

# High Profile

**Once it's finished in 2028, the Jeddah Tower by Adrian Smith + Gordon Gill Architecture, will surpass the Burj Khalifa as world's tallest building. Meet the man who designed it.**

Words: Dawn Gay / Photography: AS+GA

**I**t's 8am in the Windy City and the eminent architect Gordon Gill is seated at his desk speaking to us before his Chicago office springs to life. His firm Adrian Smith + Gordon Gill Architecture (AS+GG), as the name reflects, resulted of a convergence of two great minds. In the world of 'supertall' skyscrapers, the partners need no introduction. Adrian Smith designed the Burj Khalifa, while Gordon Gill's résumé lists Dubai's domed Al Wasl Plaza, NYC's Central Park Tower and the 71-storey Pearl River Tower in Guangzhou, which in his own words is "one of the most efficient supertalls to date".

Born to British and Spanish parents in Jamaica, Gill's family moved to Canada when he was aged 11. After gaining his architecture degree from Toronto Metropolitan University (formerly Ryerson), he moved to the USA to take two masters at the University of Texas and Harvard. He circled back to the University of Technology in Jamaica for his doctorate. Then came Chicago. "I've been here ever since," Gill explains. "Adrian and I had been working together for 13 years before we went for the partnership. We were at Skidmore Owings and Merrill (SOM) at the time. Adrian was a consulting partner, I was an associate partner and we had collaborated on a number of projects. We looked at each other and said: what if we did our own thing? That's how we formed the firm in 2006 and that's been the journey ever since."

It was the Pearl River Tower that helped Gordon Gill crystallize the language of performance and environmental contextualism that is so intrinsic to their megastructure design. "When we formed the firm, we really focused on high-performance buildings. From our work at SOM, we had a pedigree in large-scale projects and began to delve into energy and the efficiencies of buildings. These principles have driven the work ever since regardless of the typology, whether it's a supertall, or a simple local neighbourhood theatre or park."

The Jeddah Tower in Saudi Arabia's sprawling Jeddah Economic City on the Red Sea came to the drawing board in 2012 and is set to soar to 1km in height, surpassing the Burj Khalifa by 173 metres. This glass-clad, neo-futuristic structure will shoot from the ground like the folded fronds of a palm, tapering towards a cloud-piercing apex. An observation deck on the 157<sup>th</sup> floor looks over the entire Kingdom. Construction costs are expected to total around 1.2 billion USD.

AS+GG knew what was achievable and were ready to rethink form and function to create a vertical city reliant on tremendous infrastructure and systems. Gill likens this process to conducting an

orchestral symphony. "This notion of 'tuning the building' became common practice for our firm. We were now going over a thousand metres, so the geometry of our building needed to be very simple. And if you look at the building, it's a tripod structure similar in essence to Burj Khalifa," says Gill, showing me a shiny 3D-printed model of the Jeddah Tower. "The tapered paper airplane type of structure became extremely efficient. We thought it was striking as a form. It's an ongoing pursuit of performance characteristics."

Gordon Gill explains that there are a host of attributes that make these buildings feasible. "Some things are under your control and some things are not. It can be anything from the science and technology behind infrastructure: having a base wide enough to get to a certain height. There's the very basic physics around why you could get to a certain height and what it means to exceed that. But then there's the economics behind it. Economics can play a huge role in the success and failure of these ideas. And then beyond that, you have the most important aspect of it: the social and cultural expectation of living in a structure that's a kilometre in height."

In Saudi Arabia where temperatures can soar over 50 degrees Celsius, there are forces of nature to contend with. "Reflectivity is an issue - the solar concentration of light can be quite severe," explains Gill rotating the broad canopy at the base of the model that protects the surface level to make it comfortable for occupants and guests.

These buildings can shed vortices and experience downward thrusts of wind, not dissimilar on a vertical scale to the gusty streets of Chicago. "When I first moved here, I watched my wife try to make it across a little plaza to the IBM building and she could barely do it because the wind around the building was so fierce. Sometimes they put ropes outside to you get into the building. So, we're very aware of those kinds of environmental forces here," he adds.

"Supertalls are tremendously sensitive to wind behaviour characteristics. On the Pearl River Tower, we vented the building through the body of the structure and soon realised that not only were we making significant savings on infrastructure or physical structure; the building was performing even better."

The solution was to create a much wider base for the Jeddah Tower to dissipate downward thrusts of wind. "That actually increases the space of the lobby and in doing so, we create a nicer arrival sequence and also protect the base." ➤





**Above:** Originally envisioned by Kingdom Holding as a mile-high (1.6 km) tower, it turned out the geology of the site was not suitable for that height and then, even though construction began in 2013, work came to a stop in 2018 amid economic and political challenges that were later exacerbated by the Covid-19 pandemic. In January 2025 construction restarted with a new completion date of 2028. **Opposite top:** The 30-metre-wide helipad has been re-engineered to become an outdoor observation deck. **Opposite bottom:** 60-year-old Gordon Gill's work includes the design of the world's first net zero-energy skyscraper, the Pearl River Tower; the world's first large-scale positive energy building, Masdar Headquarters; and now the world's tallest tower, Jeddah Tower.

Gill goes on to explain how they plan to conserve water at the Jeddah Tower, collecting it from condensation. “Believe it or not that’s probably a couple of Olympic-sized swimming pools-worth on an annual basis. It’s a huge amount of water. It’s not drinkable water, but we reuse it within the building for cooling, for irrigation, and for other kinds of systems.”

At one kilometre in height there’s also a difference in the oxygen levels between the base and the top to consider. “You’re living in a city in the sky and there are attributes that architects and designers must understand about that, from a physical standpoint, but also from a psychological one. In most of our projects, we talk about the ‘psychology of comfort’. So the human factor is critical in the success of our projects.”

Thirteen years in the making and not without bumps in the road, the building is scheduled for completion in 2028 in time for Riyadh’s 2030 Expo, when Gill says “the whole world will be coming to their doorstep”. The Jeddah Tower, like The Line – the planned 200-metre-wide city in Neom – reflects the soaring global ambitions of the region.

“The Middle East has seen what happened in Dubai,” says Gill. “Dubai served as a catalyst. That vision became of interest both from a literal and critical standpoint in places like Saudi Arabia, Abu Dhabi and Oman. Even when the Jeddah Tower was designed 13 years ago, the ambition was to become attractive to a global audience, to increase the intellectual capital of their population. To become a player on the world stage in terms of ecological consciousness, economics and culture, pushing the boundaries of environmental stewardship, technology and intellectual capital.

“When you think about the migration to Mecca, this building serves as a significant gateway. The relevance of this project is still incredibly important to the symbolism and definition of what Saudi Arabia will become in the future. While rapid in terms of their expectations, their long-term vision is one of great patience,” Gill continues.

Gordon Gill’s feet remain firmly on the ground when asked about the impact he has made in defining cityscapes – in changing the world’s skylines. “Projects like the Jeddah Tower are a learning experience: the ability to transfer knowledge to a local culture or inject innovation into a local process. This is one of the most rewarding things that we can do as architects and planners. I wish that I was invisible and could walk these cities every day from an observation standpoint: to understand how people are living in these places. That would be probably one of the most enjoyable things I could do with my time. It’s not really about the building; it’s about the people and the most important thing that we can do is provide experiences and opportunities for people to grow, for their children to develop and learn.”

If there is one thing to learn from this project; Gill says it is a lesson of time. “As a species we are transforming our planet, and we must do it in a responsible way. But we also must understand the spectacular moments in time are not going to change. And they’ve transformed, right? It used to be the Empire State Building, the cathedrals of London, the pyramids. As a species we have this penchant for the pursuit of magnificent things. And if we build them responsibly, that’s the key. Our work is not just from a physical standpoint, but from a sustainable and environmental standpoint.”

Will a building ever break this one kilometre record? “Even within Saudi right now, there are conversations about taking the next step. Of course, there’ll be others,” Gill concludes. Progress never stops.🌐

