22 Sessions: 2022 Virtual Workshop

A Virtual Workshop series featuring Carlson Software training in CAD fundamentals, survey workflows, field data collection, hydrology and point cloud processing

The 2022 Virtual Workshops start with CAD fundamentals in IntelliCAD and AutoCAD and an introduction to Carlson, then move into survey, civil and hydrology workflows. Scott Griffin and Carlson staff present a software showcase and round tables on field software, desktop tools and Precision 3D hydrology. Doug Aaberg leads Field-to-Finish, Mark Long covers civil design and later sessions include user case studies on wet ponds, pervious pavers, fire flow, live field design and tips from Travis Maxwell, Finch & Associates and Bill Dennis.

Key Topics:

- Carlson and IntelliCAD setup, command shortcuts, object snaps and precise drafting
- Carlson CAD standards for layers, blocks, dimension styles, templates and custom linetypes
- Carlson survey points, deed entry and correlation, annotation and legal descriptions
- Carlson Field-to-Finish, TIN surfaces, contours and GIS imagery
- Carlson layouts, viewports, legends, title blocks, sheet

sets and PDF plotting
- Carlson 2023 drawing cleanup, CADnet PDF and BIM tools, retaining walls and subdivision layouts
- Carlson SurvPC field least squares, BIM stakeout, map overlays and Cloud data exchange
- Carlson BRx7 GNSS, hybrid robotic surveying and drone hardware demonstrations
- Carlson Hydrology and Precision 3D Hydro pond routing, storm networks and parametric inlets
- Carlson Point Cloud LAS imports, ortho imagery, bare earth extraction and automated feature extraction

Sessions In This Series:

- 1-1: Introduction to CAD, presented by Jennifer DiBona
- 1-2: Introduction to CAD, presented by Jennifer DiBona
- 1-3: Introduction to CAD, presented by Jennifer DiBona
- 2-1: Introduction to Carlson, presented by Jennifer DiBona
- 2-2: Introduction to Carlson, presented by Jennifer DiBona
- 2-3: Introduction to Carlson, presented by Jennifer DiBona
- 3-1: Carlson Software Showcase: Overview of Carlson, presented by Scott Griffin
- 3-2: Carlson Software Showcase: Field Software Round Table, panelists: Sarah Winter, John Gerber, Dough Aaberg & Butch Herter
- 3-3: No Recording
- 3-4: Carlson Software Showcase: Desktop Software Round Table, panelists: Leonid Entov, Lon Watson, Mark Long, Scott Griffin & Doug Aaberg
- 3-5: Carlson Software Showcase: Hydrology & P3D Round Table, panelists: Bruce Carlson, Shan Lu & Mark Long
- 3-6: Carlson Software Showcase: Hydrology & P3D Round Table, panelists: Bruce Carlson, Shan Lu & Mark Long
- 3-7: No Recording
- 4-1: Field to Finish from Start to Finish, presented by

Doug Aaberg

- 4-2: Field to Finish from Start to Finish, presented by Doug Aaberg
- 4-3: Field to Finish from Start to Finish, presented by Doug Aaberg
- 5-1: Civil Design in Carlson Software, presented by Mark Long
- 5-2: Civil Design in Carlson Software, presented by Mark Long
- 5-3: Civil Design in Carlson Software, presented by Mark Long
- 6-1: User Case Study: Wet Pond Design for Multi-Family Development, presented by Travis Maxwell
- 6-2: User Case Study: Pervious Paver Parking Lot Design, presented by Finch & Associates
- 6-3: User Case Study: Fire Flow Analysis Case Study, presented by Travis Maxwell
- 6-4: User Case Study: Live Field Design, presented by Bill Dennis of Civil Design Team LLC
- 6-5: Tips & Tricks in Carlson Software, presented by Travis Maxwell

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*These sessions were presented by Jennifer DiBona and Carlson staff*Jennifer DiBona opens with CAD fundamentals, the IntelliCAD

interface and drafting precision.Jennifer DiBona covers layers, properties, blocks, dimension styles and drawing templates.Jennifer DiBona explains linetypes, linetype scales and paper space layouts and viewports.







Jennifer DiBona introduces Carlson 2023 setup, configuration, project folders and annotation standards.Jennifer DiBona covers annotation settings, templates, CRD points and deed tools.Jennifer DiBona ties together Field-to-Finish, surfaces, GIS imagery, legends and





plotting.Scott Griffin showcases Carlson 2023, including drawing cleanup, Field-to-Finish, CADnet and B tools.Carlson staff discuss SurvPC 7 updates, field least squares, BIM stakeout and map overlays.





Carlson staff answer desktop software questions on the 2023 release, CUI customization and civil tools.Bruce Carlson, Shan Lu and Mark Long discuss hydrology workflows and Precision Hydro.Bruce Carlson continues the hydrology and Precision 3D discussion with storm



sewer and inlet design.Doug Aaberg starts Field-to-Finish from code tables and special codes through automated linework.



Doug Aaberg continues Field-to-Finish with special codes, templates, finishes Field-to-Finish with symbol rotation, pipes, trees and automated labeling.Mark Long begins civil design with LotNet subdivision layout and RoadNet setup.Mark Long continues RoadNet with templates, intersections, super elevation and cul-de-



symbols and layer setup.Doug Aaberg







sacs.Mark Long designs sanitary and storm networks and merges surfaces in Carlson Civil and Hydrology.Travis Maxwell presents a wet pond design case study for a multi-family site in HydroNet.

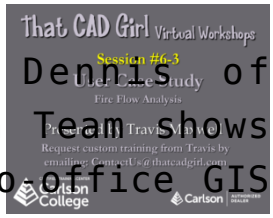






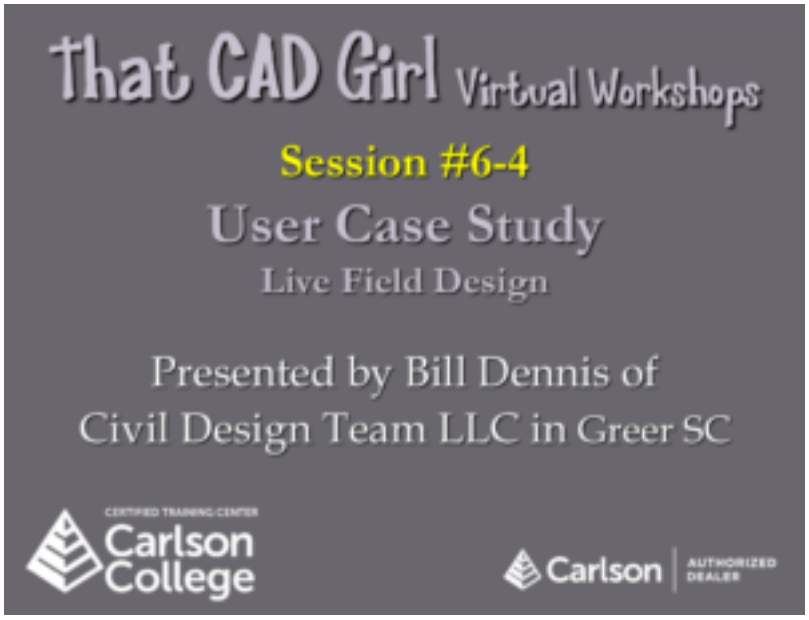
Finch & Associates present a pervious paver parking lot stormwater case study in HydroNet.Travis Maxwell presents a fire flow analysis case study with Carlson pressure pipe tools.Bill Dennis of Civil Design Team shows live field-to-office GIS and CAD design





techniques.Travis Maxwell shares project-data tips using tables, custom fields, sheet sets and LiDAR.





2022 Virtual Workshops Session 1-1: Introduction to CAD

A Virtual Workshop Using Carlson Software – Learn CAD Fundamentals, Workspaces and Precision Drafting

The opening session of the 2022 Virtual Workshops introduced participants to IntelliCAD 2023 and Carlson 2023, focusing on CAD fundamentals, interface navigation and drafting precision. Jennifer DiBona guided attendees through command usage, settings, object snaps, polylines, text tools and practical workflow tips for survey and civil design professionals.

Key Topics:

- Overview of Carlson 2023 (IntelliCAD 10.1) release and stability improvements
- CAD interface elements: command line, toolbars, menus, ribbons, workspaces
- Default settings, command aliases and saving with backups
- Object snaps (OSNAP) and precision drafting
- Lines vs. polylines, grips and selection methods
- Text creation (single-line vs multi-line) and editing

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This session was presented by Jennifer DiBona on 11/15/2022.

2022 Virtual Workshops Session 6-5: Tips & Tricks and Management of Project Data

A Virtual Workshop Using Carlson Software – Learn Carlson Productivity Tips, Drawing

Management and Grading

In the final session of That CAD Girl's 2022 Virtual Workshop series, Travis demonstrated advanced CAD project management workflows using tables, custom fields and sheet sets. The session also covered Civil 3D conversions, LIDAR data handling, grading, watershed analysis and integration with HEC-RAS for hydrology modeling.

Key Topics:

- Automating project data with tables, custom fields and Sheet Set Manager
- Civil 3D file conversion and XREF management
- LIDAR data processing and surface creation
- Watershed analysis and drainage modeling
- HEC-RAS integration for hydraulic design
- Grading and pad design enhancements

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This session was presented by Travis Maxwell on 12/13/2022.

2022 Virtual Workshops Session 6-4: Live Design: New Techniques for Better Project

Design with Carlson Civil

A Virtual Workshop Using Carlson Software – Learn GIS-Supported Site Selection and Subdivision Layout

This virtual workshop session features civil engineer Bill Dennis demonstrating a streamlined field-to-office GIS and CAD workflow using Carlson Software. The presentation covers integrating GPS data, GIS mapping and CAD design to improve efficiency in large-scale land development projects.

Key Topics:

- Field-to-office GIS and CAD integration
- GPS-based conceptual design workflows
- Carlson Software tools for civil engineering
- Data export/import between CAD, GIS and mobile devices
- Real-world project demonstration

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This session was presented by Bill Dennis of Civil Design Team LLC of Greer on 12/13/2022.

2022 Virtual Workshops Session 6-3: Fire Flow Analysis Case Study

A Virtual Workshop Using Carlson Software – Learn Water Network Fire-Flow and Pressure Modeling

This Carlson Software virtual workshop session, led by Travis Maxwell, demonstrates how to model waterline extensions and perform fire flow and hydrostatic pressure analysis using Carlson's Pressure Pipe Network tools. The presentation covers setup, data input, hydraulic grade line calculations and integration with EPA Net for validation.

Key Topics:

- Pressure Pipe Network setup and configuration
- Fire flow and hydrostatic pressure testing
- Hydraulic grade line (HGL) and PSI-to-head conversions
- Integration with EPA Net for model verification
- Managing pipe crossings, profiles and demand nodes

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This session was presented by Travis Maxwell on 12/13/2022.

2022 Virtual Workshops Session 6-2: Pervious Paver Parking Lot Design

A Virtual Workshop Using Carlson Software – Learn Stormwater Retrofit and Permeable-Paver Storage Case Study

This virtual workshop showcased a real-world case study on designing a permeable paver stormwater system using Carlson HydroNet. Engineers from Finch & Associates demonstrated how to model complex drainage networks, link watershed areas and simulate stormwater detention using Carlson’s 2022–2023 hydrology tools.

Key Topics:

- Permeable paver stormwater design
- Carlson HydroNet modeling and routing
- Stormwater detention and drainage analysis
- Project case study: Veterinary hospital expansion in Knigh tdale, NC

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This session was presented by Finch & Associates from Raleigh, NC on 12/13/2022.

2022 Virtual Workshops Session 6-1: Wet Pond Design for Multi-Family Development

A Virtual Workshop Using Carlson Software – Learn Stormwater Modeling and Detention Pond Case Study

This virtual workshop demonstrates advanced stormwater design techniques using Carlson Software's HydroNet Explorer. Presenter Travis Maxwell guides attendees through converting Civil 3D files, creating surfaces from Google Earth data and designing detention and wet ponds within Carlson's hydrology tools.

Key Topics:

- Carlson Hydrology and HydroNet Explorer workflows
- Stormwater detention and wet pond design
- Civil 3D data conversion and surface modeling
- Curve number and time of concentration calculations
- Integration with Google Earth and LiDAR data

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This session was presented by Travis Maxwell on 12/13/2022.

2022 Virtual Workshops Session 5-3: Civil Design in Carlson Software

A Virtual Workshop Using Carlson Software – Design Sanitary and Storm Drainage Networks

This recorded session from the 2022 Virtual Workshops features Carlson Software's Mark Long demonstrating step-by-step civil design workflows in Carlson Civil and Hydrology. The class covers sanitary-sewer and storm-drain network setup, surface merging, pipe-network editing and profile design techniques used in real-world subdivision projects.

Key Topics:

- Creating and merging surface models (existing, finished-grade, merged)
- Designing sanitary-sewer networks and setting pipe parameters
- Storm-drain design with hydrology and hydraulic calculations
- Using Carlson's Spreadsheet Sewer Editor and profile-view editing
- Managing automation, slopes, inverts and crossings
- Workflow philosophy and training plans for future instructional videos

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This session was presented by Mark Long on 12/07/2022.

2022 Virtual Workshops Session 5-2: Civil Design in Carlson Software

A Virtual Workshop Using Carlson Software – Improve RoadNet Grading and Intersections

This Carlson Software virtual workshop provides an in-depth demonstration of RoadNet for roadway and subdivision design, including surface modeling, template management, intersections and grading workflows. The session covers practical techniques for widening roads, handling intersections, creating cul-de-sacs and balancing earthwork using Carlson Civil tools.

Key Topics:

- RoadNet setup and file structure
- Template Point Center Line and Template Series usage
- Intersection grading and profile adjustments
- Super elevation and cul-de-sac design
- Earthwork balancing and volume calculations
- Profile and cross-section generation

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This session was presented by Mark Long on 12/07/2022.

2022 Virtual Workshops Session 5-1: Civil Design in Carlson Software

A Virtual Workshop Using Carlson Software – Design Subdivisions with LotNet and RoadNet

This session from the 2022 Virtual Workshops features Mark Long of Carlson Software demonstrating advanced CAD workflows using Carlson's LotNet and RoadNet tools. The training covers efficient subdivision layout, automated lot labeling, setbacks and roadway design for civil engineering and hydrology applications.

Key Topics:

- Carlson LotNet setup and automation for subdivision design
- RoadNet configuration, templates and grading workflows
- Surface modeling and triangulation (TIN) creation and validation
- Hydrology preparation and ground-cover planning
- Troubleshooting performance and CAD layer management

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This session was presented by Mark Long on 12/07/2022.