

SUCCESS STORY | STUDIO 4D

# INTERACTIVE VISUALIZATION BRINGS NEW SITES TO LIFE WITH NVIDIA RTX AND AI



Image courtesy of Studio 4D



# Studio 4D uses NVIDIA RTX and DLSS to create an interactive cloud-based visualization of National Landing for lead developer JBG SMITH.



Image courtesy of Studio 4D

## SUMMARY

- > Studio 4D is an architectural visualization firm and member of the NVIDIA Inception program.
- > JBG SMITH wanted a visualization of National Landing to visually understand and gain insights into the full capacity of the project.
- > Studio 4D needed high-performance GPUs to digitally create an interactive walkthrough of National Landing.
- > Using NVIDIA RTX A6000 GPUs and Unreal Engine, Studio 4D was able to create and deliver a 4D walkthrough of the project.

## INTRODUCTION

Studio 4D is an architectural visualization firm with over 10 years of experience. To help their client JBG SMITH, the lead developer of National Landing in Washington, D.C., create a high-quality visualization of their project, Studio 4D needed a powerful solution, one that could keep up with their design needs. With NVIDIA RTX A6000 and DLSS, Studio 4D created an interactive cloud-based 4D walkthrough that enabled JBG SMITH to gain deeper insights into the project and tell the complete story of National Landing.

## CHALLENGE

One of Studio 4D's clients is JBG SMITH, a leading owner and developer of high-quality, mixed-use properties in the Washington, DC area. JBG SMITH is the lead developer of National Landing, a large project currently being established in the United States. Located next to Reagan National Airport and The Pentagon, National Landing covers more than a square mile and has multiple projects that have been in development over a span of 10 years. To better understand and visually explain the full capacity of the National Landing project, JBG SMITH needed a solution that could meet all of their coordination, pre-sales and marketing, investment, as well as neighborhood and city zoning needs. Studio 4D helped JBG SMITH by digitally creating an interactive cloud-based 4D walkthrough of National Landing. The 4D walkthrough provides a "living" 3D environment with live-stream capability over the cloud. This allows developers to view realistic digital 3D models at their own pace, as well as simultaneously stream, modify, and present their models in real time to other stakeholders. With NVIDIA RTX A6000 GPUs and NVIDIA Deep Learning Super Sampling (DLSS), Studio 4D and JBG SMITH visually told the story of their National Landing mega project and its opportunities.

## CUSTOMER PROFILE

STUDIO4D

**Organization:**  
Studio 4D

**Industry:**  
Real Estate

**Founded:**  
2006

**Location:**  
Montevideo,  
Uruguay

**Website:**  
[www.studio4d.com](http://www.studio4d.com)



Image courtesy of Studio 4D

## SOFTWARE

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NVIDIA DLSS

Unreal Engine

Amazon Interactive  
Video Service

## HARDWARE

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NVIDIA RTX A6000

Amazon EC2 G4dn instances

## REASONS FOR NVIDIA

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- > With NVIDIA RTX A6000, Studio 4D achieved real-time ray tracing and rendering, which resulted in faster designs and more cost savings for their clients.
- > NVIDIA's DLSS algorithm helped Studio 4D increase the image quality of their visualizations, enabling users to zoom in on areas of the model and see details in high-fidelity.

## SOLUTION

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With NVIDIA technology, Studio 4D can provide services that allow real estate developers to holistically view their projects in high fidelity, before and during construction.

NVIDIA RTX A6000 professional GPUs delivered real-time ray tracing and rendering, allowing Studio 4D to create photorealistic visualizations of National Landing. NVIDIA DLSS is an AI-powered rendering technology that increases graphics performance using dedicated Tensor Core AI processors on RTX GPUs. Using DLSS, Studio 4D was able to tap into the power of AI to increase the image quality of their designs.

With NVIDIA RTX, DLSS and Unreal Engine software, Studio 4D can quickly render designs that contain different materials, colors, trees, and other cost items — it can all be seen digitally and decided on before being purchased, preventing expensive corrective changes in the future.

Locations and surroundings can also be better understood by changing the time of day, showing how sunlight and shade can affect the buildings in real time.

Clients can easily coordinate their projects with architects, interior designers, landscapers, and general contractors before laying down a single brick. This results in considerable cost and time savings for JBG SMITH by coordinating agreements with vendors, consultants and stakeholders while presenting a holistic view of the entire National Landing development.

This accurate visualization on a macro and micro scale showcases for everyone the numerous benefits of National Landing, including the transportation reduction advantages, easy access to parks and recreation, an extraordinary walking bridge from Reagan Airport to the heart of National Landing, and many more green and healthy city initiatives.



Image courtesy of Studio 4D

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**“NVIDIA’s DLSS algorithm really got the best out of the NVIDIA RTX GPUs, and helped us exponentially increase the image quality of our visualization services.”**

Hilario Canessa,  
CEO at Studio 4D

NVIDIA technology helps Studio 4D create high-quality visualizations that share the vision of projects in advance, providing users with a 4D walkthrough presentation that shows all aspects of the project. Studio 4D uses AWS EC2 G4dn instances with NVIDIA T4 GPUs for their online, real-time experience hosted on Amazon Interactive Video Service. Since Studio 4D’s projects are hosted in the cloud, teams can show entire projects on any device from any location.

This has been especially helpful during the pandemic, when everyone was working remotely. By relying on cloud-based instances running on NVIDIA GPUs, developers have been able to pitch and present projects remotely with high quality to clients and investors.

## RESULTS

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NVIDIA RTX helped Studio 4D achieve real-time ray tracing throughout their design process, and the accelerated workflows with DLSS was a game-changer.

“NVIDIA’s DLSS algorithm really got the best out of the NVIDIA RTX GPUs, and helped us exponentially increase the image quality of our visualization services, especially in an extensive and intensive project the size of National Landing,” said Hilario Canessa, CEO at Studio 4D.

“This could not have been done without the hardware and software breakthroughs NVIDIA made available to us.”

Studio 4D’s GPU-accelerated renders and visualizations gave JBG SMITH the capacity to have holistic control of their urban design. It allowed the developer to see their project as a whole, both the micro and macro scale of National Landing, at the same time.

Now, JBG SMITH can save time in coordination meetings with vendors, consultants, pre-sales and marketing teams, and investment teams because the complete design is available months — or even years — before the actual construction, allowing them to show everything they plan to do in advance.



Image courtesy of Studio 4D

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Aaron Stopak,  
Principal at Studio 4D

It’s also beneficial for neighborhood and city zoning meetings because instead of presenting a few renders that try to explain an entire project, the team can now visually present a 4D walkthrough to the committees and show all the aspects of their project’s impact.

“NVIDIA RTX and DLSS truly stood out in the market,” said Aaron Stopak, principal at Studio 4D. “There was no other GPU and software combination that allowed us to achieve real-time ray tracing. It’s a truly remarkable achievement by NVIDIA.”

NVIDIA RTX and AI allow Studio 4D to enhance their design and production workflows and create stunning, high-quality visualizations for clients.

With this advanced technology integrated into their current pipelines, Studio 4D plans to use NVIDIA Omniverse, an open platform for virtual collaboration and physically accurate simulation, to enhance future rendering workflows and design reviews.

To learn more about NVIDIA RTX Solutions for AEC, visit: [www.nvidia.com/aec](http://www.nvidia.com/aec)

For more information on Studio 4D, visit: [www.studio4d.com](http://www.studio4d.com)

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