

WINDSOR-ESSEX VIRTUAL REALITY CAVE

WindsorEssex
ECONOMIC DEVELOPMENT



Institute for
Border Logistics
and Security



The Windsor-Essex (WE) Virtual Reality CAVE, located in Windsor, Ontario, is an **immersive and active virtual reality 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 development.

Powered by ANSYS, Simutech and Barco, the Windsor-Essex Virtual Reality CAVE delivers advanced simulation capabilities including:

- ◊ Advanced Manufacturing Simulations
- ◊ Virtual Training
- ◊ Walkthroughs (cockpits, buildings, etc.)
- ◊ Perceived Quality Evaluations
- ◊ ADAS and Autonomous Testing & Engineering
 - › Component simulation
 - › HMI evaluation
 - › Virtual drive scenarios
- ◊ Color and Material Studies
- ◊ High-End Data Visualizations
- ◊ 1:1 Scale Virtual Reviews

WHY IS VIRTUAL REALITY USEFUL TO INDUSTRY?

Virtual Reality (VR) 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.

“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

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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 WE VR CAVE uses 4X15ft screens to create a cube room-sized virtual environment.

- ◉ 4- Barco UDX 4K projectors
- ◉ Active Stereoscropy
- ◉ 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

HMD:

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

VR CAVE PARTNERS



For more information, to schedule a visit or talk about how your company can leverage the WE Virtual Reality CAVE contact:

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