Welcome to AU 2020
The Digital Experience
Deepak’s Introduction

- National Technical Manager – Named Accounts, Cadgroup Australia
- Qualified Mechanical Engineer
- Around 21 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
- Voted “Top Speaker” at the Bluebeam XCON 2019 in Washington DC
- Author of the Up and Running with Autodesk Navisworks, Autodesk Navisworks for BIM/VDC Managers, Up and Running with Autodesk Advance Steel and Up and Running with Bluebeam Revu series of books
  - Guest lecturer at the University of Technology Sydney (UTS) and University of New South Wales (UNSW), University of Salford UK, Virginia Tech University
My Aim: Have Lots of Fun as we Learn
Acknowledgements

• Janice Miller-Kellerman and Adam Sopko from the AU Team
• Patricia Lundberg and Lauren Ames from the AU Speaker Management Team
• Pier-Andre Maynard, Nicolas Martineau, Joël St-Pierre and Autodesk Technical Crew
Learning Objectives

• Learn how to export a Revit Structure model and import it into Advance Steel.
• Learn how to create automated steel connections between the members imported from Revit.
• Learn how to generate automated fabrication drawings, BOMs, and DXF/NC files.
• Learn how to use Sync to review and import any Revit changes into Advance Steel or validate the Advance Steel model in Revit.
Inspirations
Story of Kendel Inverarity, Western Australia

- A 45 years old born and bred on the farm and grew up helping dad in the shed creating steel trusses, gates, fences, yards, you name it.

- Has a side business called The Pig Poo Lady which is basically selling bags of shit. Variety is the spice of life not to mention beer money.

- Was on 4wd motorbike chasing sheep. It was below 4°C (39F), the dog had jumped in the dam then on the bike, the sheep had gone in the wrong direction, she hurt herself opening a cocky gate.

- Decided to use the Pig Poo Sales and put herself through the Drafting studies as she wanted to be independent from our farming business.

- Plans for the immediate future: Learn Dynamo, Pyrevit, Rhino 3D, Navisworks and “your Advanced Steel”.

Let’s Start with some Stats about the Structural Industry
MOST Critical Part of Design
For Ensuring Safety of the Occupants
Only 10% Construction Cost Relates to the Structure

1st on Site

Build Foundations, Core, Skeleton

Wind, Seismic, Gravity

Not Deflect or Vibrate Beyond Acceptable Limits

14+ Structural Materials

Foundations, Rebar, Structural Steel, Metal Decks, Cold-formed Steel, Stud Walls...

Offsite and Prefab

Precast and Timber

One of the Most Disconnected Industries
Understanding the Structural Industry

Structural Design | Simulation & Verification | Detail Documentation | Fabricate & Install
Understanding the Challenges

- **Structural Design**: Engineers aren’t engaged early enough in design.
  - Impact of Poor Design Decisions

- **Simulation & Verification**: Lack of Coordination
  - Changes Not Communicated

- **Detail Documentation**: Disconnect between Coordination & Detailed Models
  - Incomplete/Incorrect Installation Instructions

- **Fabricate & Install**: Owner Receives Incomplete As-buils
Understanding the Challenges

Structural Design
- Engineers aren’t Engaged Early Enough in Design
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Detail Documentation
- Disconnect between Coordination & Detailed Models
- Incomplete/Incorrect Installation Instructions

Fabricate & Install
- Owner Receives Incomplete As-builts
So what’s the Solution???
The Solution is... Connected BIM

- A workflow in which we have a fully synchronized model from design to simulation to documentation to installation and erection
- Help reduce project complexity
- Interoperability to avoid errors and redundancies
- Result in improved productivity
- Better project coordination
Connected BIM

Structural Design | Simulation & Verification | Detail Documentation | Fabricate & Install

DESIGN  CONSTRUCTION
<table>
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<tr>
<th>Structural Design</th>
<th>Analyze &amp; Verify</th>
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Connected BIM

AUTODESK ARCHITECTURE, ENGINEERING & CONSTRUCTION COLLECTION
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<tbody>
<tr>
<td>AUTODESK® REVIT®</td>
<td>AUTODESK® ADVANCE STEEL</td>
<td>AUTODESK® ROBOT STRUCTURAL ANALYSIS PROFESSIONAL</td>
<td>NAVISWORKS®</td>
</tr>
<tr>
<td>AUTODESK® RECAP®</td>
<td>AUTODESK® STRUCTURAL PRECAST EXTENSION FOR REVIT®</td>
<td>DYNAMO FOR REVIT</td>
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# Structural Engineering Portfolio

## Connected BIM

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<td><img src="image1" alt="Structural Design" /></td>
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**Connected BIM Software**

- **Revit**: Autodesk® Revit®
- **Advance Steel**: Autodesk® Advance Steel
- **Robot**: Autodesk® Robot® Structural Analysis Professional
Paradigm Shift in the Structural Industry
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- Structural Engineers working on jobs requiring LOD 400 or above elements need to deliver fabrication level structural model.
- Especially, the projects in high seismic regions.
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- Now Structural Engineers are starting to deliver models with LOD 400 elements.
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- Especially, the projects in high seismic regions.
- Historically, only the structural detailers working under the fabricators were capable of working on the fabrication level model.
- Now Structural Engineers are starting to deliver models with LOD 400 elements.
- Autodesk Revit allows you to create steel connections inside Revit. Alternatively, you can import the structural connections from Advance Steel straight into Autodesk Revit.
Autodesk AEC Collection
Empowering the Structural Industry
Steel Tab for Structural Connection, Elements, and Features
Structural Steel Connections for Autodesk Revit 2021
Structural Steel Connections for Autodesk Revit 2021
Live Demo

Inserting Structural Connections in Revit
Leveraging Autodesk Revit Model (BIM Data) for Steel Detailing and Structural Analysis
Autodesk Advance Steel

Advance Steel is a software specifically designed for structural engineers and steel detailers who need an easy-to-use steel detailing application.

- Allows Bi-directional data interoperability with Autodesk Revit
- Automates the creation of complex structural models and connections that would be too tedious to manually model
- Increases productivity during the creation of detail documentation, fabrication drawings, bills of material (BOMs), and NC files
Advance Steel Add-In for Autodesk Revit

One of your Autodesk Subscription Benefits

1. Updates & Add-ons
2. Browser Download
Robot Structural Analysis link with Autodesk Revit
Live Demo
Leveraging Autodesk Revit Model (BIM Data) for Steel Detailing and Structural Analysis
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