

# Nanjing World Trade Center

MIX StudioWorks, Inc.

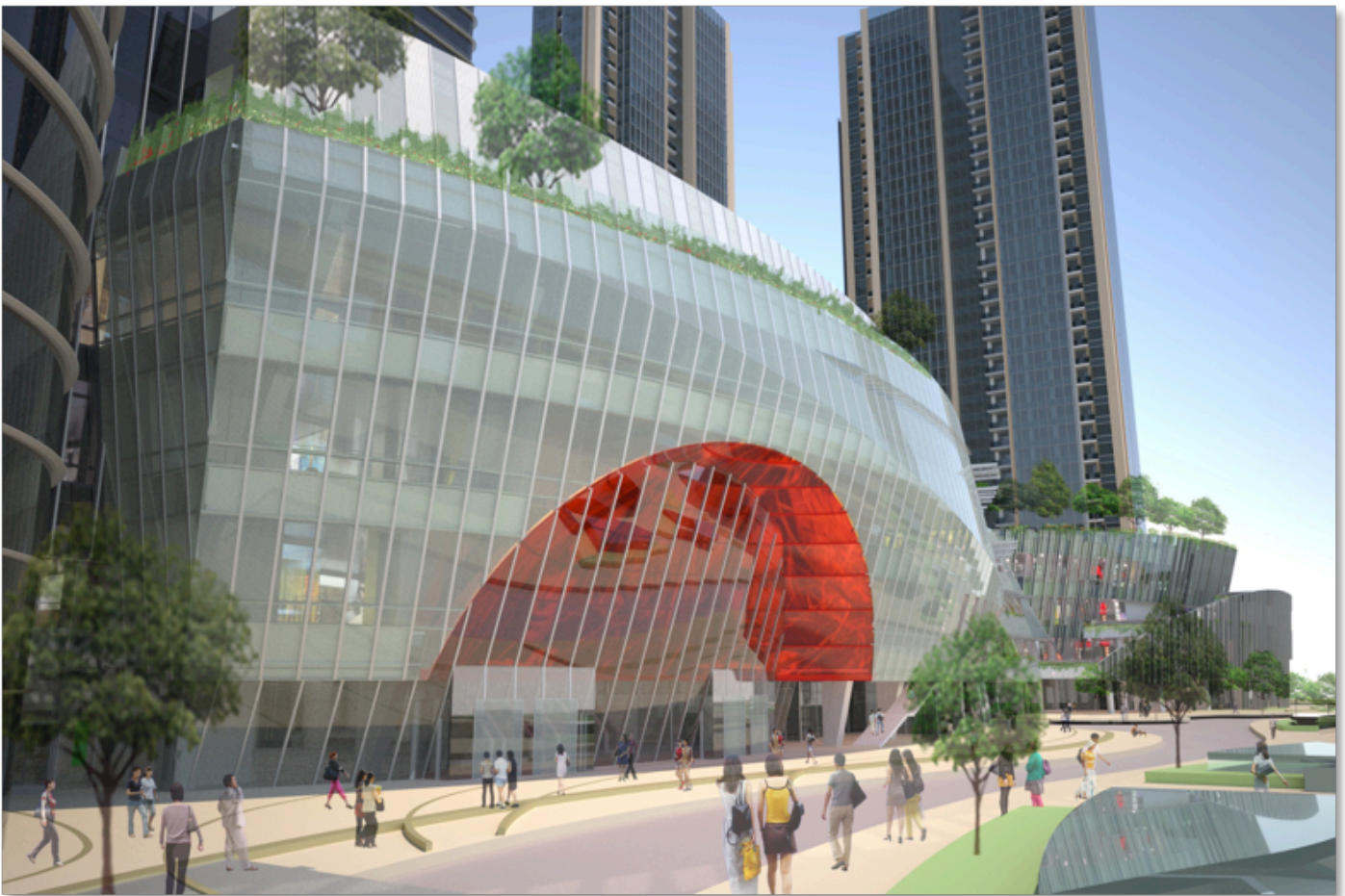


Figure 1: Nanjing World Trade Center Project Render

MIX is a global design firm founded in Los Angeles focusing on the unique architectural planning and design of large mixed-use destinations world-wide. Every year, projects designed by its principals and design team are visited by millions of people. MIX endeavors to express the unseen forces of the urban landscape, the innate qualities of the site, and the needs of the client. MIX aspires to advance the urban experience and to maximize the performance of the place. Its own design process, evolved over decades of experience, continues to evolve to deliver innovative, creative, vibrant and lasting places for people.

For one of many recent projects in China, Nanjing World Trade Center (NWTC), MIX delivered the project from pre concept through a completed design development phase in just a few months. This was challenging to do with ArchiCAD, and it would have been nearly impossible to deliver without it.

Nanjing, a past capital city of six Chinese dynasties and dating back to almost 500 BC, is today a thriving metropolis of over six million people. NWTC's site is set amid Nanjing's Hexi New City, the emerging district for large scale, mixed-use developments. The highly competitive urban retail environment demanded expertise and experience in design, as well as a nuanced understanding of the Chinese and local Nanjing retail markets. However, the compressed schedule and diverse consultants challenge our ability to maintain high standards of design and technical output. With this in mind, MIX began designing the 46,000m<sup>2</sup> (~ 500,000 sf) NWTC retail podium with ArchiCAD while the project's complex of iconic high-rises was already in design development. Collaborating with international firms, such as Gensler, SWA, SPD, and Citterio amongst others; coordination meetings took place in New York, Hong Kong, Shanghai, Nanjing and via the internet.

## Truncated Concept and Detail Development Timelines

Immediately confronted with an overabundance of material that could have been a nightmare to navigate and absorb, a small team quickly transcribed the information from a 2D AutoCAD base into the 3D Virtual Building model representing the essential context from which MIX's design would grow. Once this was established, MIX could focus on concept design, generating and studying three-dimensional planning and design ideas. Overall, this streamlined the process, and allowed the team to arrive quickly at key big design concepts. Throughout the project phases, all design modifications were more easily updated by altering the live, 3D model and letting ArchiCAD do the work of generating the baseline 2D drawings. This was a huge time saver! Before, comprehensive elevations or sectional elevations could take up to 40 man hours. But with ArchiCAD, once the 3D was developed, it was as simple as placing a section marker and opening the automatically generated drawing. In a matter of seconds, intricate drawings with several options for display were done. Not to be understated, the amount of time devoted to 3D work increased greatly; however, the payoff and resolution along the way easily justified the switch in effort. Inconsistencies became immediately apparent, design improvements were done in situ, and unrealized opportunities were discovered and exploited. "Push the button" became an instant catch phrase.

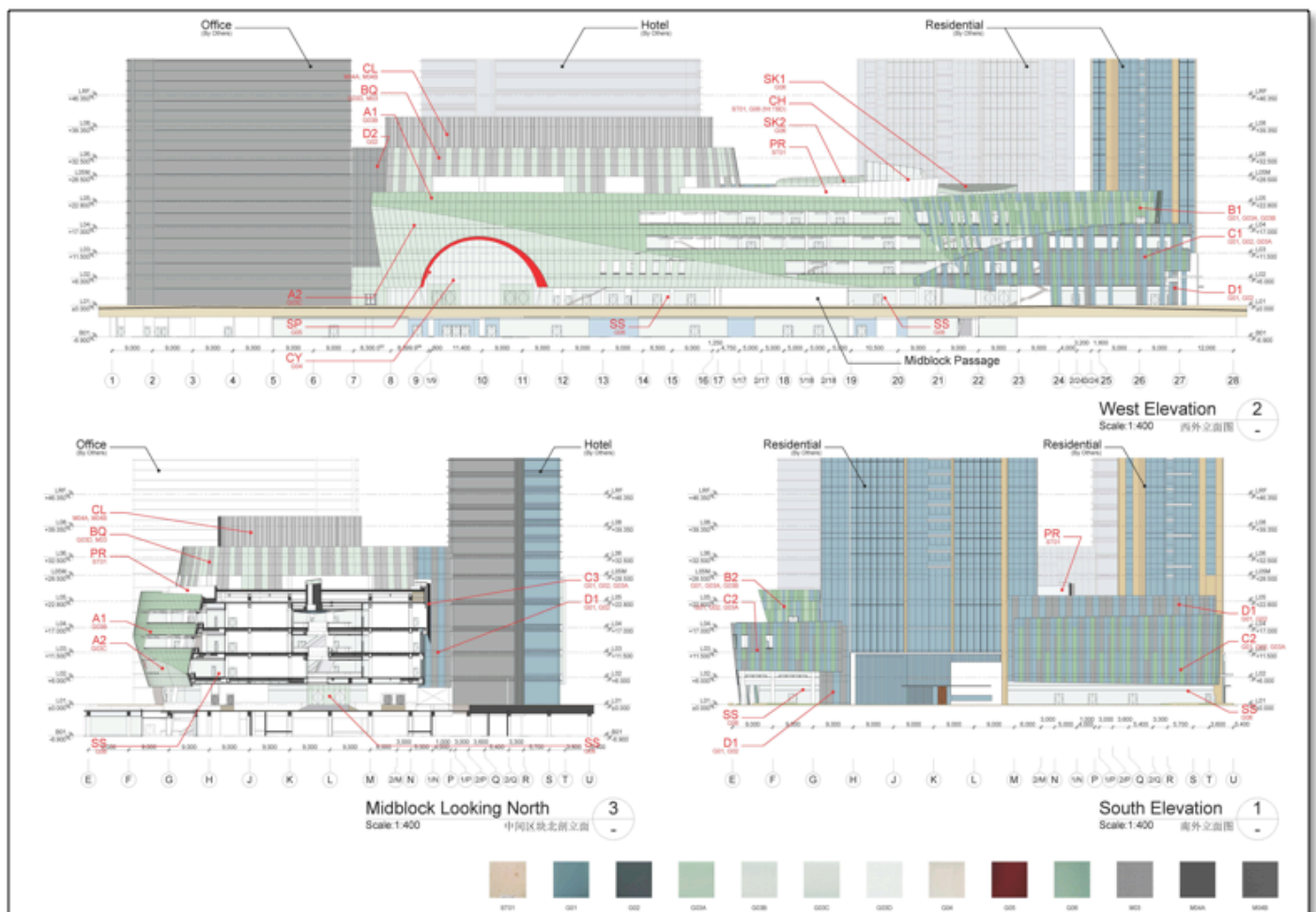


Figure 2: Automatically Generated Live Elevations and Sectional Elevations

It was no surprise that some of the largest gains in efficiency of using ArchiCAD occurred during the design development phase. The robust adaptability and strength of ArchiCAD's workflow from View to Layout & Publisher allowed documentation efforts to progress apace with building the 3D model. The initial planning set could be organized early in the process, evolving in time to become the final set. Drawings were automatically updated along with their markers and internal references, and the entire coordinated set could be output at any time with ease in a number of formats. Checking external reference drawings were all coordinated more easily against our set with lots of use of the Trace functions. Efficiency potentials abounded.

## Communication and Visualization

With the inner workings of project workflow adequately under control more time became available for designing, composing presentations, and compiling quality materials including renderings of the detailed model. MIX's years of experience and established methods of creating presentations precluded the need to fundamentally change project display methods. However, many supplemental methods unique to ArchiCAD added highly beneficial techniques for clearly conveying different aspects of the design.

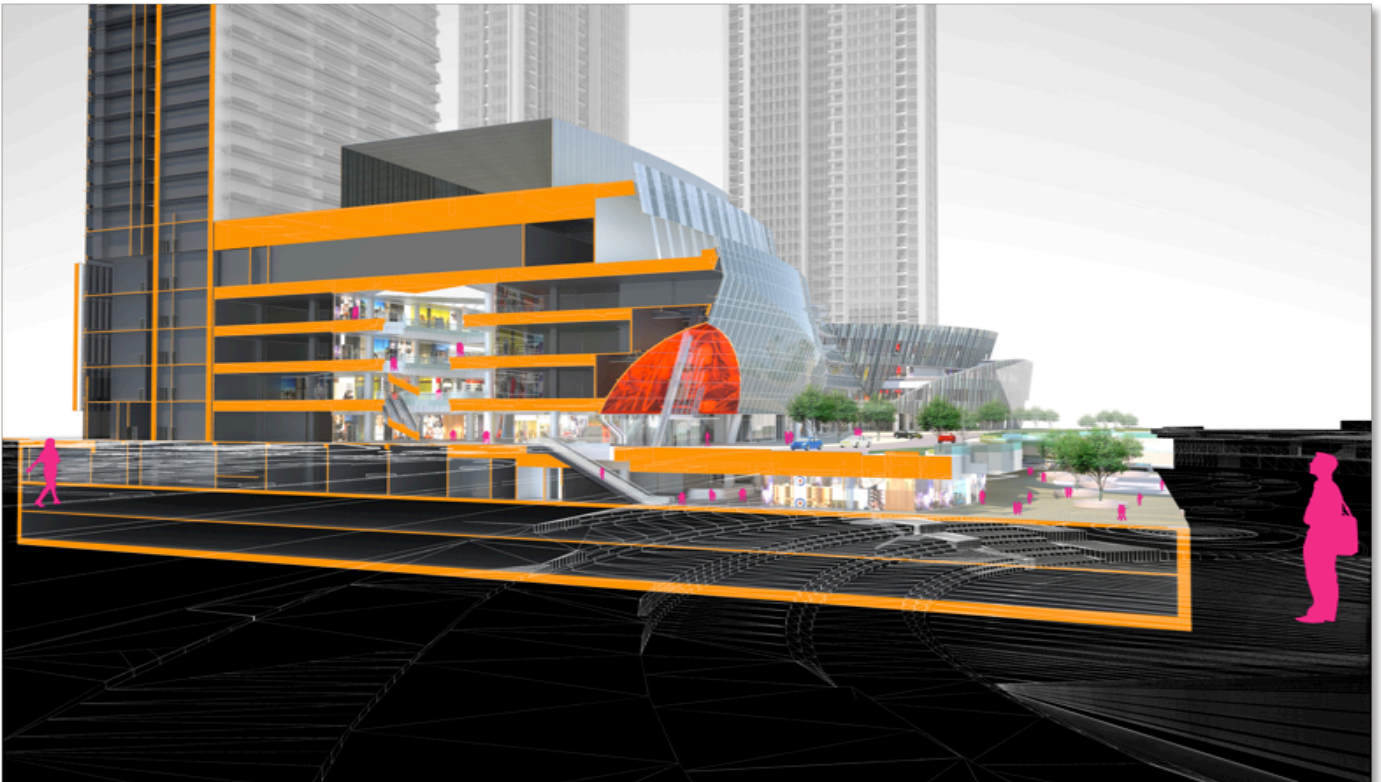
First is ArchiCAD's interoperability with other programs. Though the consultants have not become proficient in BIM, digital communication of both importing and exporting models in any format was and will continue to be a necessity. This was particularly important for the façade consultant, based in Manila and the Chinese Local Design Institute in Nanjing. Daily questions were easily fielded through exporting various 2D and 3D aspects of the single ArchiCAD model, in this case 3D .dwg and .3ds formats. Another consultant used SketchUp, which was also importable as a basis for development. Altogether, being able to translate amongst the various software platforms will continue to be fundamental to achieving more efficient communication between disparate parties.



Figure 3: Interior Renderings taken directly from the live ArchiCAD model with some additional post-production work

Second, the live BIM model has become a cornerstone of MIX's design foundation, taken to every coordination meeting. Countless times the current NWTC model was referenced real time to solve design queries, i.e., checking live plans or creating live sections/elevations. With a clear BIM file organization in hand, any one of MIX's team could navigate the project; isolating issues even if they were not part of the core team. Additionally, the Renovation Filters help elucidate concerns with the existing conditions.

Third, ArchiCAD's ability to isolate sections of the model was extensively used throughout the project design and coordination workshops to explain more complex concepts and three dimensional geometry. It was truly a-picture-is-worth-a-thousand-words communication. Where clients or consultants had questions, we could cut new isolated portions of the model that specifically addressed their concerns. This led to a deeper understanding and level of comfort for the client and entire team throughout the process.



**Figure 4: Time saved was used to generate stronger visuals; this is a multi-tiered compositional illustration**

MIX's strategic decision to invest in BIM with ArchiCAD as our primary tool in our design process has allowed MIX to provide our clients greater efficiencies in design process and production while allowing more dedicated development time to our designs. The success of our NWTC project reinforces and celebrates the right decision we made back in 2009.

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## About GRAPHISOFT

GRAPHISOFT® ignited the BIM revolution with ArchiCAD®, the industry first BIM software for architects. GRAPHISOFT continues to lead the industry with innovative solutions such as the revolutionary GRAPHISOFT BIM Server™, the world's first real-time BIM collaboration environment, and the GRAPHISOFT EcoDesigner™, the world's first fully integrated building energy modeling application. GRAPHISOFT's innovative solutions have fundamentally changed the way architects around the world design and collaborate. GRAPHISOFT® has been part of the Nemetschek Group, since its acquisition in 2007.