INVEST WINDSORESSEX

# VR CAVE

**The Invest WindsorEssex VR CAVE**, located in Windsor, Ontario, Canada is an **immersive and active virtual reality (VR) environment** integrated with state-of-the-art hardware and software. The facility serves as a teaching, training and research tool for the Windsor-Essex region and beyond, designed to support Connected and Autonomous Vehicle technology development.

**REVOLUTIONARY**

Virtual reality CAVES could help automakers and their suppliers become more technologically innovative and competitive in the global marketplace.

Dave Hall,
Automotive News Canada

Powered by ANSYS, Simutech and Barco, the Invest WindsorEssex VR CAVE delivers advanced simulation capabilities including:

- Advanced manufacturing simulations virtual training
- Walkthroughs (cockpits, buildings etc.)
- Perceived quality evaluations
- Advanced driver assistance systems testing
- Autonomous testing & engineering
  - Component simulation
  - HMI evaluation
  - Virtual drive scenarios
- Colour and material studies
- High-end data visualizations
- 1:1 scale virtual reviews

## Why is virtual reality useful to industry?

Virtual reality provides many valuable opportunities to aid in product development including: simulation, skills training, communication, and collaboration.

Virtual prototyping allows products/processes to be tested **before final verification with physical prototypes is performed.**

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AVIN Ontario

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## Invest WindsorEssex VR CAVE Highlights

Virtual Reality Visualization Tools

### CAVE

A CAVE automatic virtual environment is an immersive virtual reality environment ideal for design, engineering and simulation. The Invest WindsorEssex VR CAVE uses 4 x 15 ft screens to create a cube room-sized virtual environment.

- 4 Barco UDX 4K projectors
- Active stereoscopy
- 3,840 x 2,400 resolution
- 31,000 lumens
- 2,000:1 contrast ratio
- 4 15 ft Barco screens
- ART smart track motion capture system
- 6 cameras enabling full body tracking
- Finger tracking

### Head-Mounted Displays (HMDs)

Head-mounted displays (HMDs) are worn on the head or as part of a helmet, that has a small display optic in front of one or each eye. These have the smallest footprint with lower resolution than the CAVE, but are easy to deploy in any given environment.

- HTC VIVE Pro headset
- 1440 x 1600 pixels per eye
- 110-degree field of view

### Data Processing

- 4 computers running NVIDIA RTX GPUs

### Invest WindsorEssex VR CAVE Partners

Ansys, BARCO, SimuTech Group, University of Windsor, St. Clair College, WE-tech Alliance

For more information, to schedule a visit or talk about how your company can leverage the Invest WindsorEssex VR CAVE contact:

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