

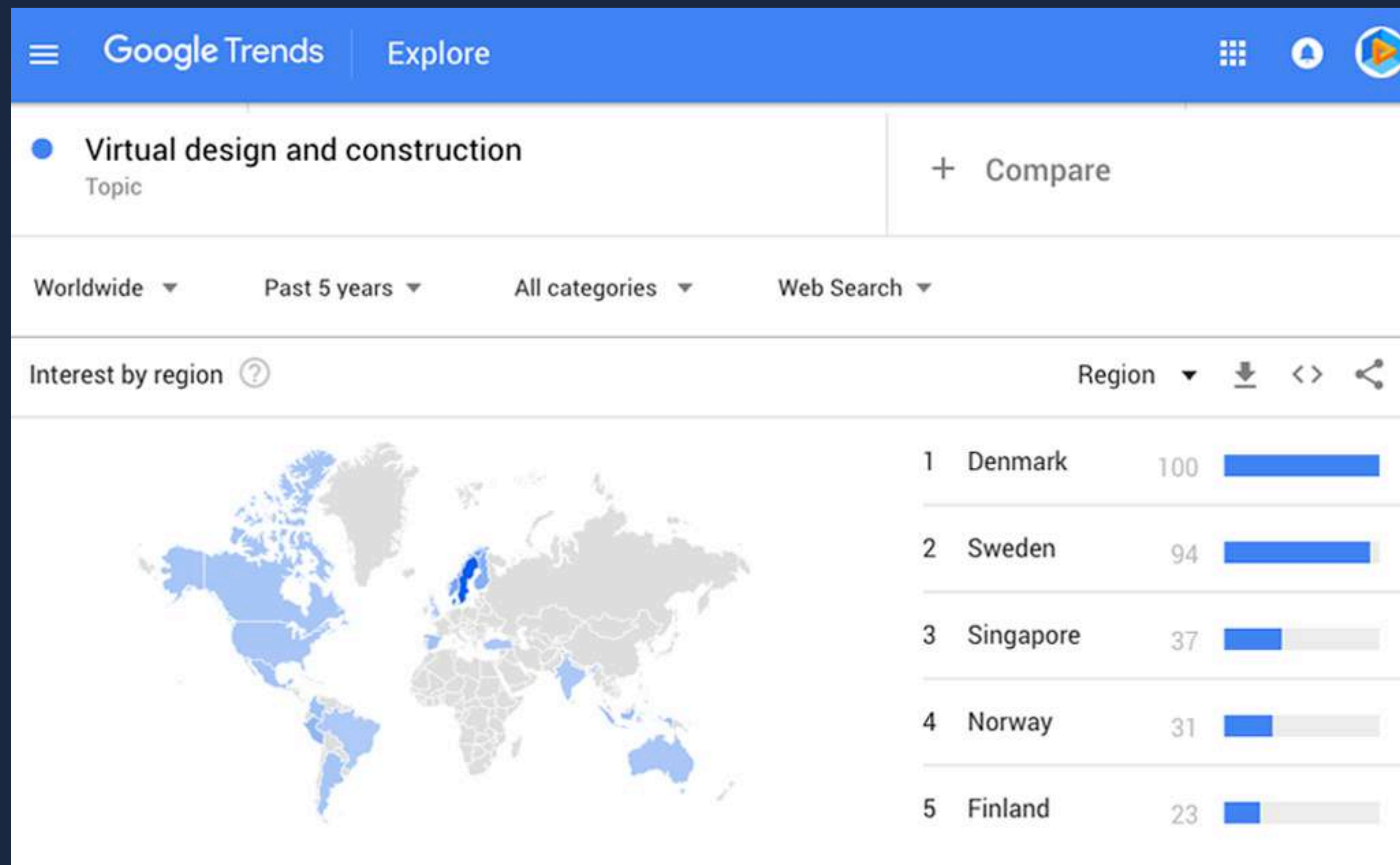


AEC SOLUTION DECK 2019

Redefining Collaboration in Architecture, Engineering and Construction.

VRcollab enables all building stakeholders to actively engage in its coordination regardless of *Project Phase*, *Model Format* and *BIM Technical Skill*.

CONSTRUCTION : CURRENT TRENDS



Worldwide Trend of Google Searches over past 5 years for the term "Virtual Design and Construction" (VDC)

Increasing trend of **Compulsory BIM Submission**, mandated by Government and Private Developers alike

Project execution methodologies developed and adopted such as **Virtual Design and Construction (VDC)**, which specifies that technologies such as VRcollab be implemented throughout its design and construction

CONSTRUCTION : SCOPE OF PROBLEM



Inaccessibility of Data

Low interoperability of propriety BIM Authoring software and tools



High Rework Rates

A majority of the need for reworks are attributed to poor communications



Low Technical Skill Levels

Lower BIM skilled stakeholders are not able to collaborate effectively

Poor Communication, Reworks, Bad Data Management
costs Construction Industry \$177.5B Annually

"Cost Management in Construction Projects: Rework and Its Effects," published in the Mediterranean Journal of Social Sciences

VRCOLLAB : THE SOLUTION

MERGE

BIM DATA



DATA

DATA

Solving interoperability between different proprietary BIM formats with no data loss

MEET

STAKEHOLDERS



PEOPLE

PEOPLE

Coordinate effectively with other stakeholders seamlessly in person or through the internet

MANAGE

BUILT PROJECTS



PEOPLE

DATA

Query, validate and reiterate BIM design and information regardless of technical level



Inaccessibility of Data



High Rework Rates



Low Technical Skill Levels

VRCOLLAB : WORKFLOW

MERGE

BIM DATA



Automated Full Data
exportation from BIM into
VRcollab, ability to merge
formats for use in coordination

MEET

STAKEHOLDERS

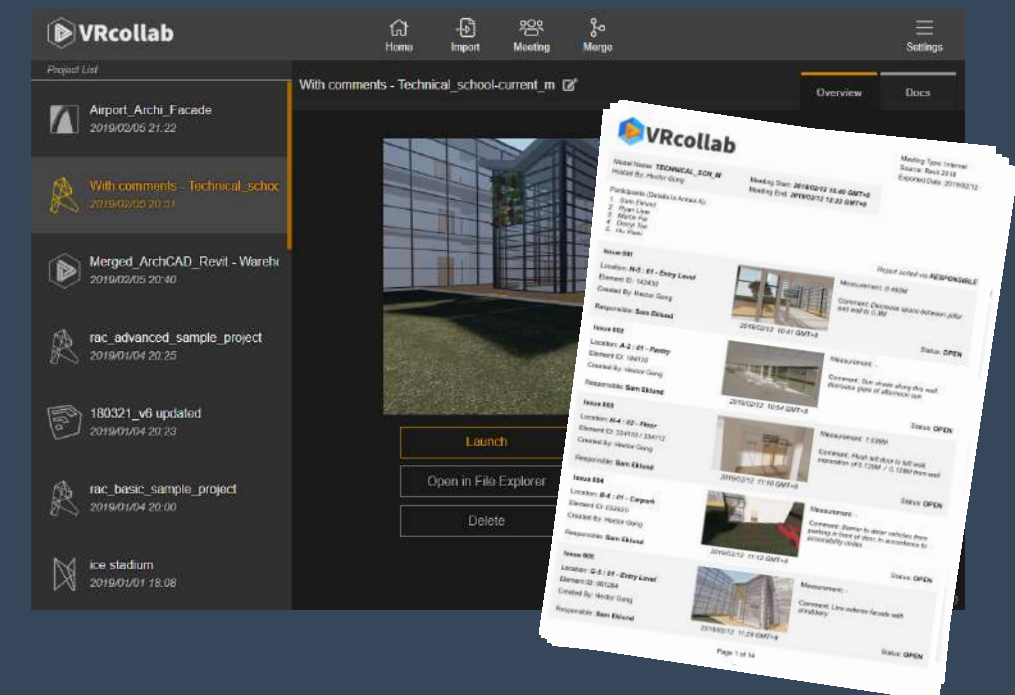


VRcollab LITE Software

Coordinate with Stakeholders
in the same meeting room or
over the internet (VR not
required by participants)

MANAGE

BUILT PROJECTS



Generate Coordination
Annotations & Comments
for BIM Model Reiteration
and logging of design issues

Reiterate design in BIM based on Coordination Report

CLIENTS & USECASES



Rexter Retana

Digital Delivery Manager
Mott MacDonald

"VRcollab truly redefines collaboration in construction. It allows us to collaborate more effectively and efficiently while immersing ourselves into the virtual space; which was unachievable in current conventional practice"



Darren Burrows

Senior Engineer
BECA Group

"With VRcollab, we can certainly increase the efficiency of our drawing reviews and also have a greater accuracy while being more confident with our complete design"



Khalil Shaiful

Digital Delivery Manager
Boustead Singapore

"As a builder and main contractor, we are able to use VRcollab to connect the site to Headquarters, where we are able to get faster and a more informed decision from our project directors"



KL-Singapore Highspeed Rail

Using VRcollab, AECOM was able to coordinate the design of the Singapore-Malaysia Highspeed Rail (HSR) Project with no data loss when merging the proprietary BIM formats of Rhino and Revit. While easily navigating and validating the BIM information with the Land Transport Authority (LTA) as its client.





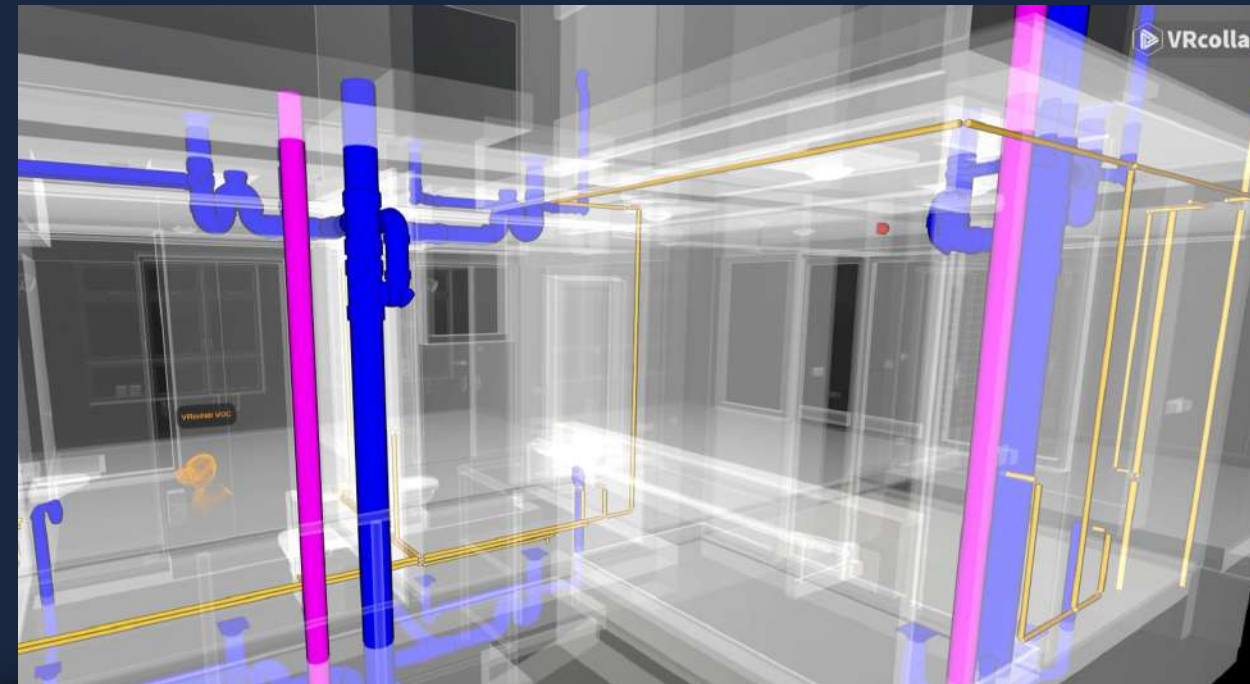
One North ALICE Smart Building

Boustead as its Developer and Main Contractor, used VRcollab Internet Multiuser Feature to coordinate with Project Directors in Headquarters. Which were then able to make a more informed decision without having to travel down to site.

VRCOLLAB LITE : FEATURES



Section Cut Revit BIM Model



X-Ray Render Mode with MEP Highlights



Cross Internet Stakeholder Coordination

LIST OF FEATURES

- Revit Integration (2014-19)
- ArchiCAD Integration (21-22)
- Rhino 3D 6 Integration
- Navisworks Manage 18 Integration
- Sketchup Integration (16-18)
- Direct .OBJ Import
- Precise Measurements
- BIM Object Information Query
- Text Comments
- Freehand Annotations
- 360 Panorama Capture*
- Viewport Screenshot
- Merge Multiple BIM Formats
- Multiple BIM Render Modes
- MEP Coloured Highlights
- Gridlines (Revit & ArchiCAD*)
- Coordination Report
- Web Browser Review*
- Keyboard & Mouse Centric Full Feature sets
- VR Hardware Compatible (HTC VIVE, Oculus, WindowsMR)
- Multiuser Internet Meetings
- Section Box, Minimaps & more.....

*Currently in Beta Testing and Development

VRCOLLAB LITE : LICENSING

1 CONCURRENT USER

REQUIRES:

1 VRCOLLAB LITE LICENSE

1 COMPUTER

1 VR HARDWARE (COMPLETELY OPTIONAL)

\$2200 USD/seat/year
or **\$3000 SGD**

LIST OF FEATURES

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OTHER PRODUCTS : VRCOLLAB STUDIO

C.A.V.E for BIM Coordination

VRcollab Studio is a software that allows for quick automated BIM to Stereoscopic Conversion. Enabling CAVE hardware setups to be turned into BIM Coordination facilities, supporting up to 6 screens and 15 stakeholders.

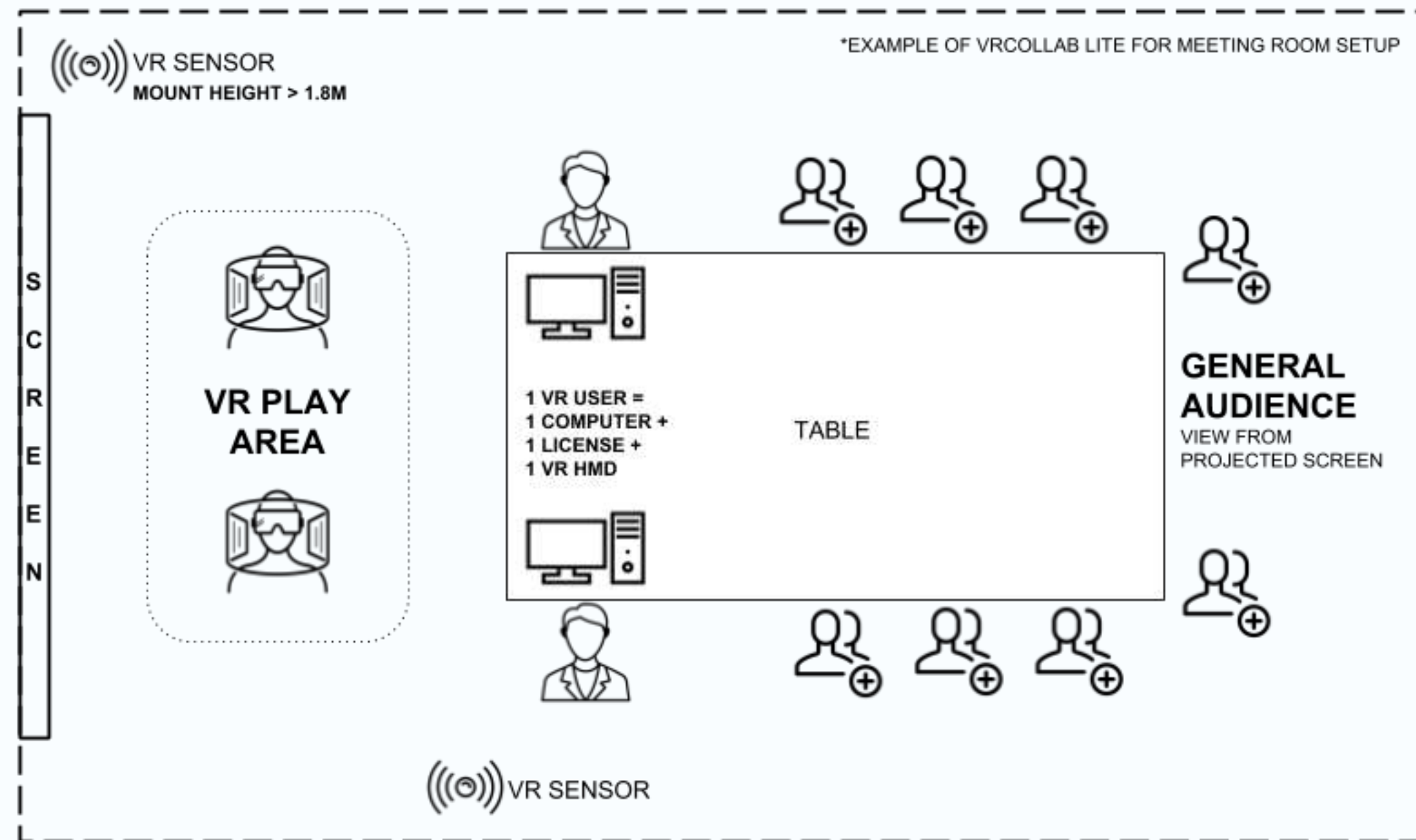
Contact us at info@vrcollab.com for more information

Enterprise Pricing



VRcollab STUDIO: Surbana Jurong BIM and Virtual Reality Meeting Room

RECOMMENDATIONS : SPATIAL SETUPS

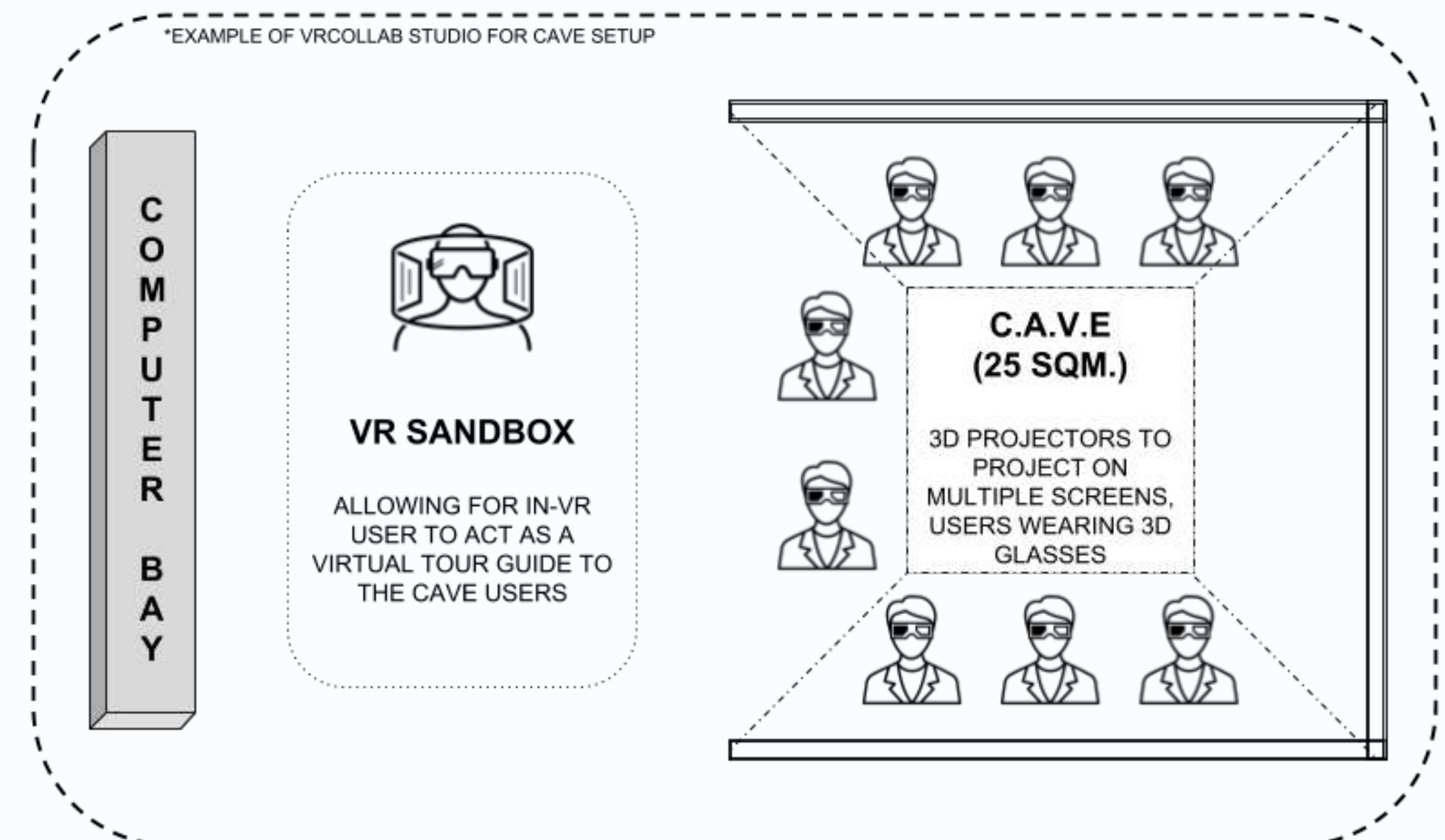


Location: **Meeting Room**

Complementary Facilities: *Projector and Screen*

Stakeholder Capacity: **2 - 10 pax**

Benefit: *Converts a basic meeting room into a VR coordination facility*



Location: **Open Area / Showroom**

Complementary Facilities: *Approx 25 sqm. space, CAVE System*

Stakeholder Capacity: **10 - 20 pax**

Benefit: *Repurposing area into an Organisational showroom*

HARDWARE : SPECIFICATIONS

COMPUTER REQUIREMENTS

Virtual Reality usage is GPU intensive, where the larger the geometric data of the BIM model, the more the GPU would have to dynamically render.

BIM Modelling usage on the other hand is CPU intensive, and much like its GPU counterpart, requires higher specifications to run larger BIM models.

As such an ideal machine for both BIM and VR usage would meet the following specifications:

- A. **CPU:** *i-7 or i-9*
- B. **GPU:** *Nvidia GTX 1080 or 2080*

Desktop setups are suited for fixed settings (eg. Meeting Room) where movement of the setup is infrequent

Laptop setups are perfect for use-cases that need to be quick to set-up and used frequently at different locations (eg. Client Meetings, On-site)

VR HARDWARE (OPTIONAL FOR VRCOLLAB USAGE)

VR Hardware sets	HTC VIVE CE	Windows Mixed Reality	HTC VIVE Pro
Head Mounted Display (HMD) ALL 3 HMDs have wires connected to computer. (VIVE PRO has Wireless adaptor as optional accessory)	 Resolution: 2160 x 1200 (1080 x 1200 per eye) resolution	 Most Windows MR headsets feature 1,440x1,440-resolution displays,	 Resolution: 2880 x 1600 (1400 x 1600 per eye, and 615 ppi)
Controllers 1 set consists of 2 controllers (1 for each hand)			
Sensors 1 Set consists of 2 Base Stations Each mounted to basic screw in (Camera Tripod stand not included)	 Tracking Volume: 3.5 x 3.5 Meters Compatible with: VIVE CE / VIVE PRO	NO EXTERNAL SENSORS Controllers may lose tracking for a moment when HMD is not directed at them (For eg. Controllers placed behind the back)	 Tracking Volume: 10 x 10 Meters Compatible with: VIVE PRO



CONTACT US at info@vrcollab.com

MORE INFORMATION on <https://vrcollab.com/>

REGISTER AND DOWNLOAD THE FREE TRIAL from <https://vrcollab.com/register/>