



Business Center - HCE

CONSTRUCTION PACK ADVANCED

ALL THE POWER OF BUSINESS CENTER - HCE

Managing your data has never been easier with Business Center - HCE from Trimble. The Construction Pack Advanced brings the power of all the major Business Center - HCE modules (Surface Tools, Image Manager, Data Prep, Takeoff, Site Mass Haul, Road Takeoff Tools, Corridor Mass Haul and Intersection Design) and adds the Advanced Drafting tools.

The additional drafting functionality brings polished design to your presentation, work plans or as-built information.

- ▶ Streamline your entire workflow from estimation, to design through preparation and to drafting
- ▶ Rapidly generate or edit drawings to improve accuracy and reduce rework

KEY FEATURES

Core Product Functionality

Business Center - HCE software core functionality does much more than just import and export.

- ▶ Creation, editing and visualization commands
- ▶ Import AutoCAD DXF/DWG, Microstation DGN, ICM, LandXML, ASCII points, files from many Trimble systems or other third party systems
- ▶ Create and edit alignments, site calibration, surfaces and points, and breaklines to refine surfaces
- ▶ Calculate volumes between surfaces and measure the bearing and distance between objects
- ▶ Cost-efficiently find and fix errors before they are sent to the field by visualizing and editing in 3D
- ▶ Export to many file formats for maximum versatility

The Core Product is available as a free download, add-on modules extend the functionality of Business Center - HCE.



Key Benefits

Business Center - HCE contains powerful tools to help you quickly and easily create accurate, integrated 3D constructible models for sites, corridors and marine applications. Make better decisions, decrease costly mistakes, and increase efficiency in the office and on the job site.

- ▶ Rapidly create and edit, generate reports and publish information
- ▶ Reduce rework by ensuring data is clean, up-to-date and delivered in the right format to get the job done
- ▶ Win more bids by preparing earthwork and construction models quickly and accurately with expanded levels of detail
- ▶ Increase profit by optimizing the creation of site and corridor models
- ▶ Reduce drive time by effectively and seamlessly managing data between the office and field
- ▶ Works seamlessly with Trimble® SCS900 Site Controller Software, Trimble GCS900 Grade Control System, Trimble Earthworks Grade Control Platform, Trimble PCS900 Paving Control System, Trimble CCS900 Compaction Control System and Cat® AccuGrade™ Grade Control Systems

Modules

KEY FEATURES

Advanced Drafting Module

The Advanced Drafting Module has essential drafting functionality for contractors, engineers and surveyors to better present designs, work plans and as-built information.

Speed up your drafting with automatic cross sections, add bearings and distances, label contour lines and produce plan and profile sheets. Place Dynaview frames in plan, profile or super-elevation views, and control which layers are displayed with Dynaview view filters.

Reduce rework and repetition by creating blocks from your own elements, then import images to give those sheets a crisp, modern look.

- ▶ Plot color-coded elevation data to help visualize the surface
- ▶ Build sheets and drafting templates
- ▶ Fillet/Chamfer
- ▶ Flip Azimuth Bearing Label
- ▶ Import and insert blocks and images
- ▶ Label contours, lines, points and polygons utilizing style managers
- ▶ Point Symbols
- ▶ Swap Label Sides
- ▶ Create tables listing point, line or polygon labels

Create and edit:

- ▶ 3D Adobe® PDFs and custom sheets
- ▶ Contours and angular dimensions
- ▶ Blocks, leader lines and linear dimensions
- ▶ Line, point and polygon label tables
- ▶ Customized plan sets and sheet sets to your standards and formats
- ▶ Scale bars
- ▶ Dynaview boundary collections

Road Takeoff Tools Module

Convert digital CAD cross-sections, rapidly extract cross-section information from Adobe® PDF vector files to create corridor models and quickly see locations and quantities of materials. Save time, reduce rework and increase bidding accuracy with Business Center - HCE.

The Road Takeoff Tools module provides additional commands to help with data processing. Adobe® PDFs can be converted and displayed for orientation and material layers can be extracted with on-screen digitization. Cross-sections can be added to the corridor definition, and volume/area reports can be created and used for initial mass haul analysis.

- ▶ Digitize, edit and track cross-sections
- ▶ Create and edit Corridor Boring Logs
- ▶ Material and Site Improvement Manager
- ▶ Define corridor strata

Takeoff Module

Save time and decrease the learning curve by using one piece of software to apply site improvements to specify materials and depths, and get an accurate report of quantities and costs for site takeoffs.

- ▶ Send takeoff modeling to the field for stakeout and grading
- ▶ Analyze earthwork balance
- ▶ Validate site improvement areas
- ▶ Build takeoff surfaces and categorize takeoff layers
- ▶ Compute region volume
- ▶ Configure subgrade adjustments
- ▶ Track region outline
- ▶ Use excess topsoil

Create, edit and define:

- ▶ Area/length/count and boring log reports
- ▶ Boundaries by site improvement
- ▶ Custom reports
- ▶ Areas of interest
- ▶ Strata
- ▶ Topsoil stripping areas
- ▶ Site regions
- ▶ Over Excavation



Corridor Mass Haul and Intersection Design Module

The Corridor Mass Haul and Intersection Design Module offers a unique workflow which allows the automated generation of fully parametric corridor intersections, roundabouts and cul-de-sacs. This unique workflow reduces the complex and labor-intensive design task to minutes. Quickly define turn lanes, rapidly adjust the configuration and see the results of the fully 3D intersection object as changes are made.

Define haul roads and costs, compute borrow and waste requirements. Assign haul and material costs for earthworks bidding, and compute mass haul for specific sites and corridors to ensure that you operate at maximum efficiency for maximum profitability.

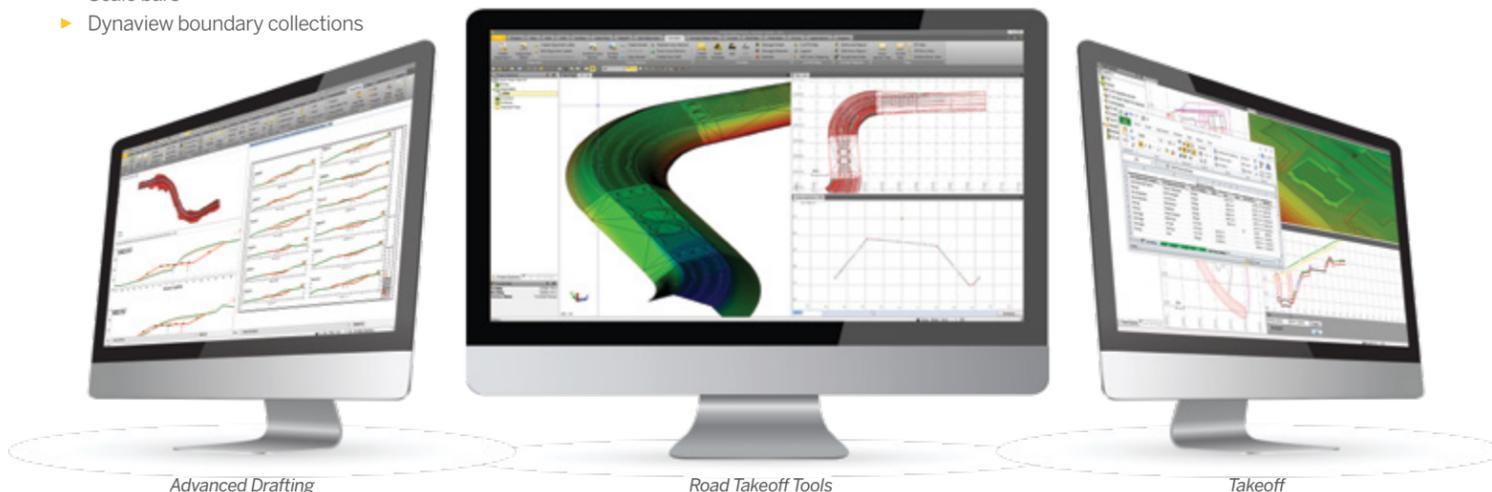
With this module, your mass haul plan can consider ground strata, waste and borrow areas, construction barriers, equipment haul ranges and the processing of excavated materials into useful fill materials.

Once planned, share the cut and fill areas with Trimble VisionLink® and any field devices to minimize rework and errors, and get everyone on the same page. Move material once, know how much is needed and how much is moved to save time and money.

- ▶ Load intersection template
- ▶ Rotate intersection legs
- ▶ Check intersection geometry
- ▶ Corridor mass haul diagram and report
- ▶ Archive and auto-balance mass haul
- ▶ Mass haul balance view and editor
- ▶ Refresh Mass Haul Analysis
- ▶ Balance line reports and mass haul at grade point

Create, edit and define:

- ▶ Intersections
- ▶ Corridor boring logs and mass haul analyses
- ▶ Material processing reports
- ▶ Earthworks sites
- ▶ Haul ranges and haul roads
- ▶ Mass haul barriers, exports and imports
- ▶ Corridor strata and site materials



Advanced Drafting

Road Takeoff Tools

Takeoff

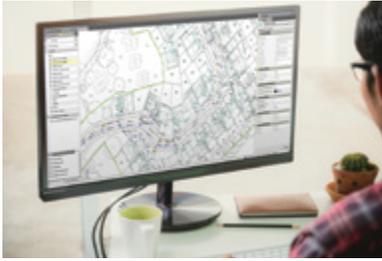


Image Manager Module

The Image Manager Module provides the ability to import, georeference and place images. Imported images can be draped onto surfaces and generate 3D views and presentations of your project. Adobe® PDF files can be quickly converted to CAD data to allow for fast model creation.

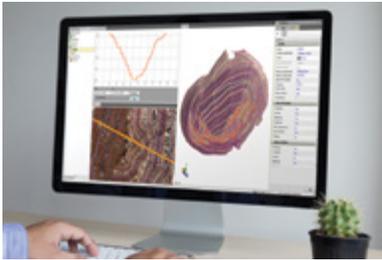
- ▶ Georeference and automatically convert Adobe® PDF files to CAD, including vectors
- ▶ Toggle background map to visualize how your design interacts with Mapbox, OpenStreetMap
- ▶ Add/remove image boundaries to easily merge data from multiple Adobe® PDF sheets
- ▶ Automatically tile images to increase display speed
- ▶ Capture 3D and screen images for use in other applications
- ▶ Copy View to clipboard



Data Prep Module

Since surfaces and volumes can only be calculated once the data is properly elevated, the Data Prep Module quickly converts 2D or improperly elevated CAD data into objects that can be sent to the field for construction. The Project Cleanup command saves hours-to-days by cleaning up messy CAD data.

- ▶ Remove unused block definitions, layers, duplicate lines, unused text styles, zero length lines and similar data
- ▶ Join lines and filter vertices from lines that are not needed
- ▶ Clip, trim, extend and offset lines, and track region outline
- ▶ Create, rebuild and edit alignment labels
- ▶ Create points from spot elevations
- ▶ Elevate contour, contours by crossing, contours by label, lines and pads



Surface Tools Module

The Surface Tools Module adds functionality for creating and editing both surfaces and alignments, essential to find and fix errors before they are sent to the field for construction.

- ▶ Add and remove surface boundaries for accurate volume calculations
- ▶ Review as-staked corridor reports
- ▶ Update cut/fill volumes automatically and quickly, even with large data sets
- ▶ Clip lines
- ▶ Densify an alignment-based surface
- ▶ Drape image objects over surfaces
- ▶ Process feature codes

Create and edit:

- ▶ Point cloud regions and points from CAD objects
- ▶ CAD points from scan points
- ▶ Cut/fill maps
- ▶ Linestrings from points
- ▶ Stored cross sections
- ▶ Surface ties, edge breaklines and grids
- ▶ Station offset elevation reports
- ▶ Alignment superelevation



Site Mass Haul Module

Reduce costs and improve profits by efficiently moving earth only once. The Site Mass Haul Module helps determine how much to move, from where, to where, and what it will cost to get it all done.

- ▶ Archive and auto-balance mass haul
- ▶ Convert CAD data to haul roads
- ▶ Mass haul balance view and editor
- ▶ Define site materials and edit color mapping
- ▶ Create cut/fill maps, earthworks sites, haul roads, site mass haul analyses and site mass haul reports
- ▶ Material processing reports

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