

# Engineering, Architecture and Manufacturing

Increasing Productivity by Enabling Advanced Engineering  
Designs with professional grade tools



# Design Engineering, Architecture, and Manufacturing in the Modern Era.

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**The proliferation of intelligent 3D design is creating competitive advantages for engineering firms of all types by making the integration of complex technology a possibility, including :**

- Operational digital twins of real world assets to analyze IoT sensor data in context, and manage more information more intuitively.
- Real-time photorealistic visualization including augmented and virtual reality in order to understand and convey design better for a more satisfied end user.
- Generative design tools that optimize materials and guide early design decisions for the best possible outcomes.
- Reality capture technologies that are leveraging AI to make their complex datasets easier to work with and faster to capture.

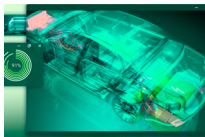
# Engineering, architecture and manufacturing use cases



## Product Design (2D/3D CAD)

PAGE 05

Take full advantage of your 2D and 3D CAD software features to efficiently develop models and prototypes.



## Simulation and Analysis (CAE)

PAGE 06

Drive performance of Computer Aided Engineering (CAE), including finite element analysis (FEA), computational fluid dynamics (CFD), and multibody dynamics (MBD).



## Visualization

PAGE 07

Efficiently enable visualization tools for creating real-time photo-realistic images and animations, as well as XR tools to view and collaborate on designs in context, by visualizing in real-world scale.



## Architectural Design

PAGE 08

Meet the demand for increased customization and shorter development cycles, even with large data sets representing the most complex building projects.



## Mechanical, Electrical and Plumbing

PAGE 09

Proficiently handle mechanical, electrical and plumbing (MEP), as well as HVAC system design and analysis to minimize waste and leverage ecologically-sound designs.



## Structural Engineering

PAGE 10

Capitalize on applications for analyzing structural components to meet safety and building code regulations.

# Engineering, architecture and manufacturing use cases

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## Reality Capture

Capture real world conditions as an input for design, to plan for maintenance, track progress, or preserve its current state.

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## Manufacturing Automation

Listen to your manufacturing floor to make better, real-time decisions - resulting in increased production and higher quality.

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## Immersive Technologies

Expand into immersive technologies such as artificial intelligence and virtual reality to develop smarter designs and simulate your product ideas.

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## Collaborators On the Go

Mobilize your project managers and design collaborators to achieve increased productivity.

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# Product design - 2D & 3D CAD



**Dell Precision 5860 Tower workstation provides scalable performance for CAD applications, such as:**

Dassault Systèmes - SolidWorks® and CATIA®, Autodesk Inventor®, AutoCAD® PTC, Creo® Siemens NX™

Combine with a single or dual Dell UltraSharp monitors and a wireless 3D Connexion Space Mouse to take advantage of the CAD software's features and to maximize productivity.

Dell Precision workstations provide the interactive performance to increase productivity, which drives faster time to market and more opportunities for iteration, resulting in better product design.

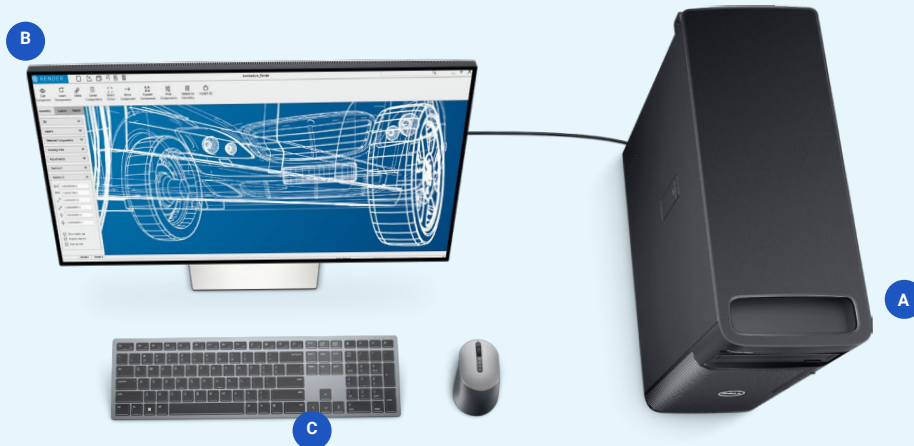
## Recommended products

- A** Dell Precision 5860 Tower
- B** Dell UltraSharp 27 4K USB-C Hub Monitor - U2724D\*
- C** Dell Premier Wireless Keyboard and Mouse - KM7321W
- D** Wireless 3DConnexion SpaceMouse Pro\*

## Mobile solution

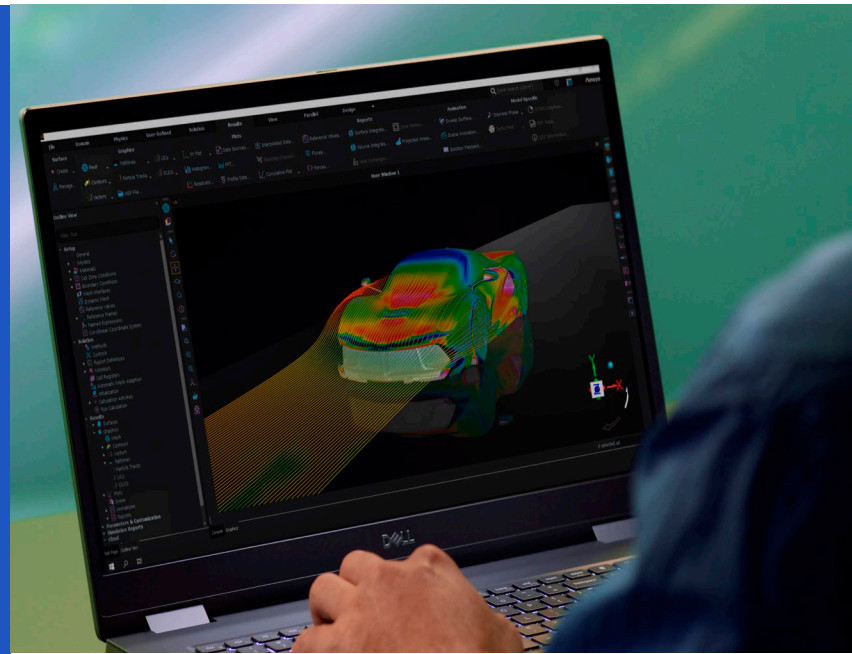
- E** Dell Precision 7780\*
- F** Dell Thunderbolt™ Dock - WD22TB4\*
- G** Dell Pro Wireless ANC Headset - WL5024\*
- H** Dell EcoLoop Pro Briefcase - CC5623\*

\* Not pictured



# Simulation and analysis (CAE)

Power optimization, generative design and digital twin technology to provide better part design and faster time to market.



**The Dell Precision 7960 Tower or 7680 mobile workstations provide scalable performance for CAE applications, such as:**

ANSYS® Mechanical™, Fluent®, Discovery™ Live Altair® HyperWorks®, solidThinking® COMSOL Multiphysics®

Combine with a single or dual Dell UltraSharp monitor(s), wireless keyboard and mouse and wireless headset for an exceptional user experience.

Dell Precision workstations provide the extreme performance to enable new paradigms in CAE such as digital twins, multi-physics, optimization and generative design.

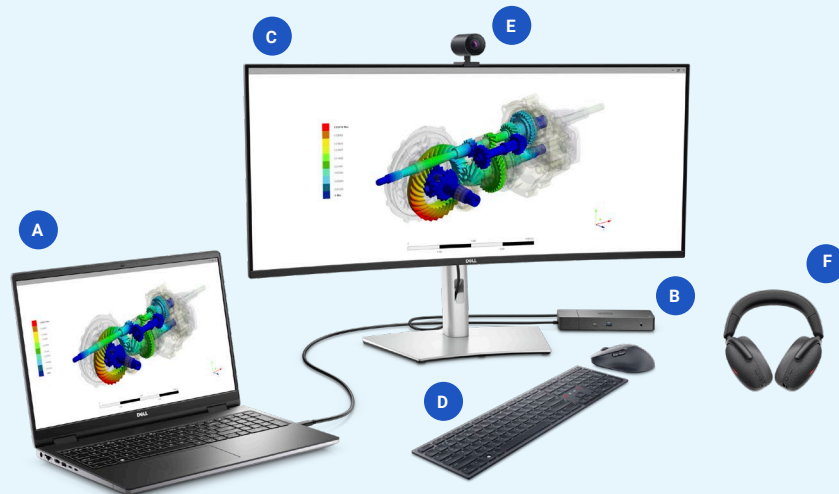
## Recommended products

- A** Dell Precision 7680
- B** Dell Performance Dock – WD19DCS
- C** Dell UltraSharp 38 Curved USB-C Hub Monitor - U3824DW
- D** Dell Premier Collaboration Keyboard and Mouse - KM900
- E** Dell UltraSharp Webcam - WB7022
- F** Dell Premier Wireless ANC Headset - WL7024
- G** Wireless 3DConnexion SpaceMouse Pro\*

### Desktop solution

- I** Dell Precision 7960 Tower\*

\* Not pictured



# Visualization

Create photo-realistic images in real time, animations and use AR/VR tools to view and collaborate on designs in context, real-world scale.



**The Dell Precision 5860 Tower or 7780 mobile workstation provides scalable performance for visualization applications, such as:**

Dassault Systèmes® SOLIDWORKS Visualize, 3DEXCITE, Autodesk® 3ds Max®, VRED, Siemens PLM Teamcenter® Visualization

Dell Precision workstations provide the CPU and GPU performance to make visualization an extension of the design process.

Include 4K displays and a VR solution to amp up your work space.

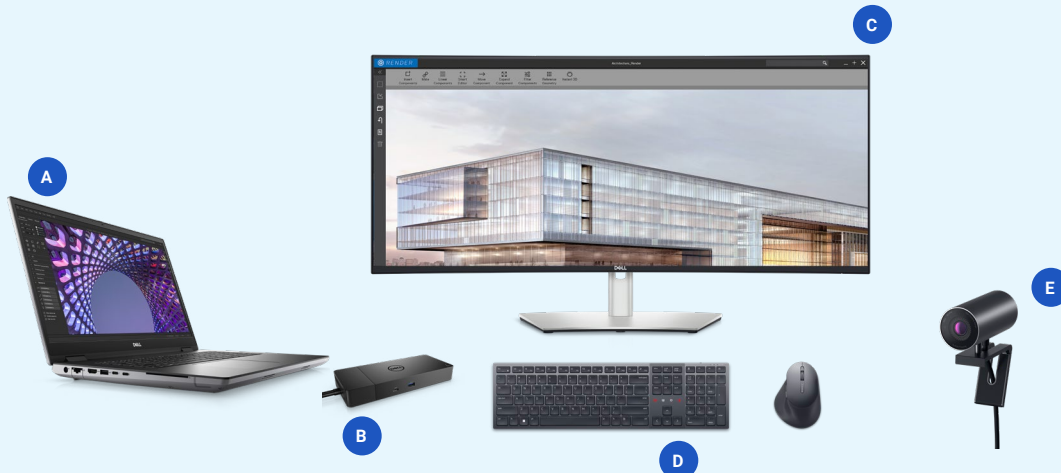
## Recommended products

- A** Dell Precision 7780
- B** Dell Performance Dock – WD19DCS
- C** Dell UltraSharp 38 Curved USB-C Hub Monitor - U3824DW
- D** Dell Premier Collaboration Keyboard and Mouse - KM900
- E** Dell UltraSharp Webcam - WB7022
- F** HTC VIVE Pro 2 - Virtual Reality Headset\*

### Desktop solution

- G** Dell Precision 5860 Tower\*

\* Not pictured



# Architectural design

Meet competitive demands and delight your clients utilizing design reviews in a rich mixed reality environment.



**The Dell Precision 3680 Tower workstation provides space-savings and powers architectural applications, such as:**

Autodesk Revit®, AutoCAD® GRAPHISOFT® ARCHICAD Bentley Software MICROSTATION Robert McNeel & Associates Rhino®

Precision workstations provide the interactive performance to increase productivity, drive faster time to market and open more opportunities for iteration, resulting in better building and site planning, design and more collaborative workflows. With Precision you can also show your work in VR/AR applications.

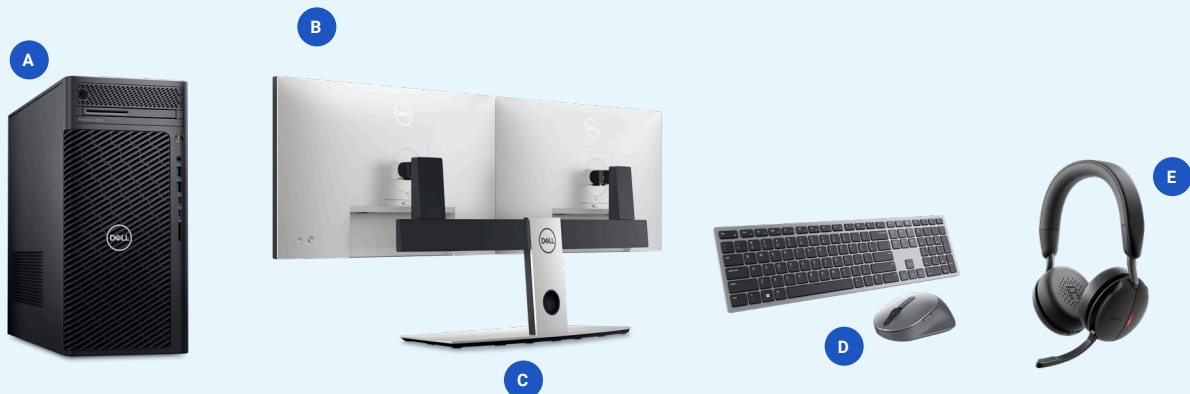
Dual monitors, wireless keyboard and mouse and wireless headset provide a more comprehensive work space.

## Recommended products

- A** Dell Precision 3680 Tower
- B** Dell UltraSharp 27 4K USB-C Hub Monitor - U2723QE
- C** Dell Dual Monitor Stand MDS19
- D** Dell Premier Wireless Keyboard and Mouse - KM7321W
- E** Dell Pro Wireless ANC Headset - WL5024
- F** 3DConnexion SpaceMouse Wireless\*
- G** HTC Vive Pro\*
- H** Dell Precision 7680\*

### Mobile solution

\* Not pictured





# Mechanical, electrical and plumbing

Create detailed 3D design for documentation or model for fabrication and construction. Also perform clash coordination including 3D scan data.



**The Dell Precision 7875 Tower provides outstanding performance and reliability for MEP and HVAC applications, such as:**

Autodesk® Revit® MEP, AutoCAD® MEP, Navisworks® Trimble® PipeDesigner™, DuctDesigner™

Dell Precision workstations provide the GPU and CPU power to view and analyze complex data sets.

Include 4K monitor(s) and a Wireless 3DConnexion SpaceMouse to enhance the workspace and productivity.

## Recommended products

- A** Dell Precision 7875 Tower
- B** Dell UltraSharp 27 4K USB-C Hub Monitor - U2723QE
- C** Dell Dual Monitor Arm - MDA20
- D** Dell UltraSharp Webcam - WB7022
- E** Dell Premier Wireless Keyboard and Mouse - KM7321W
- F** Wireless 3DConnexion SpaceMouse\*
- G** Dell Premier Wireless ANC Headset - WL7024

\* Not pictured



# Structural engineering

Simulate and analyze alternate solutions to deliver optimized designs more efficiently and at a reduced cost.



**The Dell Precision 5860 Tower workstation provides scalable performance and reliability for structural engineering applications, such as:**

AutoCAD® Revit® Structure, Advance Steel, Tekla® Structural Designer, Bentley Software MICROSTATION, STAAD.Pro, RAM® Steel

With a single or dual Dell UltraSharp 4K display, experience incredible image quality and color accuracy.

## Recommended products

- A** Dell Precision 5860 Tower
- D** Dell Speakerphone SP3022\*
- B** Dell UltraSharp 32 HDR PremierColor Monitor - UP3221Q
- E** Dell UltraSharp Webcam - WB7022\*
- C** Dell Premier Wireless Keyboard and Mouse - KM7321W
- F** Dell Precision 7680 mobile workstation\*

\* Not pictured



# Service Providers, Logistics and Operations

Keep the plant floor and construction sites and deliveries moving with rugged systems that thrive in tough environments.



Dell Rugged solutions are built for world-class reliability in harsh environments where dust, water, extreme temperatures and vibrations are present. Get the toughest jobs done with stunning performance, reliable connectivity and outdoor-readable displays.



## Recommended products and accessories

- A** Latitude 7030 Rugged Extreme Tablet
- B** Detachable Keyboard
- C** Rotating Hand Strap
- D** Magnetic Mount
- E** Rigid Handle with passive pen
- F** Kickstand
- G** Mobile Battery Charger
- H** Rugged Active Pen
- I** Dell 27 USB-C Hub Monitor - P2725HE\*



# Reality Capture



Leverage LiDAR, SLAM, or photogrammetry to digitally capture real world conditions, improving design accuracy and project planning.

The Dell Precision 7000 Series provides the performance, reliability, and scalability for reality capture workflows including:

Leica Cyclone, FARO Scene, Autodesk ReCap, Pix4D, and 3D Repo.

Precision workstations help you handle the intensely large datasets of reality capture. Speed up the time it takes to get from the capture device to actionable, sharable data.

## Recommended products:

- A** Precision 7780
- B** (2) UltraSharp 27 4K Monitors U2723QE
- C** HTC VIVE Pro 2 VR Headset & StarTech USB-C to DP adapter\*
- D** Performance Dock - WD19DCS
- E** Premier Wireless Keyboard and Mouse KB900 & MS900\*
- F** EcoLoop Pro Backpack CP5723

## Desktop recommendation:

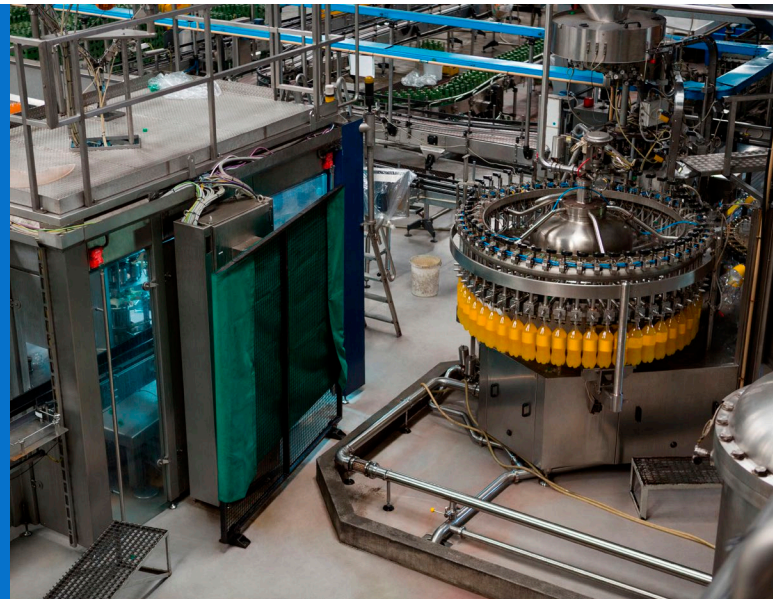
- G** Precision 7960 Tower\*



# Manufacturing automation

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Connect scanners, programmable logic controllers (PLCs) and motors, to integrate relevant data with intelligent upstream applications.



## Integrated and automated

Dell Edge IoT products are fanless, designed and engineered to withstand harsh industrial conditions and operate reliably 24x7. Multiple deployment options such as inside control cabinets, on a DIN rail, or outside a cabinet without a mount provide customizable IoT solutions for the manufacturing floor.

Also consider embedding a rack workstation inside manufacturing equipment or as standalone units on the floor because they can withstand extended temperatures and provide outstanding performance.

Make informed decisions based on available data and continuously identify overall volume of products in production and apply set criteria, such as historical performance, to identify ideal products for auditing.



# Immersive productivity

Take your designs to new levels with artificial intelligence and Xreality.



Dell has “Ready for VR” and AI solutions that are optimized for the intensive graphic and processing power that they require. Our solutions are verified and certified by our Dell Technology Partner Program to ensure reliable performance.

Apply immersive technologies to existing business processes or develop new ones to creative or enhance your competitive advantage and drive the future of design and factory.

## Recommended products



## Additional setups

- A** Dell Precision 5860 Tower
- B** HTC Vive Pro<sup>†</sup>
- C** Dell UltraSharp 32 HDR Monitor UP3221Q

## Mobile solution

- D** Dell Precision 7780
- E** Dell Performance Dock – WD19DCS
- F** Dell EcoLoop Pro Backpack - CP5723

\* Not pictured  
 † Not available in all countries

# Employeess on the go

Run to Meetings. Collaborate. Present.  
Rock it. Repeat.



## Stay connected and get more done with Latitude notebooks.

Get to work fast and stay productive with Dell Latitude notebooks, which provide small, light, and stylish designs for smart and secure end-user experiences. With a Collaboration Touchpad that puts critical Zoom and Microsoft Teams conferencing controls<sup>1</sup> at your fingertips, 5MP IR cameras featuring Intelligent Privacy, and quad speakers; the Latitude 7350 and 7450 Ultralight laptops deliver innovation in collaboration and connection.

<sup>1</sup>. Collaboration icons are only visible during Zoom or Microsoft Teams calls. Compatible video conferencing platforms are subject to change.

## Recommended accessories



- A** Dell Latitude 7350/7450 Ultralight
- B** Dell 14 Portable Monitor - P1424H
- C** Dell EcoLoop Urban Backpack 14-16-CP4523G
- D** Dell Thunderbolt™ 4 Dock - WD22TB4
- E** Dell Speakerphone with Multiport Adapter - MH3021P
- F** Dell Wireless Mouse-WM126
- G** Dell 65W USB-C Adapter\*

\* Not pictured

# Simplify IT

Our most secure<sup>1</sup> and most manageable offerings make IT management a breeze<sup>6</sup>

## SECURITY

Improve fleet-wide security with multiple layers of defense

Reduce the attack surface and enhance long-term cyber resilience with [Dell Trusted Workspace](#)

Dell offers the industry's most secure commercial PCs<sup>1</sup> with protections competitors cannot match:



### Be secure from first boot

Rigorous, state-of-the-art supply chain controls and Dell-unique Secured Component Verification reduce the risk of product tampering.



### Spot ticking timebombs

Early-alert feature Indicators of Attack, offered only by Dell, scans for behavior-based threats.



### Stay protected from evolving threats

Only Dell offers off-host BIOS and firmware verification, providing greater security than other PCs. The latest Intel vPro<sup>®</sup>-based PCs provide an estimated 70% attack surface reduction.<sup>5</sup> Layer on advanced threat protection with software from our ecosystem of best-of-breed partners.

Only Dell integrates device telemetry<sup>1</sup> with industry-leading software to improve fleet-wide security.<sup>4</sup>

[Learn More >](#)

## MANAGEABILITY

Manage your fleet of PCs - reliably and easily

Help secure and optimize your endpoints and deliver end-user productivity with [Dell Manageability Solutions](#)

[Dell Trusted Update Experience](#) makes it simple to update endpoints, packing the latest BIOS, driver, and firmware version. Dell is the only Top-5 PC vendor that:



### Publishes<sup>2</sup> a device drivers and downloads release schedule:

IT Admins can deploy fleet-wide device updates on a predictable timeline.



### Performs<sup>3</sup> integrated validation of all driver and BIOS modules in an update:

IT Admins can expect a trusted, system compatible update deployment, across a fleet of devices.



### Dell has the industry's first:<sup>6</sup>

Binary Large Object (BLOB) package-based solution using Microsoft Intune

Systems Management Solution to integrate with Workspace ONE

Hardware OEM systems management solution to integrate with Intel vPro<sup>®</sup>

[Learn More >](#)