ADOPTION ACCELERATORS FOR CIVIL ENGINEERING

Last Update: November 2020
**Accelerators** help you unlock the potential of Autodesk® technology.

- **Outcomes**: Measurable goals your business wants to achieve
- **Capabilities**: Your technology, workflow, data, and organizational abilities
- **Accelerators**: Easy-to-access services built on Autodesk best-practices

Unlock Outcomes

Improve Key Capabilities
Outcomes

What business goals are you looking to achieve?
What capabilities can we help you develop?

Example capabilities that reduce errors & rework

- Model Authoring
- Project Insights
- Cost Management
- Model Co-Authoring
- Design Review
Easy-to-access coaching sessions from Autodesk

**Introduction to**
Get familiar with the latest technologies & features

**Examples**
- Introduction to: BIM 360 Design
- Introduction to: Dynamo for linear structures
- Introduction to: InfraWorks for road and highway design

**How to**
Learn key workflows that solve specific challenges

**Examples**
- How to: Set up Revit for AEC Projects
- How to: Create a map book in Civil 3D
- How to: Connect ArcGIS data to InfraWorks and Civil 3D
How do Adoption Accelerators work?

1. **Discovery Session (30-60 minutes)**
   Meet with your CSM and a subject matter expert to contextualize the content for your team.

2. **Coaching Session (60-120 minutes)**
   Sessions are led by an Autodesk expert, introducing users to new technology or demonstrating workflows with Q&A.

3. **Materials & Feedback (10 minutes)**
   We’ll provide the session recording and presentation materials, and participants are encouraged to provide feedback on the Accelerator through a survey.
Adoption Accelerators

Introduction to

- IT Readiness for BIM 360
- Forge (General)
- BIM 360 Design
- BIM 360 Docs (Infrastructure)
- BIM 360 Design Collaboration
- InfraWorks (General)
- InfraWorks for road and highway design
- InfraWorks for site, landscape, environmental design
- InfraWorks for structure, bridge, and tunnel design
- InfraWorks for conceptual design and visualization
- InfraWorks for site planning and logistics
- Global Work Sharing with Plant 3D
- Generative Design in Fusion
- Civil 3D Subassembly Composer
- Data extraction with Dynamo for Civil 3D
- Dynamo for linear structures
- Computational Fluid Dynamics (CFD)
- Parameters in Revit
- Navisworks (Infrastructure)
- 3ds Max (Infrastructure)
- Conceptual design with FormIt Pro
Adoption Accelerators

How to

- Start and administer a project in BIM 360 Design
- Set up a Civil 3D project in BIM 360 Design
- Set up a project in BIM 360 Docs
- Create issues & manage documents in BIM 360 Docs
- Communicate changes in BIM 360 Docs
- Review designs in BIM 360 Docs (Infrastructure)
- Coordinate and resolve clashes in BIM 360
- Set up Model Coordination in BIM 360
- Optimize BIM data for visualization
- Set up Civil 3D for AEC projects
- Plan productions in Civil 3D
- Create a map book in Civil 3D
- Optimize large data sets in Civil 3D
- Connect ArcGIS data to InfraWorks and Civil 3D
- Use Civil 3D data references in BIM 360 Design
- Share data between Civil 3D, Revit and InfraWorks
- Work with point cloud data in Civil 3D and InfraWorks
- Set up Revit for AEC projects
- Automate Revit design workflows with Dynamo
- Manage Revit Families
- Detect and resolve clashes in Revit
- Review models and identify coordination issues with Navisworks
- Start and administer a project in Plant 3D
- Build a digital product catalog in Forge
- Manage data with Forge
- View Digital Twins with Augmented Reality
- Get people moving with confidence (COVID-19)
Ready to Accelerate Adoption?

1. If your company has an Enterprise plan with Autodesk, you can schedule Accelerators with your Autodesk Customer Success Manager (CSM).

2. If you are unsure of how to contact your Customer Success Manager, submit a request and we will connect you.

3. Find Accelerators for more industries and learn more about Autodesk Customer Success.
ACCELERATOR DETAILS
# How to: Set up a project in BIM 360 Docs

Learn how the BIM 360® Docs ecosystem works, how to set up a project folder structure with permissions, and how to upload record documents.

## Topics
- BIM 360 Docs modules
  - Document Management
  - Desktop Connector
  - Project Home
  - Insight
- Creating a project
- Project settings
- Folder structure
  - Plans vs. project files
- Folder permissions
- Plans upload

## Who it’s for
- VDC Manager
- Project Engineer
- Field Engineer
- Project Manager
- Project Controls

## Capabilities
- Coordination
- Quality Management
- Cost Management
- Design Collaboration
- Commissioning
- Document Management

## Prerequisites
- Enterprise Success Program
- Attendees should have basic knowledge of BIM 360 Docs
Learn how to use BIM 360® Docs to log issues on site, approve and send documents, and use record documents in the field.

**Topics**
- Mark-ups
  - Permissions
  - Creation and visibility
  - Reviewing mark-ups
- Issues
  - Permissions
  - Creating an issue
- Reviews
  - Creating an approval workflow
  - Submitting documents for review
  - Monitoring reviews
  - Reviewing and approving documents
- Transmittals
  - When and how to use transmittals
  - Creating a transmittal
  - Accessing documents on mobile devices

**Who it’s for**
- VDC Managers
- Project Engineers & Field Engineers
- Project Managers
- Project Controls
- Architects

**Prerequisites**
- Enterprise Success Program
- Attendees should have basic knowledge of BIM 360 Docs

**Capabilities**
- Design Collaboration
- Document Management
How to: Communicate changes in BIM 360 Docs

Learn how to organize, update, and compare project documents and resolve issues in BIM 360® Docs.

**Topics**
- Sets
  - How to categorize file sets
  - The sets module
  - Creating new sets
- Versioning and comparing
  - Creating a new version of a document
  - Comparing documents
  - Versioning of model files
- Markups
  - How to use markups and hyperlinks together
  - Using attachments to markups
- Reports

**Who it’s for**
- VDC Manager
- Project Engineer
- Field Engineer
- Project Manager
- Project Controls

**Prerequisites**
- Enterprise Success Program
- Attendees should have basic knowledge of BIM 360 Docs

**Capabilities**
- Document Management
- Design Collaboration
Introduction to: Forge (General)

Get familiar with functionalities of Autodesk Forge™, what tools are required to use it, and how to set up a team for application development.

**Topics**
- Understanding APIs
- Forge Overview
  - Common applications of Forge
  - The Forge business architecture
  - Adding Forge to an EBA
- Building online workflows and experiences around your design data
- Practical Forge use cases
- Setting up a team
- Where to get development and support resources
- Functionalities of each component of Forge

**Who it’s for**
- Project Managers
- BIM Managers
- BIM Leads
- Project Engineers

**Prerequisites**
- Enterprise Success Program
- Attendees have access to Forge

**Capabilities**
- Cloud-based Process Automation
- Data Enrichment, Management and Delivery
# How to: Review models and identify coordination issues with Navisworks

Learn how to create and navigate a federated model, control visibility, create viewpoints, create mark-ups, and run clash detection between trades using Navisworks®.

## Topics
- Why you should use Navisworks for federated models
- Types of Navisworks files
- Appending models in Navisworks
- Creating a federated model demo video
- Navigating a model
- Controlling visibility
  - Toolset options
  - Sectioning plane and box
- Managing toolset options for viewpoints and mark-ups
- Running clash detective between trades

## Who it’s for
- BIM Manager
- VDC Manager
- BIM Manager
- IT Manager
- Design Technologist

## Prerequisites
- Enterprise Success Program
- Basic knowledge on any BIM authoring tool such as Revit® is recommended

## Capabilities
- Coordination
- Design Coordination and Review
Introduction to: Conceptual design with FormIt Pro

Get familiar with conceptual design using generative design, BIM workflows, simulation, and visualization in FormIt®.

Topics

- Understanding the state of the industry
  - Conceptual design in architecture
  - Interoperability with BIM processes
- Working smarter with BIM-based conceptual design
- Creating design concepts with intuitive tools
- Analyzing designs early in the process
- Sketching on tablets and mobile devices
  - Transitioning between tablet and desktop applications
- Integrating FormIt with Dynamo Studio
  - Advanced geometry for generative design
- Connecting FormIt and Revit Modeling
  - Introduction to modelling
  - Advanced modelling
  - Sketching and manipulation
  - Advanced geometry
- Visualizing models
- Simulating and visualizing water tightness
- Performing insight integration for energy analyses

Who it’s for

- Design Principals
- Architects
- Designers
- Computational Designers

Prerequisites

- Enterprise Success Program
- Basic knowledge on any BIM authoring tool such as Revit® is recommended

Capabilities

- Conceptual Design
How to: Connect ArcGIS data to InfraWorks and Civil 3D

Learn how to connect and store GIS data using BIM methodologies and Autodesk Connector.

### Topics
- Adopting the concept of “data at the center” to drive better project workflows
- Bringing GIS for capital portfolios together with BIM for capital projects
- Integrating geography as a common language for collaboration
- Understanding the requirements for bidirectional BIM/GIS integration
- Autodesk’s partnership with ESRI

### GIS data formats
- Shapefiles
- Geodatabases

### Autodesk Connector for ArcGIS
- Accessing ArcGIS organizational portals and ArcGIS online directly from InfraWorks
- Connecting layers from ArcGIS to InfraWorks and Civil 3D
- Analyze data to add location insights to infrastructure sites and their surroundings

### Who it’s for
- GIS Engineer
- Civil Engineer
- Project Manager
- Civil Technician

### Prerequisites
- Enterprise Success Program
- Attendees should have a basic knowledge of GIS data exchange principles

### Capabilities
- Existing Conditions Modeling
- Data Enrichment, Management and Delivery
How to: Optimize BIM data for visualization

Learn how to make data visualization easier by analyzing the contents of your scene and applying different optimization methods.

**Topics**
- Understanding the need for optimization
  - Overview
  - Hardware constraints
  - VR
  - Rendering
- Analyzing the contents of your scene files
  - CAD to 3ds Max® workflow
  - Revit import
  - Large objects & groups
- Optimization approaches
  - Automatic optimization tools
  - Replacing objects
  - Asset libraries
  - Optimization results
- Material workflow
  - Improving visual fidelity
  - Lights
  - Export from 3ds Max

**Who it’s for**
- BIM Manager
- Visualization Specialist
- Architectural Designer
- Lighting Designer

**Prerequisites**
- Enterprise Success Program
- Attendees have a basic understanding of Revit® and 3ds Max

**Capabilities**
- Visualization
- Design Authoring
- Design Detailing
- Visualizations & Animations
- Rendering
Introduction to: BIM 360 Design

Get familiar with BIM 360® Design features and workflows including account and project administration, Revit® cloud worksharing, document management, and design collaboration.

**Topics**
- The BIM 360 Platform
- Introduction to BIM 360 Design
  - Desktop Connector
  - Security
  - Autodesk Health Dashboard
- Revit Cloud Worksharing
  - Syncing and initiation
  - Managing cloud models
  - Publishing
- Account and Project Administration
- Document Management
  - Plans and project files
  - Document sets
  - Folders and organization
- Design Collaboration
  - Publishing, sharing, and consuming
- BIM 360 Design accelerators

**Who it’s for**
- Architects
- Engineers
- Administrators
- Project Managers
- Job Captains
- BIM Managers

**Capabilities**
- Document Management
- Model Co-authoring
- Design Coordination and Review

**Prerequisites**
- Enterprise Success Program
- Attendees have access to BIM 360 Design
Learn how to administer the BIM 360® account site and start a BIM 360 Design project.

**Topics**
- BIM 360 roles
- Autodesk account roles and entitlements
- Account admin tasks
  - Adding to the account member directory
  - Importing members by spreadsheet
  - Editing account members
  - Account IDs
- Project set-up
  - Adding admins and members
  - Creating folders
  - Folder structure
  - Creating folders with Desktop Connector
- Administration best practices
- Managing teams
  - Adding members to teams and folders
  - Folder permission levels
  - Setting the Revit® release version

**Who it’s for**
- Administrators
- Project Managers
- Job Captains
- BIM Managers

**Prerequisites**
- Enterprise Success Program
- Attendees should have basic knowledge of BIM 360 Design

**Capabilities**
- Model Co-authoring
- IT Infrastructure Readiness
Get familiar with InfraWorks® features and workflows including Model Builder, cloud collaboration, conceptual design and visualization.

**Topics**
- Getting started with InfraWorks
- Building with Model Builder
- Collaborating with models in the cloud
- InfraWorks for conceptual design and visualization
- InfraWorks for:
  - Roads and highways
  - Bridges, tunnels, and structures
  - Site, landscaping, and environmental design

**Who it’s for**
- VDC Managers
- Designers
- Urban and Master Planners
- Architects
- GIS Analysts
- Civil Engineers

**Prerequisites**
- Enterprise Success Program
- Attendees should have basic knowledge of InfraWorks

**Capabilities**
- Concept Design
- Existing Conditions Modeling
- Civil Structure Model Authoring
Introduction to: InfraWorks for road and highway design

Get familiar with InfraWorks® features and workflows for designing roads and highways.

**Topics**
- Deploying component roads
- Adding details such as intersections
- Analyzing designs to ensure they are safe and cost-effective
- Model housekeeping
- Importing data from civil design applications
- The roadway design toolset
  - Planning roads, component roads, and design roads
- Detailed alignment and profile geometry
  - Road conversion
  - Adding a component road
  - Editing horizontal road geometry
- Conceptual design
- Design visualization, validation, and communication
- Preparing data for editing in InfraWorks

**Who it’s for**
- VDC Managers
- Designers
- Urban and Master Planners
- Architects
- GIS Analysts
- Civil Engineers

**Prerequisites**
- Enterprise Success Program
- Attendees should have basic knowledge of InfraWorks

**Capabilities**
- Concept Design
- Road and Highway Model Authoring
Introduction to: InfraWorks for site, landscape, environmental design

Get familiar with InfraWorks® features and workflows for modeling sites and existing conditions.

**Topics**
- Settings required for success
- Building and refining existing conditions
- Sketching and design capabilities
- Adding and using GIS, CAD, C3D, and Revit
- Styling and theming data
- Creating visualizations and flyovers
- Using BIM 360 with InfraWorks

**Who it’s for**
- VDC Managers
- Designers
- Urban and Master Planners
- Architects
- GIS Analysts
- Civil Engineers

**Prerequisites**
- Enterprise Success Program
- Attendees should have basic knowledge of InfraWorks

**Capabilities**
- Concept Design
- Existing Conditions Modeling
- Site Model Authoring
Introduction to: InfraWorks for structure, bridge, and tunnel design

Get familiar with InfraWorks® features and workflows for designing bridges, tunnels and civil structures.

Topics
- Improving your existing workflow
- The civil structure toolset
- Getting familiar with bridges
- Working with bridge components
- Bridge analysis
- Working with tunnel components
- Exchanging data
- Parametric modelling

Who it’s for
- VDC Managers
- Designers
- Urban and Master Planners
- Architects
- GIS Analysts
- Civil Engineers

Capabilities
- Concept Design
- Civil Structure Model Authoring

Prerequisites
- Enterprise Success Program
- Attendees should have basic knowledge of InfraWorks
Learn how to optimize data exchange between Civil 3D®, Revit®, and InfraWorks® to minimize coordination errors.

### Topics
- **Coordinate Systems**
  - Product overviews
  - Coordinate systems overview
  - Applying coordinate systems by product
- **Collaborative with Civil 3D**
  - Collaboration and data exchange
  - InfraWorks and Revit to Civil 3D
  - Preparing Civil 3D drawings for export
- **Collaborate with Revit**
  - Collaboration and data exchange
  - Assign, Acquire, Publish Coordinates to Revit
  - Preparing Revit models for export
- **Collaborate with InfraWorks**
  - Collaboration and data exchange
  - Revit, FBX, IFC & Civil 3D to InfraWorks
  - Preparing InfraWorks models for export

### Who it’s for
- BIM Managers/Coordinators
- Project Managers
- End Users

### Capabilities
- Data Enrichment
- Management and Delivery

### Prerequisites
- Enterprise Success Program
- Basic knowledge on InfraWorks, Civil 3D and Revit is recommended
# How to: Optimize large data sets in Civil 3D

Learn the best ways to work with Civil 3D® objects, use data shortcuts, and prevent performance issues with the style reference manager.

## Topics
- System requirements
- Optimizing your workspace settings
- Care and feeding of .dwg files
- Planning for Civil 3D success
  - Civil 3D data shortcuts
  - Comparing DREFs to XREFs
  - Surface modeling tips
  - Corridor modeling tips
  - Improving Civil 3D performance

## Who it’s for
- Superintendents
- Project Engineers
- Field Engineers
- Project Managers

## Capabilities
- Road and Highway Model Authoring
- Rail Track Model Authoring

## Prerequisites
- Enterprise Success Program
- Basic knowledge on Civil 3D is recommended
**Introduction to: Global work sharing with Plant 3D**

Get familiar with the collaboration features of AutoCAD® Plant 3D and workflows for projects teams in distributed locations.

### Topics
- Why Collaboration for AutoCAD Plant 3D
- How Collaboration for AutoCAD Plant 3D works
- BIM 360 Docs and the Collaboration Cache
- Sharing a Plant 3D Project
- Project file & folder actions
- Creating a P&ID and 3D Model
- Editing a Project Drawing
- Creating an Isometric Drawing
- Removing a Project Drawing
- Editing a Piping Spec
- Managing Projects on BIM 360® Docs
  - Environment Configuration
  - Versions and Platforms
  - Creating a BIM 360 Project and Inviting Users
  - Service Activation
  - Adding Folder Access Permissions
  - Project Recycle Bin vs BIM 360 Deleted Files
- User Access Issues Checklist
- Administration workflows for Plant 3D Collaboration projects

### Who it’s for
- Drawing/Design
- Office Manager
- CAD Administrator
- Project Manager
- Plant 3D Users
- Piping/Plant Designers

### Prerequisites
- Enterprise Success Program
- An understanding of the administration of plant design in Autodesk Plant 3D

### Capabilities
- Model Co-authoring
# How to: Work with point cloud data in Civil 3D and InfraWorks

Learn how to extract and manage meaningful objects from point cloud data sources to capture existing conditions for infrastructure projects.

## Topics
- Using point clouds in Civil 3D® and InfraWorks®
  - How point cloud data originates
  - The importance of point cloud specifications
  - Size management
  - Creating accurate topography
  - Extracting linear and vertical geometry
- Using Recap and Recap Photo
  - Importing, indexing, and registration
  - Creating and exporting regions
- How to extract and create 3D models from point clouds
- How to build accurate surface topography from point clouds

## Who it’s for
- Superintendents
- Project Engineers
- Field Engineers
- Project Managers

## Prerequisites
- Enterprise Success Program
- Basic knowledge of Infraworks and Civil 3D is recommended

## Capabilities
- Existing Conditions Modeling
- Reality Capture
Introduction to: Generative Design in Fusion

Get familiar with generative design for weight reduction and component consolidation in Fusion 360®.

**Topics**
- Manufacturability
- Light-weighting
- Preserve regions
- Obstacle regions
- Loads
- Materials
- Constraints
- Manufacturing methods
- Design exploration

**Who it’s for**
- Project Managers
- Designers
- Tool Makers
- Engineers

**Prerequisites**
- Enterprise Success Program
- Attendees have a general knowledge of design tools

**Capabilities**
- Product Generative Design
Learn how to build a proof-of-concept web application for publishing CAD models to a digital product catalog with Autodesk® Forge® & Fusion 360®.

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<th>Topics</th>
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<td>▪ Fusion 360® &amp; Forge Platforms</td>
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<td>▪ Product Marketing</td>
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<td>▪ Enterprise Success Program</td>
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<td>▪ Attendees have a basic understanding of document management in Fusion Team</td>
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Introduction to: InfraWorks for conceptual design and visualization

Get familiar with Autodesk® InfraWorks® workflows for developing design alternatives and predicting performance in the built environment.

**Topics**

- The rapid and conceptual design workflow
- Model housekeeping
  - Road design standards and units
  - Model regeneration
  - GIS data
- Gathering project data
  - Building your existing model
  - Model Builder
- Design and analyze functionality
  - Adding features
  - Aggregation
  - Animated 3D objects
- Collaborating with InfraWorks
- Setting up an InfraWorks model on BIM 360
- Design visualization
  - Terrain view setting
  - Atmospheric effects
  - Presentation tools
- Re-use
  - Data exchange
  - Design visualization

**Who it’s for**

- VDC Managers
- Designers
- Urban and Master Planners
- Architects
- GIS Analysts
- Civil Engineers

**Prerequisites**

- Enterprise Success Program
- Attendees should have basic knowledge of InfraWorks

**Capabilities**

- Visualizations & Animations
- Concept Design
How to: View Digital Twins with Augmented Reality

Learn how to connect CAD data streams to rich AR/VR environments using Autodesk® Forge®.

**Topics**

- Achieving digital transformation with Forge platform
- Preparing CAD models for AR/VR workflows
  - The AR/VR toolkit
  - The administration console
  - The translation pipeline
  - gITF output
- Authoring AR/VR instructions
- Solution architecture

**Who it’s for**

- IT Managers
- Manufacturing Engineers
- Field Engineers
- Service Technicians

**Prerequisites**

- Enterprise Success Program
- Attendees should have basic knowledge of the Forge platform and AR/VR technologies

**Capabilities**

- AR / VR / Immersive Design
Learn how to set up model coordination, perform clash detection, and resolve coordination issues in Autodesk® BIM 360®.

**Topics**
- Setting up coordination spaces
  - Creating coordination spaces
  - Overview of coordination spaces
- Assigning permissions
- Managing models
- Working with Revit, AutoCAD, and IFC files
- Creating saved views

**Who it’s for**
- VDC Managers
- VDC Engineers
- Architects
- MEP Engineers

**Capabilities**
- Coordination
- Construction Administration
- Design Coordination and Review

**Prerequisites**
- Enterprise Success Program
- Attendees understand how the Plans Folder works within Document Management
- BIM 360 Tenant enabled
Introduction to: Civil 3D Subassembly Composer

Get familiar with Autodesk® Civil 3D® workflows for managing complex corridor geometry with Sub-Assembly Composer (SAC).

Topics
- Why sub-assembly composer?
- Overview of the SAC Interface
- Developing a custom sub-assembly
- Composing simple sub-assemblies
- Importing and modelling corridors using a custom sub-assembly in Civil 3D
- SAC Tips & Tricks

Who it’s for
- Civil Designer
- Civil Engineer
- Civil Technician
- Civil Drafter

Capabilities
- Road and Highway Model Authoring
- Rail Track Model Authoring

Prerequisites
- Enterprise Success Program
- A detailed understanding of Corridor Design within Civil 3D, including:
  - How Subassemblies and Assemblies are combined
  - How Assemblies are used within corridor modeling
  - How Targeting is used during the Corridor generation process
- Civil 3D 2013 or later installed
- Civil 3D Subassembly Composer installed
Learn about project structures, the Civil 3D object catalog, data management best practices, and the importance of purpose-driven drawing templates in Autodesk® Civil 3D®.

**Topics**

- Setting up for data management
  - Data management overview
  - XREFs in Civil 3D
  - DREFs (data shortcuts)
  - Data management applications
  - Civil 3D and BIM 360®
- Standardized templates, styles, and catalogs
  - Why Civil 3D needs templates
  - Why Civil 3D projects use more than one template
  - Display and label styles for intent and purpose
  - Sharing styles across drawings
  - Special templates for plans production
  - How to use reference templates
  - Accommodating BIM mandates
- Sharing Civil 3D object catalogs
  - Why Civil 3D needs object catalogs
  - Overview of tool palettes
  - Pipe network catalogs
  - Corridor modelling and subassemblies catalogs
  - Review of the Design Center function and tools

**Who it’s for**

- BIM Managers
- Civil Engineers

**Prerequisites**

- Enterprise Success Program
- Attendees have completed “How To: Optimize large data sets in Civil 3D”

**Capabilities**

- Road and Highway Model Authoring
- Data Enrichment, Management and Delivery
- Rail Track Model Authoring
Introduction to: Dynamo for linear structures

Learn how to use Dynamo to access Autodesk® AutoCAD® and Civil 3D® data, build your own graph, and automate repetitive tasks.

**Topics**
- Computational BIM overview
- Dynamo for Civil 3D
  - AutoCAD nodes
  - The Civil 3D node hierarchy
- Examples
  - From linear to cartesian system
  - Discrete element placement
  - Transformation
  - Adding attributes
  - Geometry creation

**Who it’s for**
- BIM Managers
- Civil Engineers

**Prerequisites**
- Enterprise Success Program
- Attendees should have a basic understanding of Civil 3D & Dynamo

**Capabilities**
- Computational Design
Learn how to review models, resolve clashes, and address problems before they reach the construction site with BIM 360®.

**Topics**
- Aggregating models
- Creating model views
- Navigating models
- Viewing clashes
- Creating issues from clashes
- Distributing issue reports
- Model updates

**Who it’s for**
- VDC Managers
- VDC Engineers
- Architects
- MEP Engineers

**Capabilities**
- Coordination
- Design Coordination and Review

**Prerequisites**
- Enterprise Success Program
- Attendees understand how to enable Model Coordination
- Attendees have BIM 360 Tenant enabled
How to: Automate Revit design workflows with Dynamo

Learn how to how to identify relevant Revit® tasks for Autodesk® Dynamo®, build a graph, organize and document graphs, and automate repetitive structural tasks.

Topics
- Understanding the BIM workflow
- Visual programming and textual code
- Managing Revit parameters
- Creating Revit elements
- Connecting Revit with Excel
- Lists and lacing
- Code block syntax
- Overview of Dynamo versions and Dynamo Player

Who it’s for
- BIM Managers
- Advanced Revit Users

Capabilities
- Process Automation
- Computational Design

Prerequisites
- Enterprise Success Program
- Attendees should have advanced knowledge of Revit
Learn how to set up Autodesk® Forge™ and develop applications using the authentication, data management, and BIM 360® APIs.

**Topics**
- Setting up Forge
  - Your Autodesk ID and Forge account
  - Forge apps
  - Securing Forge apps
  - Tracking usage
- The authentication API
  - Using OAuth2
  - Overview of OAuth
  - Client IDs and secrets
  - Types of authentication
  - Access tokens
  - Authentication scopes
- The data management API
  - Transferring data between Autodesk and storage
  - Uploading objects
  - Uploading files
- The BIM 360 API
  - Adding custom integration
  - BIM 360 Issues Editor
  - Supported operations

**Who it’s for**
- Web Developers
- Desktop Programmers
- Project Managers
- BIM Specialists
- BIM Managers

**Prerequisites**
- Enterprise Success Program
- Attendees should have a basic understanding of Forge

**Capabilities**
- Cloud-based Process Automation
Introduction to: Computational Fluid Dynamics (CFD)

Get familiar with Autodesk® CFD workflows to predict product performance, optimize designs, and validate product behavior before manufacturing.

**Topics**
- Overview of workflows and CFD set-up
  - Geometry
  - Materials
  - Boundary Conditions
  - Meshing
  - Solve
- Results interpretation for CFD studies and decision making
- Understanding CAD to CFD interoperability
- Applying relevant changes to optimize a model for Simulation

**Who it’s for**
- Project Managers
- CAD Managers
- Architects/Engineers

**Prerequisites**
- Enterprise Success Program

**Capabilities**
- Simulation
- CFD Analysis
Learn about project templates, coordinate systems, model strategy, model maintenance, working with links, and performance best practices in Autodesk® Revit®.

**Topics**

- Before starting a project
  - Project Templates
  - View Templates
  - Transfer Project Standards
  - System Family files library
- Coordinate Systems
- Model Strategy
  - Model size - Split Model
  - Concept of Model file / Layout file
  - Worksharing and Worksets
- Model Maintenance
  - Audit / Purge / Compact
  - Warnings
  - Review using Schedules
- Working with Links
  - About linking *.rvt
  - Levels and grids. Copy/Monitor
  - About linking *.ifc
  - About linking *.dwg
- Performance Best Practices
  - Revit Updates
  - Revit Links
  - Model Groups
  - Rooms & Spaces
  - Views
- Automation with Dynamo
  - Excel data transfer
  - Family Management: Bulk load from folder
  - Export warnings and impacted element's ID to Excel

**Who it’s for**

- BIM Manager
- Revit Users
- Project Manager

**Prerequisites**

- Enterprise Success Program
- Attendees should have a basic understanding of Revit

**Capabilities**

- Model Authoring
- Civil Structure Model Authoring
- Design Detailing
- Design Authoring
Learn how to use established Civil 3D® workflows to collaborate on Civil 3D data shortcut projects including design files, data shortcuts, and external references in BIM 360®.

**Topics**
- Collaboration for Civil 3D
- What’s required
- Working with Projects in BIM 360
- Document Locking in Civil 3D
- Project Management
  - Entity vs. Object Management
  - Data Management
  - Drawing & Object Relationships
  - Project Collaboration
- Referencing Data
  - Data Shortcuts 101
  - High Level Workflow
  - Setting Up your Project
  - Using data references
  - Migrating existing projects
- Best Practices
  - Desktop Connector
  - BIM 360
  - Civil 3D
  - Data Management

**Who it’s for**
- Superintendents
- Project Engineers & Field Engineers
- Project Managers
- BIM Managers
- Civil Engineers
- Civil Designers

**Prerequisites**
- Enterprise Success Program
- Attendees should have:
  - A basic level of how to build a corridor model using Civil 3D
  - Attended Introduction to BIM 360 Design for Civil 3D

**Capabilities**
- Model Co-authoring
Learn best-practices for setting up Civil 3D® projects in BIM 360® Design, including roles and responsibilities and how to migrate existing projects to the cloud.

**Topics**
- End-User Requirements
- Role of Account Administrator
- Creating a project as Account Admin
- Role of Project Administrator
- Adding users to the project
- Adding folders and permissions
- Migrating existing Civil 3D projects to the cloud
  - “Packing” for the move to BIM 360
  - Desktop Connector Overview
- Moving the Project Directory
- Migrating existing project folders
- Desktop Connector Syncing
  - Connecting to a project as an Invited User
  - Opening files from the Hub
  - Locking, Versioning, and Syncing
  - Opening Civil 3D files from BIM 360
  - Data shortcuts in the cloud

**Who it’s for**
- Superintendents
- Project Engineers
- Field Engineers
- Project Managers

**Prerequisites**
- Enterprise Success Program
- Attendees should have a basic understanding of Civil 3D

**Capabilities**
- Model Co-authoring
How to: Plan productions in Civil 3D

Learn how to produce 2D plan-profiles to supplement 3D models in Civil 3D®.

**Topics**
- Styles
  - Civil 3D object styles
  - Corridor styles
  - Label and table styles
  - Band styles
- Templates
  - View scale
  - Title bloc
- 2D Plan deliveries
  - Plan and profile view
  - Cross section view
  - Tips and tricks

**Who it’s for**
- Civil Engineers
- BIM Managers

**Capabilities**
- Digital Drafting
- Road and Highway Model Authoring
- Rail Track Model Authoring

**Prerequisites**
- Enterprise Success Program
- User should know have a basic knowledge in infrastructure design
**Introduction to: Parameters in Revit**

Get familiar with using project, family, shared, and global parameters to define and modify elements and communicate model information in Revit®.

### Topics
- Overview of Revit parameters
- Selecting which parameter to use
- Types of parameters
  - Shared parameters
  - Project parameters
  - Global parameters
  - Family parameters
  - The Dynamo managing parameter
- Managing parameters
- Best practices

### Who it’s for
- Building Engineers
- MEP Engineers
- Structural Engineers
- BIM Managers
- BIM Designers

### Prerequisites
- Enterprise Success Program
- Attendees should have a basic understanding of AEC design and Revit

### Capabilities
- Model Authoring
- Civil Structure Model Authoring
- Design Detailing
- Design Authoring
Learn how to create Revit® families, use advanced loading techniques, and work with families within a project.

**Topics**
- Overview of Revit families
- Revit elements
- Kinds of families
  - System families
  - Loadable families
  - In-place families
- Host-based and standalone families
- Cuttable and non-cuttable families
- Working with solids and voids
- Creating Revit Families
- Family parameters
- Reference planes
- Reference lines
- Advanced loadable Revit family techniques
  - Nesting families
  - Work plane-based families
  - Vertical families
  - Room-aware families
- Revit family and project interaction
  - Replacing a family
  - Loaded families
  - Type catalogs
  - Upgrade families
  - Automation with Dynamo

**Who it’s for**
- Building Engineers
- MEP Engineers
- Structural Engineers
- BIM Managers
- BIM Designers

**Prerequisites**
- Enterprise Success Program
- Attendees should have basic knowledge in Revit

**Capabilities**
- Model Authoring
- Civil Structure Model Authoring
- Design Authoring
- Design Detailing
How to: Create a map book in Civil 3D

Learn how to quickly plot, print, and publish the entire project site into multiple sheets as tiles.

Topics
- Map book overview
- Why map books are needed
- Where the map book tool can be used
- Setting up a map book
- Creating a map book
- Publishing a map book

Who it’s for
- BIM Manager
- BIM Coordinator
- Project Manager

Prerequisites
- Enterprise Success Program
- Attendees should have a basic understanding of AutoCAD®, Map 3D, and Civil 3D®

Capabilities
- Data Enrichment, Management and Delivery
- Existing Conditions Modeling
Learn how to review models, mark-up, create issues, and compare versions on infrastructure projects with BIM 360® Document Management.

**Topics**

- Model Reviews
  - Storage in Document Management
  - 3D & properties
  - Structured Review Workflows within BIM 360
- Mark-ups and Issues
  - Mark-up Permissions
  - Creation and visibility
  - Reviewing mark-ups
  - Issue overview
  - Issue permissions
  - Issue configurations
  - Creating an issue
  - Visual clash detection
  - Measuring validation
  - Mobile application
  - Compare versions

**Who it’s for**

- Project Leads
- Project Managers
- Project Engineers

**Capabilities**

- Design Coordination and Review

**Prerequisites**

- Enterprise Success Program
- Attendees should have a working knowledge of Navisworks
Learn best-practices for starting new projects with AutoCAD® Plant 3D including planning, training and administration.

**Topics**
- Executive Summary / Project Kick-off Timeline Example
- Planning, support and setup checklist
- Network infrastructure for Plant 3D projects
- Project team collaboration using the cloud

**Who it’s for**
- Project Managers
- CAD Admins
- Pipe Design Leads

**Capabilities**
- Model Authoring

**Prerequisites**
- Enterprise Success Program
- Attendees should have a basic knowledge of process pipe design (previous experience with AutoPLANT, CADWorx, SmartPlant 3D, etc.)
Learn how to enhance design data by importing and exporting to Microsoft Excel from Dynamo and Civil 3D®.

**Topics**
- What Dynamo for Civil 3D is and where to get it
- Overview of Dynamo
- Interrogating your Civil 3D geometry and models from within Dynamo
- Linking Dynamo and Excel
- Enriching your design with elements and information
- Dynamo for data extraction and linking in Civil 3D

**Who it’s for**
- Project Lead Engineers
- Design (CAD) Managers
- Discipline Specialists
- BIM Managers
- Civil Engineers

**Capabilities**
- Data Enrichment
- Management and Delivery

**Prerequisites**
- Enterprise Success Program
- Attendees should have a basic understanding of Civil 3D, Dynamo, and Excel
Learn how to coordinate, review, and present your infrastructure models with Navisworks®.

**Topics**
- Navisworks file types and model aggregation
- Clash detection
- TimeLiner
- Model review
- Walkthroughs

**Who it’s for**
- Project Managers
- Civil Engineers/Designers

**Capabilities**
- Design Coordination and Review
- Visualizations & Animations

**Prerequisites**
- Enterprise Success Program
- Attendees should have a basic understanding of workflows for trades and disciplines coordination and the file types they provide to General Contractors
Learn how to identify and resolve clashes in Revit models using 2D overlays, Navisworks®, BIM 360®, and Dynamo.

**Topics**
- Reviewing clashes using 2D DWG overlay
  - Checking detection in Revit
  - Interference check in Revit
  - Revit warnings on overlapping elements
- Integrating Revit with Navisworks and BIM 360 for clash detection
  - Clash detection features in Navisworks
  - Uploading Revit files to BIM 360 model coordination
- Detecting and resolving clashes with Dynamo
  - Viewing clashes in Revit
  - HTML interference report exported from Revit
  - Parsing and extracting the element IDs
  - Creating a generic model to be placed at clash locations
  - Placing the clash family and filter by levels

**Who it’s for**
- Architects
- Design Engineers

**Capabilities**
- Design Coordination and Review
- Coordination

**Prerequisites**
- Enterprise Success Program
- Attendees should have a working knowledge of Revit
Introduction to: BIM 360 Design Collaboration

Get familiar with the relationship between Document Management and Design Collaboration in BIM 360® Design.

**Topics**
- Benefits Design Collaboration
- Activating Design Collaboration
- Integrating Design Collaboration into a project
- Workflow best-practices
  - Setup
  - Project Administration
  - Data Recovery

**Who it’s for**
- Owners
- VDC Managers
- Architects
- Project Managers
- Engineers
- End Users

**Prerequisites**
- Enterprise Success Program
- Basic knowledge of Design Collaboration, Document Management, Revit Cloud Worksharing

**Capabilities**
- Design Collaboration
- Model Co-authoring
Introduction to: BIM 360 Docs (Infrastructure)

Learn how to set-up and manage team members, folders, and permissions and get familiar with the basic functionality of BIM 360® Docs for infrastructure projects.

**Topics**
- Getting started with BIM 360 Docs
- Folder set-up and permissions
- Project member management
- Mark-ups and issues
- File versioning
- Comparing design documents
- Viewing 2D and 3D models
- OCR tools for plans production
- Mobile devices for commissioning and communication
- Tools for topographic surface exchange between Civil 3D® and Revit®
- Tools for collaboration with InfraWorks®

**Who it’s for**
- MEP Engineer/Designer
- Visualization Specialist
- IT Manager
- Structural Engineer/Designer
- Civil Engineer/Designer
- Bridge Engineer/Designer, Roads & Highways Engineer/Designer
- BIM Manager

**Capabilities**
- Model Co-authoring

**Prerequisites**
- Enterprise Success Program
- Attendees should have a basic understanding of civil engineering design tools
Introduction to: 3ds Max (Infrastructure)

Get familiar with creating animations & realistic renders for infrastructure models in 3ds Max®.

Topics

- Exporting infrastructure models from Civil 3D
- Importing into 3ds Max
- Model optimization
- Creating animations
- Rendering with Arnold

Who it’s for

- Visualization Specialist
- BIM Manager
- Design Engineers
- Visualizers

Prerequisites

- Enterprise Business Agreement (EBA)
- Attendees should have a basic working knowledge of Civil 3D

Capabilities

- Visualizations & Animations
# Introduction to: InfraWorks for site planning and logistics

Get familiar with planning construction sites in a live environment in InfraWorks® using design data, proposals, and traffic simulation.

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**Capabilities**

- Visualization
Learn how to model how people move in closed spaces to assess social distancing and adherence to WHO guidelines.

**Topics**
- Introduction to Mobility Simulation
- Modelling People’s movement in large, enclosed public spaces
- Modelling People’s movement in small, enclosed public spaces
- COVID-19 challenges constraining design
- Mobility simulation’s applications to COVID-19 challenges

**Who it’s for**
- Architectural Designers
- Site/ Resident Engineers
- Land/Site Designers
- Landscape Architects
- Urban Planners
- Municipal/Urban Engineering

**Prerequisites**
- Enterprise Success Program

**Capabilities**
- Simulation
- Mobility Simulation
Introduction to: IT Readiness for BIM 360

Get assistance from Autodesk® experts to review and evaluate your IT infrastructure readiness for Autodesk BIM 360® cloud services.

**Topics**
- Discovery of your current system and network infrastructure
- Identifying offices/sites that will adopt Autodesk cloud services
- A detailed walkthrough of system and network requirements
- Best practices for Autodesk cloud services
- Metrics and data gathering with technical tools

**Who it’s for**
- IT Managers

**Capabilities**
- IT Infrastructure Readiness

**Prerequisites**
- Enterprise Success Program