navigator' bar with links to 'Community Home', 'Threads' (94), 'Library' (25), 'Blog' (25), 'Events' (1), and 'Members' (34). The main content area starts with a welcome message: 'Welcome to the Trimble Business Center Community!'. Below this is a paragraph describing the community's purpose: 'Trimble Business Center's field-to-finish survey CAD software helps surveyors deliver high-accuracy GNSS data, create CAD deliverables, and leverage full data traceability throughout a project's lifecycle. Make better decisions, decrease costly mistakes, and increase efficiency in the office and on the job site. Powerful tools help you quickly and easily create accurate, integrated 3D constructible models for construction surveying and machine control. Managing your data across the project lifecycle has never been easier than with Trimble Business Center. Combined survey and construction functions lower operational costs and increase productivity, providing a larger set of tools for users to leverage.' The page is organized into a grid of six tiles. The first tile is 'Release Notes' with links to TBC 5.32, 5.31, 5.30, 5.21, and 5.20 Release Notes. The second tile is 'Videos' with a link to 'TBC Power Hour Vault'. The third tile is 'Getting Started' with links to 'TBC Tutorials', 'Understanding and Using Linestrings', and 'TBC eLearning on Trimble Learn'. The fourth tile is 'Downloads' with links to 'Civil Construction Software Downloads' and 'TBC Geospatial Downloads'. The fifth tile is 'Support Notes' with links to 'TBC Enterprise Deployment Guide', 'TBC Network Licensing Read Me', and 'TBC HASP Troubleshooting Guide'. The sixth tile is 'Related Links' with links to 'TBC Tip of Week Vault' and 'Trimble Geospatial Help Portal'.

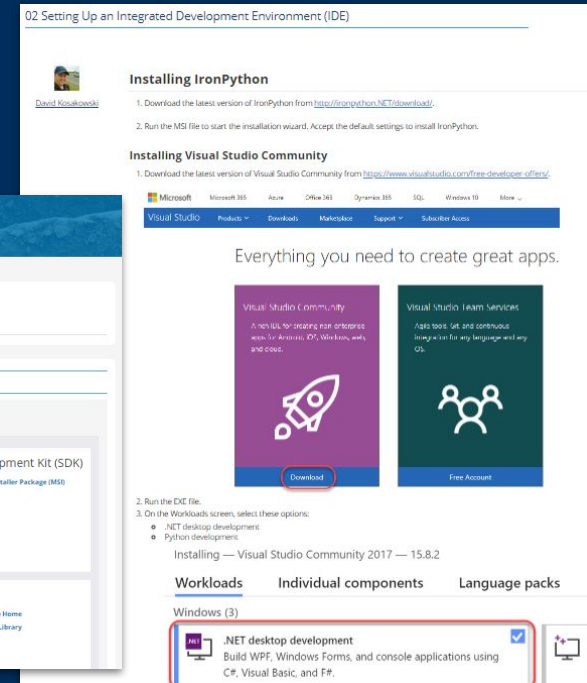
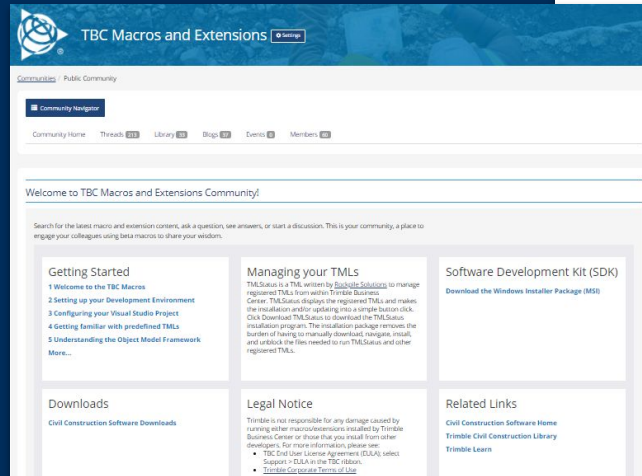
- Joint geospatial + construction public blog for news, questions, + forum topics
- Monitored by TBC team, answers from TBC/Trimble + end users
- Use for:
 - Events + training session announcements
 - Connect with the TBC product team + other users
 - Ask a question or search for existing questions
 - TBC Tips + TBC Power Hour Vault pages



TBC Macros Community

Click [here](#) to view the TBC Macros Community.

- Community forum focused on building + using Macros
- Remember - TBC Advanced perpetual or any TBC subscription license is needed to read the Macros
- Use for:
 - ask questions + learn how write Macros in the Trimble Macro Language (TML)
 - post your macros for distribution + feedback
 - download sample macros from the TBC team + learn about the TBC objects + IronPython scripting



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TBC eLearning

Click [here](#) to view TBC eLearning courses.

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- Self-paced online workflow-based courses through Learn.Trimble.com
 - Four lesson plans - Geospatial Essentials, Construction Essentials, Field Data Processing, + Aerial Photogrammetry
 - 12 courses + counting available across geospatial + construction workflows
- Features a variety of content - watch, read, interact
 - Consolidates existing + new resources in one place
 - Learn by doing in the interactive TBC software simulations
 - Complete workflow without needing a TBC license
 - Get helpful instructions + tips on-demand
- Certificate awarded once completed - display + track your progress
- No cost - create a free account through [Learn.Trimble](#) + access the complete portfolio of TBC coursework



TBC Sample Datasets

To return to
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click [here](#).

Click [here](#) to view TBC Sample Datasets.

- View + download real-world datasets from a variety of workflows + applications
 - Point clouds, station-based images, GNSS, optical, digital level data + more
 - Tunneling, aerial photogrammetry, monitoring, mobile mapping, drafting, topo applications + more
- Use in your TBC to discover new tools + capabilities
 - Can contact your local Trimble Distribution Partner for a demo license.

The screenshot shows the Trimble Geospatial website. The header includes the Trimble logo, a search bar, and navigation links for Products and Solutions, Resource Center, About Us, and Where to Buy. The main content area features several dataset cards:

- TBC Network Adjustment with Multi-Sensor Data**: These two TBC projects demonstrate how to adjust networks containing data from GNSS receivers, total stations, and digital levels. A surveyor's must.
- Building Deformation Monitoring using Integrated Survey**: Utilizing the new Trimble Business Center Monitoring module, the same points were collected at three different epochs to monitor building deformations. Users will learn how to process and manage...
- Tunnel Shotcrete Verification using Scan Data**: Utilizing laser scanning data from a Trimble T80, the Trimble Business Center project demonstrates how to perform tunnel construction control for excavation, shotcrete, and final lining in a NATM...
- Dam Scanning Project**: The point cloud data in this project was collected using the Trimble T2 and was colorized, refined, geo-referenced and exported directly in the field.
- TBM As-Built Scan**: This Trimble Business Center project demonstrates how to perform automatic geo-referencing and classification using SRTM scans for TBM tunnel as-built verification.
- Virtual Survey of an Intersection**: This project demonstrates the capability of Trimble Business Center (TBC) to process and analyze scanning data. Starting with a dataset from an intersection, point and line features are extracted...
- TBC Network Adjustment with Multi-Sensor Data**: These two TBC projects demonstrate how to adjust networks containing data from GNSS receivers, total stations, and digital levels. A surveyor's must.

Virtual Survey of an Intersection

This project demonstrates the capability of Trimble Business Center (TBC) to process and analyze scanning data. Starting with a dataset from an intersection, point and line features are extracted, manually and automatically, with the help of the TBC Scanning Module.

This dataset is part of a large-scale Trimble M30 mapping project in a neighborhood of Westminster, Colorado. Instead of making all the top shots in the field, TBC provides powerful tools for surveyors to complete an intersection survey from a safe office environment.

The point cloud was first classified and cleaned to filter out noise. Point features and linear features are then extracted automatically and manually by TBC, including trees/poles/signs, curbs & gutters, and overhead power lines. A true game-changer in boosting productivity.

Don't have Trimble Business Center? You can download an unlicensed version [here](#).

To download the dataset, please fill in the form on this page.



Download Dataset

* First Name

* Last Name

* Company

* Email

* Country

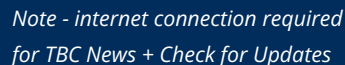
I understand that by submitting my personal information to Trimble I am subject to the Trimble Privacy Notice. I agree that Trimble, its authorized representatives and its group of companies can contact me by email to promote their products and services. I consent to receive digital communications from Trimble. I understand I can opt-out of digital communications with Trimble at any time using the unsubscribe link in Trimble's email communications.

Do Not Sell My Personal Information



- Use for:

- the latest up-to-the minute product news
- download updates to TBC + supported utilities like Coordinate System Manager

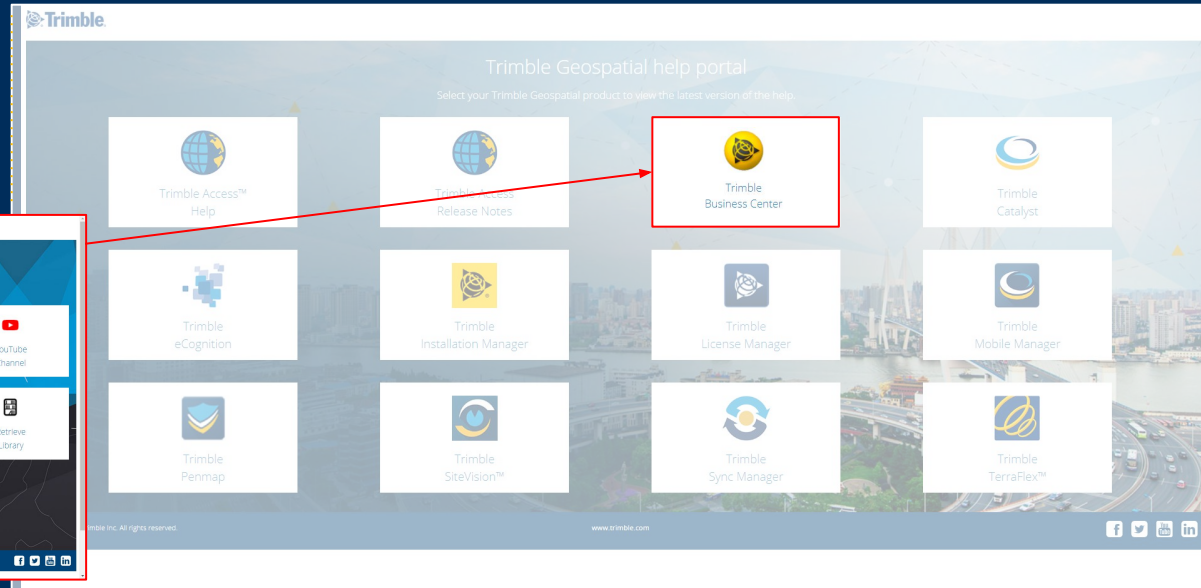
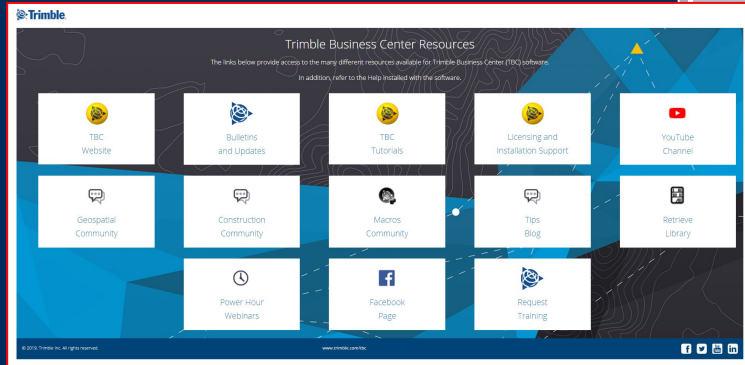


Trimble Geospatial Help Portal

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Click [here](#) to view the TBC Geospatial Help Portal.

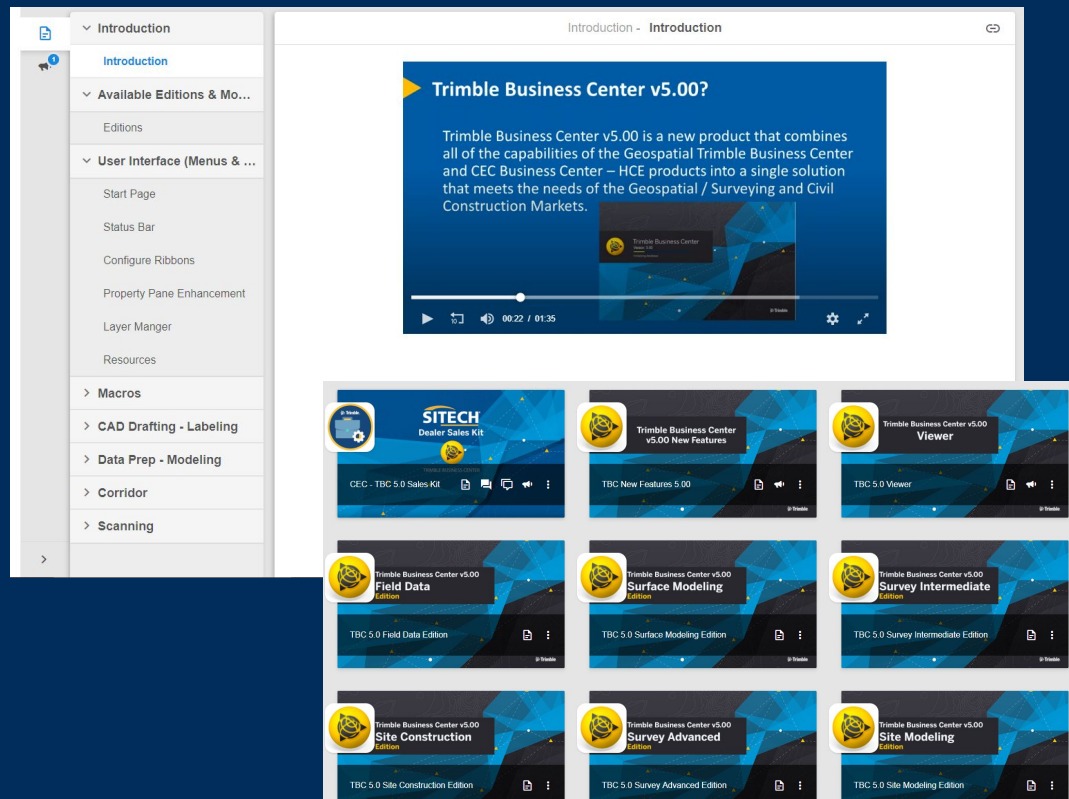
- Gateway to a variety of Trimble Geospatial products - TBC, Trimble Access, Trimble Sync Manager, others
- Use for:
 - starting point for all TBC or other products
 - perfect homepage or bookmark!



TBC Library

Click [here](#) to view the TBC Library.

- Online platform with videos, tutorials, + learning tiles available on-demand
- Available also via Trimble Library mobile app
- Use for:
 - ask questions, post comments
 - track your progress through topics
 - learn about new features + workflows in topic-based playlists + tutorials
 - purchase + save video content



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TBC Resources - Sorted By Topic

TBC Resources - Sorted By Topic - Index

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- [Level](#)
- [Total Station - Traverse](#)
- [Network Adjustment](#)
- [Grid-Ground Relationships](#)
- [Feature Coding](#)
- [Sync Manager, SiteVision, Clarity](#)
- [Point Cloud](#)
 - [General](#); [Registration](#); [Feature Extraction](#)
- [Surfaces + Volumes](#)
- [Corridor](#)
- [CAD + Drafting](#)
- [Aerial Photogrammetry + UASMaster](#)
- [Mobile Mapping](#)
- [GIS Workflows](#)
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- [General + Platform](#)
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GNSS Data - RTK + Baselines

Explore each section by clicking on the hyperlinks below.

● Tutorials:

- [Importing GNSS Data](#)
- [Processing GNSS Baselines](#)

● Power Hours:

- [2015.10 - How to Integrate Total Station, Level, + GNSS Data](#)
- [2016.03 - Integrating RTK, Total Station, Level, + User-entered Data](#)
- [2016.09 - Baseline Processing Workflows](#)
- [2017.06 - Field to Finish with Confidence](#)
- [2020.03 - Find and Correct Common Field Data Errors](#)
- [2021.01 - Untethered Surveying with CenterPoint RTX and TA + TBC](#)
- [2022.02 - Identifying and Resolving Common Field Blunders in TBC](#)

● YouTube Videos:

- [GNSS Playlist](#)
- [Enhanced Baseline Processing with RTX Corrections](#)

● Tips:

- [RTX-PP](#)
- [GNSS Planning Tool](#)
- [Import .zip](#)
- [Understanding the session editor](#)
- [Utilizing the Import Pane](#)
- [An Alternative to OPUS in TBC](#)
- [New GNSS Planning Online Tool](#)
- [Enhanced Baseline Processing with RTX Corrections](#)
- [Edit Multiple Antenna Heights](#)

● Documentation:

- [New GNSS Baseline Processor White Paper](#)
- [New Baseline Engine Product Bulletin](#)
- [CenterPoint RTX Corrections](#)
 - [White Paper](#) + [Product Bulletin](#)



Level Data

Explore each section by clicking on the hyperlinks below.

- **Tutorials:**

- [Importing Digital Level Data](#)

- **Power Hours:**

- [2015.10 - How to Integrate Total Station, Level, + GNSS Data](#)
- [2016.03 - Integrating RTK, Total Station, Level, + User-entered Data](#)
- [2020.09 - Utilizing TBC Level Editor - Features, Functions, Workflows](#)

- **YouTube Videos:**

- [Trimble DiNi Level Import + Process](#)
- [Import Digital Level Data](#)
- [Import Custom CSV Level Data to TBC](#)
- [Leica GSI Level Data Import](#)
- [Keying in Level Data](#)

- **Tips:**

- ["Sunny" Level Editing](#)



Total Station Data + Traverse Adjustment

Explore each section by clicking on the hyperlinks below.

- **Tutorials:**

- [Importing Total Station Data](#)
- [Adjusting Traverses](#)

- **Power Hours:**

- [2015.10 - How to Integrate Total Station, Level, + GNSS Data](#)
- [2016.03 - Integrating RTK, Total Station, Level, + User-entered Data](#)
- [2017.08 - Traverse Adjustment vs. Network Adjustment](#)
- [2020.03 - Find and Correct Common Field Data Errors](#)
- [2020.04 - TBC Recap: Working with Total Station Data](#)
- [2022.02 - Traverse Adjustments and Optical Workflows in TBC](#)

- **YouTube Videos:**

- [Total Station Editor](#)
- [Changing Setup Type in TBC](#)
- [Create + Configure Optical Spreadsheet](#)

- **Tips:**

- [Vector Arrow](#)

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Index, click [here](#).



Network Adjustment

Explore each section by clicking on the hyperlinks below.

- **Tutorials:**
 - [Adjusting the Network](#)

- **Power Hours:**
 - [2016.05 - Network Adjustment Workflow and Best Practice](#)
 - [2020.05 - TBC Recap: Network Adjustment Workflow and Best Practice](#)
 - [2017.08 - Traverse Adjustment vs. Network Adjustment](#)
 - [2019.05 - Relative Positional Precisions](#)
 - [2020.10 - Combined Network Adjustments with Multi-Sensor Data](#)
 - [2022.03 - Network Adjustment Workflows in TBC](#)

- **YouTube Videos:**
 - [Network Adjustments](#)
 - [Enhanced Baseline Processing with RTX Corrections](#)

- **Tips:**
 - [Default Standard Errors](#)
 - [North/East Components](#)
 - [Investigating Data with Point Derivation Reports](#)
 - [Comp Engine and the Point Derivation Report](#)
 - [Sources of Default Standard Errors](#)



Grid-Ground Relationships

Explore each section by clicking on the hyperlinks below.

● Tutorials:

- [Calibrating a Site](#)

● Power Hours:

- [2017.06 - Field to Finish with Confidence](#)
- [2017.07 - Grid + Ground Coordinates](#)
- [2017.11 - Site Calibrations + Local Site Settings](#)
- [2020.03 - Find and Correct Common Field Data Errors](#)
- [2020.04 - NGS 2022 Spatial Reference Framework Modernization](#)
- [2020.07 - Point Cloud Scale Factors](#)

● YouTube Videos:

- [Snake Grid Projections](#)
- [Ground Scale Factor + Ground Distances](#)

● Tips:

- [Visualizing Survey Data in Google Earth](#)

● Documentation

- [Scale Factors in Scanning Workflows in TBC](#)



Feature Coding

Explore each section by clicking on the hyperlinks below.

- **Tutorials:**
 - [Working with Feature Definitions](#)
 - [Processing Feature Codes](#)

- **Power Hours:**
 - [2015.09 - Survey Feature Coding + Attribution](#)
 - [2017.06 - Field to Finish with Confidence](#)
 - [2018.10 - Autodesk Interoperability + Feature Coding](#)
 - [2020.06 - Utilize CAD Command Line to Maximize Productivity](#)

- **YouTube Videos:**
 - [Feature Coding Playlist](#)
 - [CAD Command Line](#)
 - [Measure Codes in the Office](#)

- **Tips:**
 - [Locking Manual Edits to Feature Coded Geometry](#)
 - [TBC Point Symbols in AutoCAD](#)
 - [Export Feature Attributes Command](#)



Sync Manager, SiteVision, Clarity

Explore each section by clicking on the hyperlinks below.

● Tutorials:

- [Exporting Data for Visualization in Trimble SiteVision](#)
- [Sharing 3D Data Using Trimble Clarity](#)

● Power Hours:

- [2018.09 - Office to Field Workflows using Trimble Sync Manager](#)
- [2019.11 - Visualizing Point Clouds Online with Trimble Clarity](#)
- [2020.02 - Augmented Reality Workflows with SiteVision](#)

● YouTube Videos:

- [Data Synchronization in TBC - Trimble Sync Manager](#)
- [Trimble Sync Manager in Two Minutes](#)
- [Trimble Sync Manager Introduction Webinar](#)
- [Publish Geospatial Data from TBC to Clarity](#)
- [Trimble Clarity Playlist](#)

● Documentation:

- [Trimble Sync Manager website](#)
- [Trimble SiteVision website](#)
- [Trimble Clarity website](#)
- [Publish to Clarity Troubleshooting Bulletin](#)

● Tips:

- [Exporting to SiteVision Straight from TBC](#)



Point Cloud - General

Explore each section by clicking on the hyperlinks below.

● Tutorials:

- [Working with Point Clouds](#)
- [Working with Planes](#)
- [Working with Trimble X7 Data](#)

● Power Hours:

- [2016.10 - Topographic Map Creation Using Trimble SX10](#)
- [2016.11 - Trimble SX10 Roading + Corridor Workflows](#)
- [2018.01 - Working with Point Clouds in TBC](#)
- [2019.01 - Using SX10 + Sonarmite Data Together in TBC](#)
- [2019.04 - Scanning Workflows for Street Topo + Structural Facades](#)
- [2019.10 - Introducing the X7 Scanning Solution with TBC](#)
- [2019.11 - Visualizing Point Clouds Online with Trimble Clarity](#)
- [2021.03 - Complete Field to Finish Workflow in TBC: Session 1](#)
- [2021.04 - Complete Field to Finish Workflow in TBC: Session 2](#)
- [2021.07 - Combining Multiple Source Data Sets](#)

● Webinars:

- [Comparing TBC + TRW for Scanning Workflows](#)

● YouTube Videos:

- [Point Clouds Playlist](#)
- [TBC - TRW Comparisons for Scanning Workflows](#)

● Tips:

- [Maximize your PC's RAM for Improved Point Cloud Rendering](#)
- [Point Cloud Ambient Shading](#)
- [Making CAD objects and points using Virtual DR](#)
- [Creating Scan Stations from Total Station scans](#)
- [Extract Ground or Classify Regions?](#)
- [TBC or TRW? Which software package best suits your needs?](#)
- [The Keep In / Keep Out Commands](#)
- [The Add to Region Command](#)
- [Setting a Limit Box](#)
- [Filter Station Scan Points](#)
- [Batch Import of Point Cloud Files](#)
- [Extract Classified Interior Point Cloud Regions](#)
- [Scan Inspections](#)
- [Scan Inspection Report](#)



Point Cloud - General

Explore each section by clicking on the hyperlinks below.



- **Documentation:**
 - [Scale Factors in Scanning Workflows in TBC](#)
 - [Comparing TBC + TRW for Scanning Workflows](#)
 - [White Paper - Guide to Getting the Best Performance with Large Data Sets](#)
 - [White Paper - Deep Dive into Trimble X-Drive Technology](#)
 - [White Paper - Auto-Calibration with Trimble X7 Eliminates the Guesswork](#)



Point Cloud - Registration

Explore each section by clicking on the hyperlinks below.

● Tutorials:

- [Processing Trimble SX10 Data](#)
- [Performing a Plane-Based Registration](#)
- [Working with Trimble X7 Data](#)

● Power Hours:

- [2018.01 - Working with Point Clouds in TBC](#)
- [2019.04 - Scanning Workflows for Street Topo + Structural Facades](#)
- [2021.03 - Complete Field to Finish Workflow in TBC: Session 1](#)
- [2021.04 - Complete Field to Finish Workflow in TBC: Session 2](#)
- [2021.07 - Combining Multiple Source Data Sets](#)

● YouTube Videos:

- [Point Clouds Playlist](#)

● Tips:

- [Lock leveled scan data for registration and georeferencing purposes](#)
- [Maximize your PC's RAM for Improved Point Cloud Rendering](#)
- [Scan registration QA using cutting plane view](#)
- [Using 'measure point' tool to identify scans](#)
- [More efficiency with scan registration](#)
- [Creating Scan Stations from Total Station scans](#)

● Documentation:

- [Product Bulletin - Working with Point Clouds](#)



Point Cloud - Feature Extraction

Explore each section by clicking on the hyperlinks below.

● Tutorials:

- [Extracting Point Features](#)
- [Extract Line Features](#)
- [Working with Linestrings](#)

● Power Hours:

- [2016.10 - Topographic Map Creation Using Trimble SX10](#)
- [2016.11 - Trimble SX10 Roading + Corridor Workflows](#)
- [2018.01 - Working with Point Clouds in TBC](#)
- [2019.01 - Using SX10 + Sonarmite Data Together in TBC](#)
- [2019.04 - Scanning Workflows for Street Topo + Structural Facades](#)
- [2020.11 - Virtual Surveying with Scanning Data - A Case Study of an Intersection](#)
- [2021.03 - Complete Field to Finish Workflow in TBC: Session 1](#)
- [2021.04 - Complete Field to Finish Workflow in TBC: Session 2](#)
- [2021.07 - Combining Multiple Source Data Sets](#)
- [2021.11 - Combining Aerial and Point Cloud Data for High Accuracy 2D/3D Deliverables in TBC](#)

● YouTube Videos:

- [Point Clouds Playlist](#)
- [Intergeo 2020: Turning Cloud Data into Survey Topo Deliverables](#)
- [TBC 5.50 Linear Feature Extraction Enhancements](#)

● Tips:

- [Maximize your PC's RAM for Improved Point Cloud Rendering](#)
- [Point Cloud by Boundary](#)
- [See Inside Point Clouds](#)
- [Using 'measure point' tool to identify scans](#)
- [Making CAD objects and points using Virtual DR](#)
- [Pole Batch Feature Extraction](#)
- [Measure Vertical Clearance Command](#)
- [Exporting a Feature Extraction Attribute Map](#)
- [TBC 5.50 Linear Feature Extraction Enhancements](#)
- [How to Extract Multiple Lines at the Same Time](#)
- [How to Extract Multiple Lines at the Same Time \(Cont.\)](#)
- [Solid Single Lane Lines](#)
- [Solid Double Lane Lines](#)
- [Dashed Lane Lines](#)
- [Sign Inclination](#)

● Documentation:

- [Product Bulletin - Working with Point Clouds](#)



Surfaces + Volumes

Explore each section by clicking on the hyperlinks below.

● Tutorials:

- [Working with Point Clouds](#)
- [Creating Projected Surfaces](#)
- [Working with Surfaces](#)

● Power Hours:

- [2018.06 - Going Vertical in TBC... with Projected Surfaces](#)

● YouTube Videos:

- [Surfaces Playlist](#)
- [Projected Surfaces Playlist](#)

● Tips:

- [Breakline Tolerances for Surfaces](#)
- ["Draping" Ortho Images on Surfaces](#)
- [Staking Cut/Fill Data](#)
- [Reproject Surface to a New Plane Definition](#)
- [Offsetting a Surface](#)
- [Vertical Exaggeration in 3D View](#)
- [Speed up Surface Volume Calculations](#)
- [Donut Surfaces \(Multiple Surface Boundaries\)](#)
- [Setting maximum edge length to trim surface edges](#)
- [Flatten Surface Command](#)
- [Create Surface Intersection Lines](#)
- [Creating Contour Lines Over a Surface](#)
- [The Surface Slicer View](#)
- [The 3D Drive View](#)
- [The Points to Surface Command](#)
- [Create a Surface Elevation Grid](#)
- [Sample Point Cloud Region](#)



Corridor

Explore each section by clicking on the hyperlinks below.

● Tutorials:

- [Working with Corridors](#)
- [Working with Superelevations](#)

● Power Hours:

- [2016.11 - SX10 Roding Workflows in Trimble Access + TBC](#)
- [2018.04 - WYDOT Presents Roding Workflows in TBC](#)
- [2019.07 - Corridor Modeling in TBC](#)

● YouTube Videos:

- [Multi-slice Cutting Plane](#)
- [v5.10 What's New for Construction Workflows](#)
- [Create a Corridor](#)
- [Create a 3D Alignment](#)
- [Road Export](#)

● Tips:

- [Measuring Clearances with SX10 Data](#)
- [Using the Explore Object Command](#)
- [Re-using Road Corridor Templates](#)
- [Undefined in Corridor Template Instruction](#)

● Documentation:

- [Product Bulletin - Strings Export](#)



CAD + Drafting

Explore each section by clicking on the hyperlinks below.

● Tutorials:

- [Working with Linestrings](#)
- [Creating Labels](#)
- [Working with Advanced Drafting](#)
- [Creating COGO Collections and Parcels](#)
- [Working with IFC Data](#)
- [CAD Command Line](#)

● Power Hours:

- [2016.06 - Advanced Drafting Workflows](#)
- [2016.10 - Topographic Map Creation Using Trimble SX10](#)
- [2017.03 - Streamlining Workflows using Templates, Styles, + Libraries](#)
- [2020.06 - Utilize CAD Command Line to Maximize Productivity](#)
- [2021.03 - Complete Field to Finish Workflow in TBC: Session 1](#)
- [2021.04 - Complete Field to Finish Workflow in TBC: Session 2](#)

● YouTube Videos:

- [Advanced Drafting Overview](#)
- [Plotting Plan Sheets with Fixed Scale](#)
- [Create + Edit a Plotbox](#)

● Tips:

- [Layer Manager](#)
- [Project Cleanup](#)
- [Using View Filters](#)
- [Using the Best-Fit Line Command to Draft Catenary Lines](#)
- [Using Selection Sets for Time Saving](#)
- [Label Style Previews](#)
- [Hiding the Dynaview Frame](#)
- [Customize Drafting Templates](#)
- [TBC Point Symbols in AutoCAD](#)
- [Creating Arcs with Polylines](#)
- [Ortho Snap Modes](#)
- [Object Snaps](#)
- [Creating a Point On-Line Between Two 3D Points](#)
- [Smart Text in Plan Set Templates](#)
- [Consistent Drafted Deliverables](#)
- [Referencing to object attributes and creating smart text](#)
- [Naming Bounding Geometries using 'Name from Inside Text'](#)
- [Link a Reference File to a Project](#)
- [Create a Surface from a Reference File](#)
- [Update Reference Data in Your Project](#)



CAD + Drafting

Explore each section by clicking on the hyperlinks below.

- **Tips (continued):**
 - [Understanding the horizontal and vertical components of a linestring](#)
 - [Understanding '?' line elevations](#)
 - [Making CAD objects and points using Virtual DR](#)
 - [Create Fillets & Chamfers with the CAD Command Line](#)
 - [Vector PDF to CAD](#)
 - [Breaking apart objects using the explode command](#)
 - [Processing Panorama](#)
 - [Right-Click Additions](#)

- **Documentation:**
 - [Drafting Webinar Materials](#)



Aerial Photogrammetry + UASMaster

Explore each section by clicking on the hyperlinks below.

● Tutorials:

- [Processing Aerial Survey Data](#)
- [Processing Trimble UX5 HP Aerial Survey Data](#)
- [Processing DJI Aerial Survey Data](#)

● Power Hours:

- [2016.12 - UAS Processing using TBC/UASMaster Workflows](#)
- [2018.08 - Processing Delair UX11 Aerial Data in TBC](#)
- [2020.03 - Processing WingtraOne Drone Imagery](#)
- [2021.06 - UAS Field to Finish Workflows in TBC](#)

● YouTube Videos:

- [Aerial Photogrammetry Playlist](#)
- [Intergeo 2020: Streamline DJI Phantom Workflow](#)

● Tips:

- [Creating Orthorectified Image for Facade Reconstruction - Using Multiple Stations](#)
- [Quick + Clean Facade Segmentation for Orthophotos](#)
- [Removing parallax from station view](#)
- [The Capture Image Command](#)
- [Updated TBC Photogrammetry Ribbon](#)
- [Determine the Coordinate System of an Aerial Photogrammetry Dataset](#)

● Documentation:

- [UASMaster website](#)
- [Advanced UAS Workflow + Best Practices](#)
- [TBC Aerial Photogrammetry Concepts + Workflows](#)



Mobile Mapping

Explore each section by clicking on the hyperlinks below.

● Power Hours:

- [2019.02 - MX9 Mobile Mapping Workflows in TBC](#)
- [2020.01 - New v5.20 Mobile Mapping Features](#)
- [2021.05 - MX9 Workflows + Corridor Design](#)
- [2021.08 - Intro to the MX50 in TBC: Asset Management](#)
- [2022.05 - MX9 Processing and Data Preparation for Corridor Deliverables](#)

● YouTube Videos:

- [Mobile Mapping Playlist](#)
- [Mobile Mapping Channel](#)

● Documentation:

- [Product Bulletin - MX9 Best Practices v3](#)
- [Mobile Mapping Solutions Website](#)

● Mobile Mapping Webinars:

- [Mobile Mapping Webinar Center](#)

● Tips:

- [Measuring Clearances with SX10 Data](#)
- [Mobile Mapping Point Cloud Classification Trick](#)
- [Go To a Mobile Mapping Station Position](#)



GIS Workflows

Explore each section by clicking on the hyperlinks below.

- **Tutorials:**

- [Working with Feature Definitions](#)
- [Processing Feature Codes](#)
- [Integrating Survey + GIS Data](#)
- [Processing TerraSync SSF Data](#)

- **Power Hours:**

- [2015.09 - Survey Feature Coding and Attribution](#)
- [2015.11 - How to seamlessly integrate Survey data with GIS data](#)
- [2020.08 - TBC GIS Module, where Surveying and GIS Intertwine](#)

- **YouTube:**

- [GIS Playlist](#)

- **Tips:**

- [Export Feature Attributes Command](#)



Custom Reporting

Explore each section by clicking on the hyperlinks below.

- **Tutorials:**
 - [Creating Custom Reports](#)

- **Power Hours:**
 - [2017.02 - Data Traceability using Customized Reports](#)
 - [2022.04 - Working with Custom Reports in TBC](#)

- **YouTube Videos:**
 - [Job Report Generator](#)
 - [Adobe PDF Reports](#)
 - [Volumetric Reports](#)
 - [Area Count Length Report](#)

- **Tips:**
 - [Report Options](#)



Data Prep

Explore each section by clicking on the hyperlinks below.

- **Tutorials:**

- [Importing As-Staked Points](#)
- [Performing Data Prep](#)
- [Working with Field Data for SCS + GCS](#)

- **Power Hours:**

- [2018.11 - Three Construction Survey Workflows in TBC](#)
- [2019.06 - Site Modeling in TBC](#)
- [2020.08 - Working with the Create Vertical Design Tool in TBC](#)

- **YouTube Videos:**

- [Data Prep Workflows](#)
- [IFC Models Prep for Stakeout](#)

- **Tips:**

- [Auto-Advance](#)
- [Doing Math in TBC](#)
- [Image Georeferencing](#)
- [Create Linestring by Station + Offset](#)
- [Exporting to Sitevision Straight from TBC](#)
- [Specify As-Staked Point Tolerances](#)



Tunneling

Explore each section by clicking on the hyperlinks below.

- **Tutorials:**

- [Creating a Tunnel Design](#)
- [Working with Tunnel As-Built Points](#)
- [Performing a Tunnel Inspection](#)

- **Power Hours:**

- [Tunneling Webinar Home Page](#)
- [2018.05 - Going Underground in TBC... with Tunnels](#)
- [2020.05 - Tunneling Workflows in TBC](#)
- [2021.02 - Tunneling Surveying, Improved: Digging into the SX12, TA and TBC](#)
- [2021.09 - Tunnel Convergence Monitoring Workflows](#)
- [2022.06 - How to Streamline Tunnel Data Capture with TBC and Trimble Access](#)

- **YouTube Videos:**

- [Tunneling Playlist](#)

- **Website:**

- [Trimble Tunneling Solutions](#)



Cadastral + COGO

Explore each section by clicking on the hyperlinks below.

- **Tutorials:**
 - [Using Spreadsheets, Selection Sets, + COGO Controls](#)
 - [Creating COGO Collections + Parcels](#)
 - [CAD Command Line](#)

- **Power Hours:**
 - [2017.10 - Legal Description Writer + Map Closures](#)
 - [2018.03 - COGO Routines](#)
 - [2018.07 - TBC Cadastral Workflows](#)

- **YouTube Videos:**
 - [Cadastral Playlist](#)

- **Tips:**
 - [Coordinate Controls](#)
 - [Bearing/Azimuth Angle Controls](#)
 - [Transform Survey Points](#)
 - [Average Points vs Merge Points Command](#)
 - [Use the Single Proportioning Command to Re-establish a Corner](#)



Monitoring

Explore each section by clicking on the hyperlinks below.

- **Tutorials:**

- [Monitoring Point Movement](#)

- **Power Hours:**

- [Monitoring Webinar Home Page](#)
- [2020.11 - Manual Monitoring with TBC](#)
- [2021.09 - Automated Movement Detection for Mining Applications](#)
- [2022.08 Determine the Best Field and Office Tools for Your Campaign Monitoring Toolkit](#)

- **YouTube Videos:**

- [Monitoring Playlist](#)

- **Website:**

- [Trimble Monitoring Solutions](#)



Construction

Explore each section by clicking on the hyperlinks below.

- **Tutorials:**

- [Working with Field Data for SCS and GCS](#)
- [Exporting Data for Visualization in Trimble SiteVision](#)
- [Calculating Takeoff Volumes for a Simple Site](#)
- [Analyzing Mass Haul for a Simple Site](#)

- **Power Hours:**

- [2019.06 - Site Modeling](#)
- [2019.09 - IFC Workflows between TBC + Trimble Access](#)
- [2019.12 - Vectorized PDF - Importing PDF Based Section Conversion](#)
- [2020.02 - Augmented Reality Workflows with SiteVision](#)
- [2020.02 - WorksManager Integration in TBC](#)
- [2020.08 - Working with the Create Vertical Design Tool in TBC](#)
- [2020.09 - Using TBC and WorksManager/WorksOS to create the Landfill Solution](#)
- [2020.10 - Using Machine Data to Create a Subsurface As-Built](#)
- [2022.09 - Constructible Road Corridors in TBC and Trimble Access](#)



TBC General + Platform

Explore each section by clicking on the hyperlinks below.

● Tutorials:

- [Setting Up a New Project](#)
- [Using Spreadsheets, Selection Sets, and COGO Controls](#)

● You Tube Videos:

- [Introduction to eLearning on Learn.Trimble](#)

● Power Hours:

- [2020.12 - What's New in TBC v5.40](#)
- [2021.03 - Complete Field to Finish Workflow in TBC: Session 1](#)
- [2021.11 - Back to the Basics - Customizing TBC to Simplify Field Finish Workflows](#)
- [2022.06 - What's New in TBC v5.70 & Trimble Access v2022.00](#)

● Tips:

- [Customized Keyboard Shortcuts, Ribbons, + the Quick Access Toolbar](#)
- [Tricks and Right-Clicks](#)
- [Tips and Zips \(Importing a .zip file\)](#)
- [TBC Help is Closer than You Think](#)
- [Where are all the TBC Report Settings at?](#)

● Tips (continued):

- [Your New Home Page...](#)
- [Version Upgrade Eligibility](#)
- [Available License Servers](#)
- [Graphic Selection Methods](#)
- [Quick Zoom Extents](#)
- [Save Reminders](#)
- [Context Menu Customization](#)
- [Freehand \(Lasso\) Selection](#)
- [View Filter Manager Shortcuts](#)
- [Background Map to Verify Data](#)
- [Dock the Properties](#)
- [Guided Workflows Directly from TBC Help](#)
- [Drag and Drop Data Import](#)
- [Selection Box in Commands](#)
- [Make Objects Unselectable](#)
- [Customizing the Ribbon Tabs](#)
- [Even More Granular Visibility with Selection Sets](#)
- [How the Geoid affects Height and Elevation computations](#)
- [Adding to layer using plan view](#)
- [Creating different viewpoints using the 'Defined Views' command](#)



TBC General + Platform

Explore each section by clicking on the hyperlinks below.

● Tips (continued):

- [Easy navigation to commands using the 'command pane'](#)
- [Presentation of your data using TBC](#)
- [Modify your selections using Advanced Select](#)
- [Help getting started with major workflows instructions](#)
- [Finding points in the graphical views](#)
- [Expanding functionality using TML's](#)
- [Understanding coordinate quality symbols](#)
- [Keeping track of your work using the 'History Log'](#)
- [Changing the display settings of image files](#)
- [Understanding the different icons in the Project Explorer](#)
- [Utilizing the Import Pane](#)
- [Right Clicking in the Command Pane](#)
- [Release Notes Shortcut](#)
- [The Edit Shortcut](#)
- [Unzipping & Zipping a VCE File](#)
- [Create a 3D PDF](#)
- [Disabling a Laptop Integrated Graphics Card](#)
- [TBC eLearning](#)
- [Importing a Newer VCE File into an Older TBC Version](#)
- [TBC Sample Datasets](#)
- [Spreadsheets](#)

● Tips (continued):

- [Easy *.job to *.jxl File Conversion](#)
- [The Job Converter](#)
- [A Surveyor's Glossary](#)
- [Time-Dependent Transformation Enhancement in TBC v5.40](#)
- [TBC Subscription Licensing](#)
- [The Add Legend Command](#)
- [Work with GIS Data Sources in TBC](#)
- [Manage GIS Connections](#)
- [Download \(Get\) a GIS Schema & Export it to a FXL File](#)
- [How to Change the Quality of Multiple Points at Once](#)
- [Upload \(Write\) Processed Features to a GIS Data Source](#)
- [Rotate Your Data in Plan View](#)
- [Display Alternate Distance Unit](#)
- [Navigating the View: Mouse Controls in TBC](#)
- [Display Alternate Units for Velocity and Area](#)
- [Assign Media File to a Point](#)
- [Change Project Settings \(Transparency of Imported PDFs and Point Color\)](#)
- [New User Profile Capabilities](#)
- [View Spreadsheets](#)



TBC General + Platform

Explore each section by clicking on the hyperlinks below.

- **Tips (continued):**

- [Top Tips to Get Started in TBC](#)
- [Sort Imported Files by Filename or Import Order](#)
- [Select Similar Objects](#)
- [Review Objects by Layer Using the View Filter Manager](#)
- [Run Previous Commands](#)
- [Set the Pick Aperture](#)
- [Copying Spreadsheets from TBC](#)
- [Coordinate System Manager Help](#)
- [Defining & Customizing Command Shortcuts](#)
- [Updating Trimble Business Center](#)
- [Visual & Auditory Learning & Support \[YouTube & Power Hours\]](#)



Subscription Licensing

Explore each section by clicking on the hyperlinks below.

- **YouTube Videos:**

- [Subscription License Workflow - Complete Workflow](#)
- [Subscription License Workflow - Part 1 - Trimble License Manager](#)
- [Subscription License Workflow - Part 2 - TBC](#)

- **Documentation:**

- [Perpetual to Subscription License Mapping](#)
- [Subscription FAQ](#)
- [Subscription Workflow Matrix](#)





Updated: July 2022

TBC Resources