# Navisworks Clash Detection: *Saving Time and Money by Setting up Clash Templates*

Deepak Maini

National Technical Manager – Named Accounts

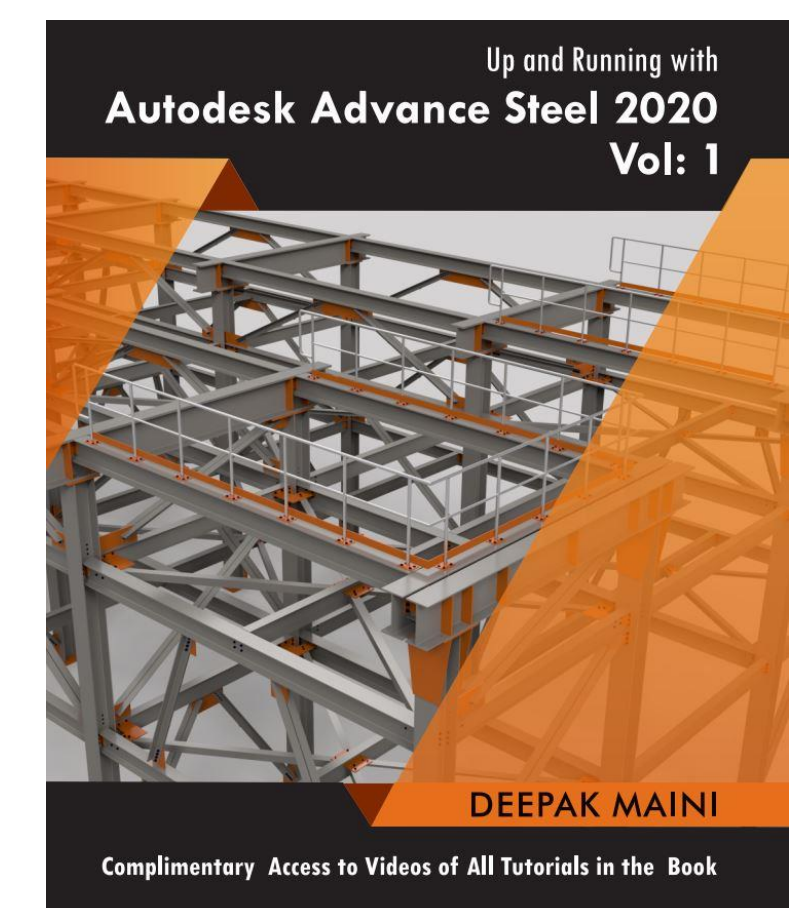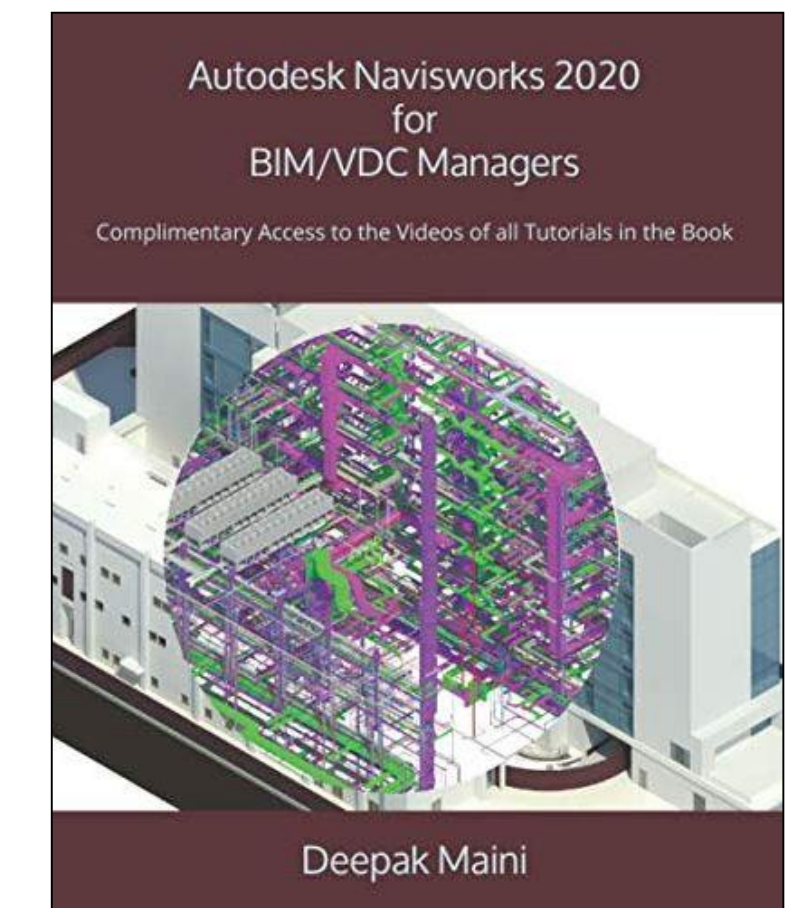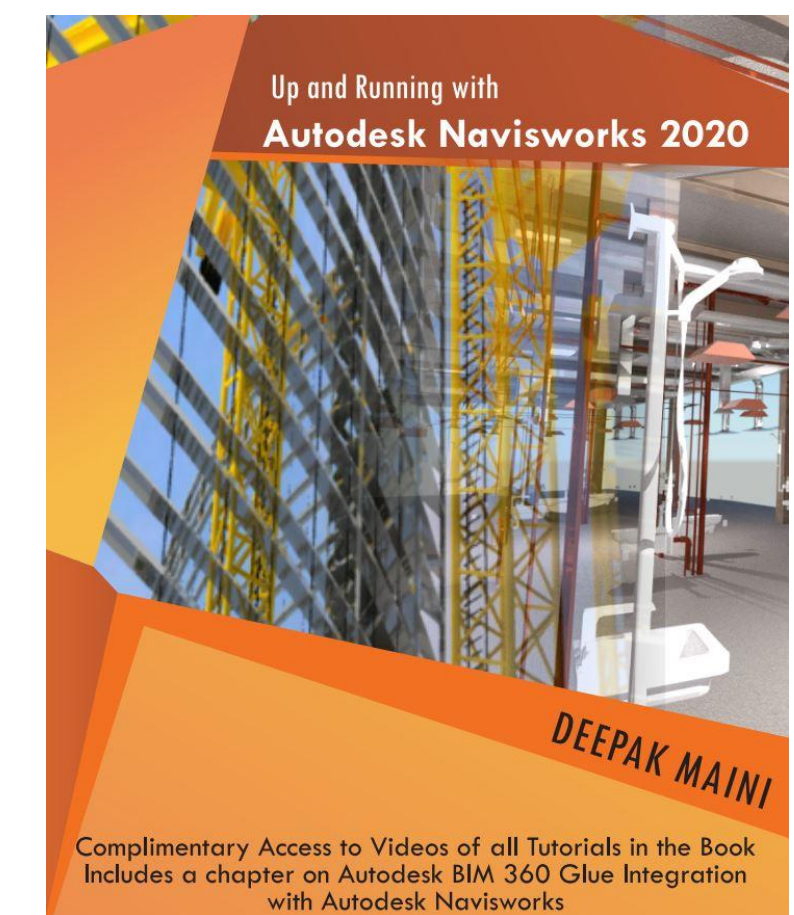Cadgroup Australia

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# Welcome to AU2019

# My Introduction

- Qualified Mechanical Engineer

- Around 20 Years of experience in the industry

- Autodesk Expert Elite, Autodesk BIM 360 Certified Consultant, Bluebeam Certified Consultant and Instructor

- Awarded the "Best Autodesk University Speaker" two years in a row at AU2018 and AU2017 in Las Vegas

- Awarded the "Best Speaker" award at the Bluebeam XCON 2019 in Washington DC

- Among the Top Speakers at various BILT conferences in Asia and ANZ

- Author of the Up and Running with Autodesk Navisworks, Autodesk Navisworks for BIM/VDC Managers and Up and Running with Autodesk Advance Steel series of books

- Guest lecturer at the University of Technology Sydney (UTS) and University of New South Wales (UNSW)

# Lab Buddies

## Aaron Coats

National BIM/CAD Manager, Bates Smart Australia

## Nikko Sudirman

Sydney Studio BIM Lead , Bates Smart Australia

## Luciane Conceicao Taylor

Product Support Specialist - BIM 360, Technical Support EMEA

Autodesk

# THANK YOU
# REVIZTO

(Please visit www.Revizto.com to know more about them)

# Acknowledgements

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# Rules of Engagement

- 5 Sections to be Completed in this lab + a Bonus Section (time permitting)

- Only have 90 Minutes (~75) to Complete All Sections

- I will Show you the Steps in Each Section First and then Let you Work on that Section

- All Required Exercise Files are saved in a Folder called C:\DATASETS\CS317848-L Navisworks Clash Detection

- Great "Lab Buddies" Here to Help You, if needed (Thank You Guys)

# Let's Get Started

# Important Rule to Remember

Fully Coordinated project does not mean <u>clash free</u>. It means clashes detected and reviewed.

For example, valid penetrations are reviewed but not resolved…

# Levels of Clashes

**Level 1 Clashes**

These are assigned the top priority and are to be fixed as soon as possible. Examples include Mechanical Ductwork Vs Structure, Mechanical Ductwork Vs Cable Trays, Mechanical Ductwork Vs Plumbing Pipes, and so on.

**Level 2 Clashes**

These are considered important for the construction process and must be rectified as the second priority. Examples include Mechanical Ductwork Vs Floors, Mechanical Ductwork Vs Fire Sprinklers, Cable Trays Vs Structure, Cable Trays Vs Ceilings, and so on.

**Level 3 Clashes**

These are generally with the items that change on regular basis during the design process. These need to be fixed only before the submission of the models. Examples include Hydraulic Pipes Vs Electrical Equipment and Fixtures, Hydraulic Pipes Vs Mechanical Equipment and Fixtures, and so on.

# Section 1: Opening the Autodesk Navisworks Model and Changing the Workspace (5 mins)

In this section, you will open the Building-Federated.nwd file and then load the AU-Lab workspace. You will then orbit the model by holding down the SHIFT Key and Wheel Mouse Button.

# Section 2: Creating Search Sets (30 mins)

In this section, you will create the following search sets based on their Element Categories:

Structure (Category <u>Contains</u> Structural)

Mechanical Ductwork (Category <u>Contains</u> Duct, <u>Negate</u> Category = Flex Ducts, <u>Or</u> Category = Mechanical Equipment)

Ceilings (Category = Ceilings)

Floors (Category = Floors)

Cable Trays (Category <u>Contains</u> Cable)

Walls (Category = Walls)

Plumbing (Category <u>Contains</u> Pipes, Element > System Classification = Sanitary, Or Category = Plumbing Fixtures)

# Section 3: Performing Clash Tests (15 mins)

In this section, you will change the workspace to Clash Detection and perform the following Level 1 and Level 2 clash tests:

Mechanical Ductwork Vs Structure

Mechanical Ductwork Vs Ceilings

Mechanical Ductwork Vs Plumbing

Mechanical Ductwork Vs Floors

Mechanical Ductwork Vs Cable Trays

Plumbing Vs Structure

# Section 4: Exporting Clash Template and Saving the Current File (5 mins)

In this section, you will export the clash tests you performed in the previous section. You will then save the current file.

# Section 5: Importing Clash Template and Updating Clash Results (10 mins)

In this section, you will open the Clash-Import.nwd file. You will then import the clash template you exported in the previous section and update the clash results.

# Bonus Section: Grouping Clashes and Highlighting Resolved Clashes

Open the Building-Federated.nwd file and run a Clash Test between

Columns and Walls

Group Clashing by Levels of Walls

Resolve Some Clashes Manually

Highlight Clashes by the Status Color

# Questions

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Make anything.