iBwave

CASE STUDY

HOW CROWN CASTLE USED IBWAVE REACH TO ACCELERATE THE DESIGN OF A UNIVERSITY CAMPUS NETWORK BY 36%

CROWN CASTLE

Read how Crown Castle leveraged iBwave Reach to understand the impact between the indoor and outdoor network and as a result, finish the design of a University campus network 36% faster.

ABOUT CROWN CASTLE

Fortune 500 company Crown Castle, Shared Communications Infrastructure Provider, owns, operates and leases a nationwide portfolio of communications infrastructure and has a team of approximately 5,000 employees with nearly 100 offices across the U.S. Crown Castle designs and builds solutions that meet customers' unique connectivity needs—from wireless coverage to smart city solutions to custom fiber optic networks.

"We already had a foundation for the project with iBwave Design Enterprise. We wanted to see if we could use iBwave Reach to manage the complexities of an indoor/outdoor environment and complete the new expanded design faster."

- Crown Castle Design Team -

INTRODUCTION

As long-time iBwave customers, Crown Castle were already familiar with iBwave Design after using it to design hundreds of wireless networks over the years for their many customers and sites.

One of those customers and sites was a well-known university. More recently, this university approached Crown Castle to design a neutral host system for 11 buildings that already had iBwave designs, and 9 outdoor small cell sites. The scope of the project includes four locations: Arts and Humanities, Humanities-Law, Sports Arena, and Student Rec Center. With the mix of indoor and outdoor requirements, the university projects presented the perfect opportunity for Crown Castle to test our all-in-one campus network design solution: iBwave Reach + iBwave Design.

THE CHALLENGES

1 Management of the Indoor/Outdoor Modeling & Design

With a campus network design, it's hard to understand the impact of the macro on the indoor network often making reliable wireless connectivity challenging to achieve. Crown Castle needed a way to effectively measure the impact of the in-building on the macro to better manage ingress/egress transition areas, and needed better visibility to interferers and capacity impacts on both the indoor and outdoor networks.

2 Too Many Site Walks (Costly & Time Consuming)

Typically, RF engineers do multiple rounds of site walks for every project to measure macro small cell penetration, consider indoor DAS leakage and ensure the quality of the design post-install. Site walks are time consuming, costly and often cause disruptions in the project timelines due to facility access restrictions and special security requirements for contractors.

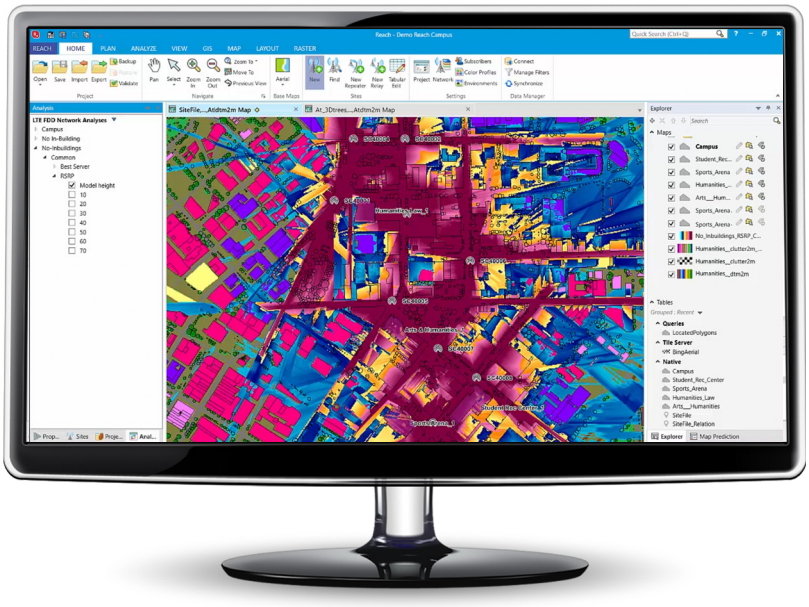
3 High Level of Project Complexity

With a large project that involves 11 buildings, different design teams and tools, as well as third-party contractors, coordination and timing can often be time consuming and complex task.

THE SOLUTION

iBwave Reach

Seamlessly integrated with iBwave Design, iBwave Reach bridges the gap between indoor and outdoor design and accelerates the design of large multi-technology campus wireless networks by minimizing site surveys and maximizing accurate, delivering flawless wireless connectivity for all.



> ***Eliminating the need for additional site walks is a network designer's ideal scenario. Using iBwave Reach for indoor/outdoor networks not only saves time and reduces costs, it's less disruptive to the customer.***

- Crown Castle Design Team -

THE RESULTS

36%
TIME SAVINGS

18
DAYS SAVED

CUSTOMER DISRUPTIONS

Reduced Overall Project Lifecycle by 36%

Using iBwave Reach with iBwave Design allowed Crown Castle to save hours of engineering time, 18 days of vendor data collection, significantly reduce requests for security clearance and reduce overall design time by an impressive 36.2%, compared to the traditional process. By leveraging the power of iBwave Reach Crown Castle's RF engineers were able to design this campus environment seamlessly for both indoor and outdoor network elements with a clear understanding of the prediction impact between each.

THE RESULTS

Improved Indoor/Outdoor Design Management

By using iBwave Reach and iBwave Design, Crown Castle was able to accurately model the outdoor environment and establish clearer understanding of the impact of the macro on the in-building. Specifically, they used the iBwave Reach RSRP Interpolation map, Areas of Dominance Over Macro map and SNIR Tuned on the Macro map to establish accurate awareness of the in-building network design challenges overcoming the macro network. The iBwave Reach Best Server map gave them greater awareness of interferers and capacity impacts on both indoor and outdoor networks. And lastly by bringing the in-building design into the Macro network gave them better management of the ingress/egress transition areas/handoff.

Simplified Project Complexity

By using iBwave Reach to streamline the process of designing both the indoor and outdoor networks, the complexity of the project was significantly reduced. No additional tools were required, a single file format was utilized and the integration to understand the impact between the indoor and outdoor network was seamless.

> ***Reducing the design phase of a campus project by 36% allows us to deliver the project even faster. The time savings with iBwave Reach on this project was more than we hoped for. Reducing the complexity of a multi-building, multi-location indoor/outdoor network design isn't easy to accomplish, but we did it with iBwave Reach.***
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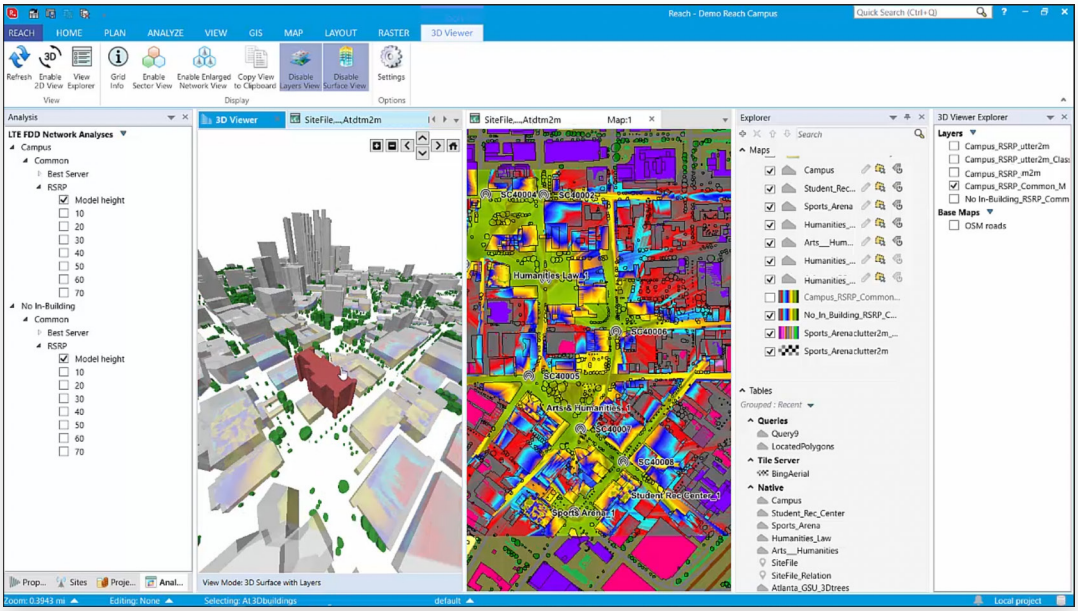
> - Crown Castle Design Team -



iBwave Reach's side by side windows showing the 3D building view on the left side including the in-building network data imported from iBwave Design, and on the right side showing the final result of macro penetration inside buildings and the various in-building networks' impact on the macro signal.

iBwave Solutions Inc.
400, Sainte-Croix Ave., Suite 2100
Montreal, Qc H4N 3L4 CANADA

T +1 514 397 0606
E info@ibwave.com
www.ibwave.com