SUCCESS STUDY | IMMERSIVE

CREATING A GROUND-BREAKING REAL ESTATE BUYING EXPERIENCE

IMMERSIVE Design Studios delivers a vivid, social experience in real time using proprietary software powered by the NVIDIA® Quadro® M6000.

NVIDIA

NVIDIA Quadro M6000 GPUs provide the rendering power needed to seamlessly blend multiple media layers into an interactive experience for prospective real estate buyers.

AT A GLANCE

CUSTOMER PROFILE

Company: IMMERSIVE Design Studios

Industry: Live digital installations

Region: U.S. and Canada

Size: 16 employees

SUMMARY

- Leading digital installation and software development company needs to deliver a complex immersive and interactive experience for high-end real estate buyers.
- Standard AV technology limits performance and creativity.
- Built a custom server based on NVIDIA Quadro technology to run their proprietary CANVAS software.
- Combining NVIDIA GPUs and CANVAS is delivering a market-leading sales experience for the Lodha World One tower.

SOFTWARE

Proprietary CANVAS software developed by IMMERSIVE Design Studios.

HARDWARE

Dual NVIDIA Quadro M6000

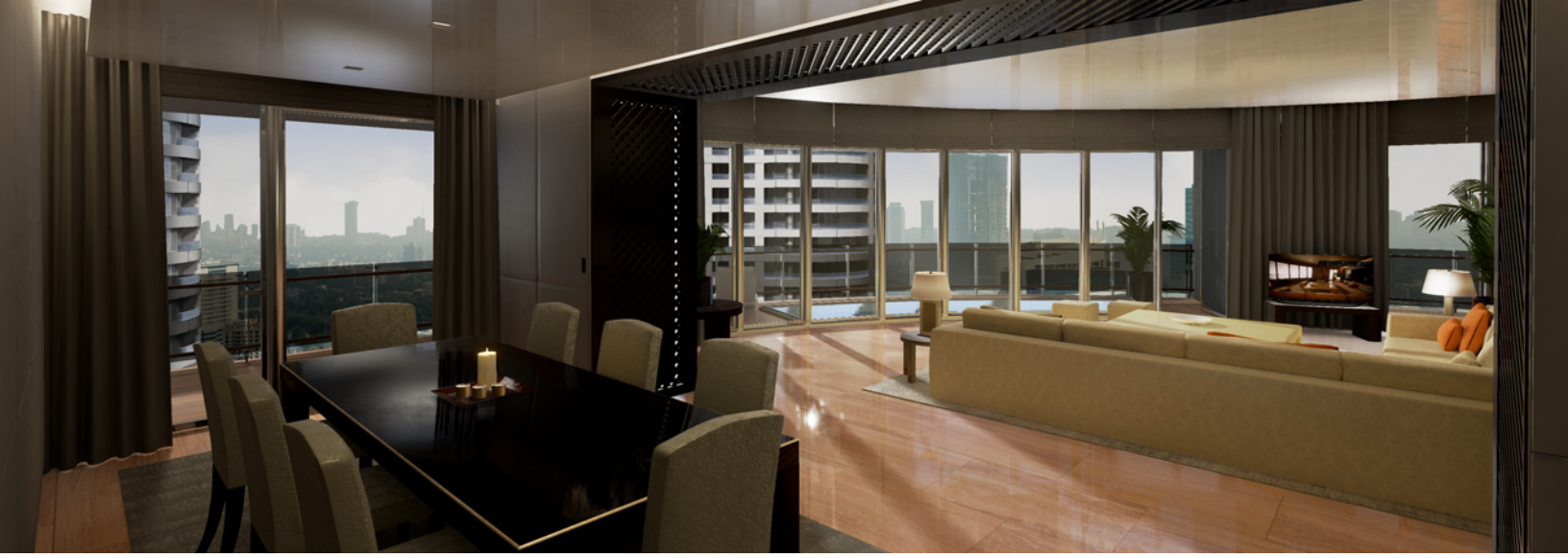
Based in Montréal, Canada, IMMERSIVE Design Studios is a software and design company that specializes in harnessing the power of 3D game technology to create highly immersive and interactive live digital installations. Their proprietary, next-generation CANVAS software and media server extends the possibilities for virtual, augmented, and mixed reality in enterprise-oriented projects by blending game engine content, video playback, and live capture into a single solution. This creative leveraging of technology to integrate various forms of media draws on the founders' experience in art and architecture to revolutionize the way that brands connect with audiences.

CHALLENGE

In 2015, IMMERSIVE began creating a unique, sophisticated, and memorable sales environment for potential buyers in Lodha World One, which will become the world's tallest residential tower when completed in 2017 in Mumbai, India. This experience would be user-centric, exploratory, and extend beyond simply visiting a model unit. Users would begin their visit as if they were approaching their real future residence… from driving up to the main entrance and being greeted by a virtual receptionist to seeing any unit on any floor or visiting any amenity, such as the gardens or spa.

"We wanted the custom-built World One circular presentation center to allow visitors to explore life-sized interactive scenes portraying more than 70 different interconnected spaces in and around the tower complex," said Kora Van den Bulcke, co-founder of IMMERSIVE. "Achieving a level of realism and dynamism that provides the full experience of living in the tower right down to the incredible views in all four seasons, luxury finishes in each room, different furniture placements, and even watching a show on a live TV makes for a very personal visit."

"A traditional so-called immersive setup relies on VR goggles," continued Thomas Soetens, co-founder of Immersive. "The problem is that goggles are designed to isolate the user from their environment. This is not conducive to an immersive, social experience. We developed



We developed CANVAS to deliver real-time game engine content, integrated video playback, high-resolution images, and handle large-scale projection surfaces. Without CANVAS, these projects would require a long series of cumbersome AV tools between the feed and the projectors—a setup that could not deliver the real-time immersive experience we needed for the Lodha project.

Thomas Soetens
Co-Founder
IMMERSIVE

REASONS FOR Quadro

1. Cost-effective compared to legacy AV solutions
2. Double the performance of competing GPUs
3. Easy to implement CANVAS on any server
4. Automates calculations for a smooth, immersive experience
5. Sub-pixel calibration for a seamless presentation
6. Stable, enterprise-grade production drivers

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SOLUTION

The goal for the Lodha project was to take Unreal Engine 4 and create all functionalities in CANVAS to support a enterprise grade immersive experience. This included both GPU-oriented image processing (projector alignment, warp and blend) and multi-channel audio control and calibration in a single software solution.

"We also wanted to design a solution where we can run multiple layers of content such as video footage, camera capture and game engine environments simultaneously and equally controlled by CANVAS," explained Soetens. "To date, this project is by far the largest architectural visualization ever done in UE4 at three times HD resolution."

For the Lodha project, the IMMERSIVE R&D team built a custom server around two NVIDIA M6000 Quadro cards and one NVIDIA sync card, with an Intel Core i7 CPU and 32GB of DDR4 RAM. This server runs the proprietary CANVAS media-server software, which feeds video to three Barco F85 projectors running at WXGA (1900x1200) resolution.

"CANVAS is purpose-built for multi-projector displays of 3D real-time game engine content, video, and live capture," Soetens continued. "This platform uses the latest Unreal Engine 4 game engine (UE4), our proprietary CANVAS plug-in to integrate video playback, high resolution images, live-capture, and tracking to provide dynamic and interactive visuals. The level of image processing needed for the Lodha project

would be next to impossible without the NVIDIA Quadro M6000. The M6000 pipeline was both easy to implement and outperforms the best, most expensive AV solutions on today's market."

RESULTS

Combining the speed and precision of the NVIDIA Quadro M6000 GPUs with the media layering and presentation capabilities of CANVAS is yielding a virtual real estate exploration and buying experience like no other.

"CANVAS software is at the leading edge of image warping and blending," said Soetens. "For starters, it runs at ten times the output resolution. This allows us to experiment with sub-pixel alignments, which means that we can move every pixel in an entire image by only one-tenth of a pixel at a time. This extreme level of precision allows us to align the presentation to a degree that is almost imperceptible to the naked eye. It does this by offloading all of the complex projection mapping to the GPUs. It's as easy as telling the server what you want to see and letting the NVIDIA Quadro M6000 GPU go to work."

"The typical real estate buying experience involves visiting a sales model that may or may not include static renderings such as a static simulated view from a given floor," concluded Van den Bulcke. "This traditional experience requires a high level of imagination on the part of the prospective buyer that makes it difficult to truly visualize one's self living in the finished product. Combining the media capabilities of our CANVAS software with the speed and power of the NVIDIA Quadro M6000 GPUs delivers a truly immersive experience that fully simulates living in the finished tower. This gives the prospective buyers the information they need to make a fully informed decision about one of the largest investments they will ever make."

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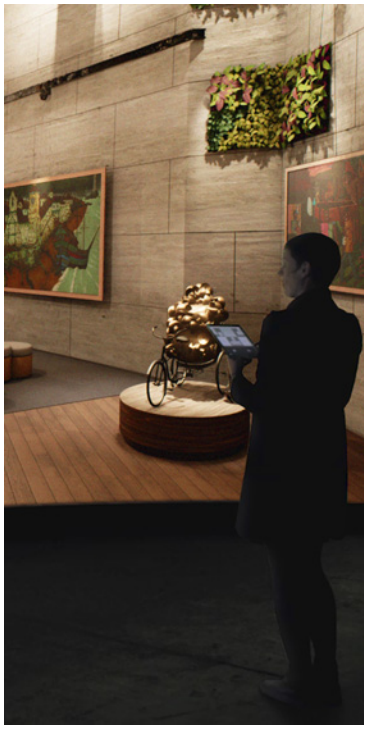
Kora Van den Bulcke
Co-Founder
IMMERSIVE



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