



CTBUH Research Paper

ctbuh.org/papers

Title: **Birds, Planes and Bio-Blitzes**

Author: Jeanne Gang, Founding Principal, Studio Gang Architects

Subject: Architectural/Design

Publication Date: 2017

Original Publication: CTBUH Journal 2017 Issue III

Paper Type:

1. Book chapter/Part chapter
2. **Journal paper**
3. Conference proceeding
4. Unpublished conference paper
5. Magazine article
6. Unpublished

© Council on Tall Buildings and Urban Habitat / Jeanne Gang

Birds, Planes and Bio-Blitzes



Jeanne Gang

Interviewee

Jeanne Gang, Founding Principal
Studio Gang Architects
1520 W. Division Street
Chicago, IL 60642
United States
t: +1 773 384 1212
e: pajeanne@studiogang.com
www.studiogang.com

Jeanne Gang

Architect and MacArthur Fellow Jeanne Gang is the founding principal of Studio Gang, an architecture and urban design practice with offices in Chicago and New York. Jeanne is recognized internationally for a design process that foregrounds the relationships between individuals, communities, and environments. Drawing insight from ecological systems, her analytical and creative approach has produced some of today's most innovative architecture such as the Vista Tower, currently under construction, and Aqua Tower in downtown Chicago. Jeanne is engaged in major projects throughout the Americas and Europe, including high-rise towers in New York, San Francisco, Toronto, and Amsterdam.

Having designed the 262-meter Aqua in Chicago, which completed in 2009, Jeanne Gang, principal and founder of Studio Gang Architects, received considerable attention for what was then the tallest building ever designed by a woman-led firm. The significance of her work extends far beyond this, as the head of one of the most innovative and research-focused practices working in the tall building industry today. Daniel Safarik, CTBUH Editor, spoke with Gang for her long-overdue *Talking Tall* interview.

What does it mean to you to be credited with what was at the time “the tallest building designed by a woman-led architecture firm”? Is that a meaningful distinction?

It's exciting to be designing tall buildings. It is a very complex process, and something that I think that would benefit from more women architects. Frankly, there is a lot to be invented and discovered in this building type. I think I brought some distinctive observations to the type – maybe not because I am a “woman architect,” but because I am the architect I am.

Unfortunately, I would say the building type suffers because there is not enough diversity of all kinds of people who could be working on it, like young architects, small firms, racially diverse ownership of firms, and so on. It would be so much better if we had more diverse perspectives brought to it. So, the loss is really on the side of the industry.

There are small, local firms, gigantic multinational firms, and a range in between, each of which approaches the tall building differently. It's not so much about the characteristics of every person involved. Once you start looking at the typology, it is really shocking how much similarity there is in the make-up of the companies doing it, and it's reflected in the work.

The Aqua got a lot of attention when it was completed. How do you feel about it now?

I really like being in the same town as that building, because it was our first. Also, I tend to go back to it to see how it is being used and how the communities in the building have formed. I've always thought of that building as almost like a vertical piece of infrastructure that people can make their own

on the inside. It's not the sort of building where every interior detail is dictated by the architect. It is a flexible structure that can be a hotel, condominiums, and apartments.

What I discovered is that it really is a very social building. The developer, Magellan Development Group, which also manages the building, tells me that there are very strong social connections in that building. There are activity groups, they've started their own gardens on the rooftop, and people talk to each other a lot more than they do in some of the other buildings (see Figure 1). It really plays out some of the ideas that we had in the beginning. To be able see that in reality is really important.

How would you say the ideas of communal space, balconies, shading, and modulated views in residential high-rise projects that you executed with Aqua have been modified for more recent projects?

One of the things I really liked about the balconies of Aqua was the social component, the fact that you could see the neighbors in an oblique way. That makes the balconies more like front stoops on a traditional house. I thought there was a lot of potential in that, but the downside was that, in order to get the cantilevers, we had to have a non-thermally-broken slab from inside to outside. We tried to have a thermally-broken slab, but could not achieve the cantilevers within budget.

We wanted to answer the question, “do thermal breaks in balconies improve energy performance?” There has been work done on it in Canada, but it was in a different climate (Hardock & Roppel 2013). The main reason to break the slab is to prevent condensation on



Figure 1. Aqua Tower, Chicago.
© Steve Hall / Hedrich Blessing

windows, which is something that we have never seen on Aqua.

At City Hyde Park, we designed for two “personalities”: people who like to have a view of the city, who live on the north side, and are perhaps a little more introverted; and people who live on the south side, who we thought of as extroverts. We put the balconies on the south side for these tenants, but also to help with solar shading. With our structural engineer, we devised something innovative – we placed the balconies on “stems,” so the gravity loads are brought directly down to the ground (see Figure 2). That made it possible to have a thermal break between the balcony and the building. We’re monitoring and testing those balconies so that we can make more data available for others who are considering doing balconies. It’s kind of like we embedded the experiment into the building.

Also, from an architectural standpoint, it is great to be on those balconies because they are so interesting and spatially complex, and each is different. Some are very tall and cathedral-like, as you look up to see the next balcony from below. It almost looks like an Escher drawing from some angles.

What did your renovation and residential conversion of the Shoreland, a 1920s hotel, also on Chicago’s South Side, teach you about communal space, room sizes, views, and some of the other characteristics that you pursue in your contemporary high-rise work?

It is so meaningful to have some historic buildings around; it really gives flavor and a

sense of continuity to the city. And, of course it saves a lot of energy – the most sustainable thing you can do is reuse a building that is already there.

We learned a lot about how [1920s multi-unit residential] buildings are made. There is no above-ground parking. We used some interesting technology and applied a lot of skill to figure out how to get the parking below the building, given the column spacing and the site constraints. Inside, we have these incredible large spaces. We tested different types of programs we could bring to those spaces, working directly with a historic preservation consultant. We figured out ways to make it more sustainable, through insulation, through landscaping, and through strategies such as allowing the water to soak into the ground through pervious paving.

Basically, the more problems we work on and solve, the more we create solutions that can be applied in different scenarios. I’ve never wanted to specialize in one building type, and it really pays off when you do something new, because you encounter totally different kinds of spatial, construction, and technology issues. The knowledge you gain then becomes like arrows in your quiver that you can pull out on later projects.

At Shoreland, which is a big building, the corridors don’t feel long, because they bend. You don’t get the sense you are in an endless corridor. I applied that to the wings of the University of Chicago North Campus Residence Hall and Dining Commons, which are like long fingers. Each one has a slight curvature, which makes it feel more compact.



Figure 2. City Hyde Park, Chicago.

Your first supertall project will be the Vista here in Chicago. It’s going to be one of the tallest in the city. How have you resolved the issues of placing such a large structure in the city, and preserving a human scale, in an area that is mainly multi-level roadways and did not have much human scale to begin with?

The innovation on that building is really about how it creates a connection between two public spaces, the Riverwalk and the park at Lakeshore East. The building is like these three stems. The core is in the outer two stems, and the inner stem lifts up – it has a lot less structure in it (see Figure 3). This makes it possible for the public to cross directly below the building. How many tall buildings do you know where you can walk from one side to the other without going inside the building? It is connected both on the ground level and along Upper Wacker Drive, a built-up roadway system, where there is a public connection between the hotel and residential portions of the tower, which leads from an overlook on the river to the Lakeshore East neighborhood.



Figure 3. Vista Tower, Chicago.

“Once you start looking at the tall building typology, it is really shocking how much similarity there is in the make-up of the companies doing it, and it’s reflected in the work.”

You're working with Chinese development partners, Wanda Group, on Vista, in addition to your previous client, Magellan. How has that been different from working with US-based developers?

One thing I really liked was that Wanda had these three main points that they wanted to see realized in the building. They said that some things could change, but three core principles had to be upheld. One was that it should look like the rendering, which is great, because as an architect, you want the project to stay true to the vision. Wanda was design-forward in that sense, and I appreciated that, because oftentimes there is pressure to change as you develop the building. The second provision was that it had to include a Wanda hotel, and the third was that it had to be the third-tallest in Chicago. Those are clear criteria that you can meet.

On several of your high-rises, you've made a point of designing bird-friendly façades of something other than a sheet of glass. How do you think skyscrapers can become more environmentally friendly, in the sense of their physicality, not just energy efficiency?

One thing I discovered early on, through working collaboratively with ornithologists, is that there are a lot of bird strikes on buildings with extensive glazing, especially those near migratory pathways along waterways. So, buildings in cities like Chicago, Toronto, and those along the coastline do have an impact on bird migration patterns. I want to further that body of research and put out solutions that are achievable.

For example, a lot of designers and clients like to put bright lighting on the tops of buildings, which is fine, but if it is illuminated during migration season, it can have a very disorienting effect on birds. That came to light – no pun intended – through the twin spotlight beams meant to symbolize the destroyed twin towers of the World Trade Center. Thousands of birds died circling those beams. They fell out of the sky because they could not see the stars.

I don't think anyone would have wished that, so there is a lot of research that needs to be done to make our buildings more compatible



Figure 4. Folsom Bay Tower, San Francisco.

with their environments, and not just for people. I'm interested in working with ecologists and people who understand other forms of life in cities.

The idea that tall buildings are themselves urban habitat, are infrastructure, is gaining currency, but it still seems underexplored.

The footprint of cities is really gigantic, and, as we further urbanize the planet, plant and animal life is interrupted as cities grow. When we think about tall buildings, we need to study how we impact these ecologies and how we can create spaces for the movement of animals, and allow for patches of natural habitat in cities.

Studio Gang has a biodiverse roof on our building in Chicago with more than 48 native species of plants. We call it a "sky island;" it's not just sedum, it can be used by birds, bees, and other insects. We have bee boxes on our roof as well. The first year it was installed, we did a "bio blitz," where we took samples of how many species of insects were present on the site to establish a baseline. Now we are doing this every year to see how this mini-ecosystem develops.

How do projects under design, like the Solar Carve Tower on New York's High Line and the One Hundred in St. Louis, with their full-height glass façades, protect birds, reduce glare, and otherwise mitigate the negative side-effects of glassy high-rises?

Not all our buildings are as bird-visible as I would like them to be. Oftentimes, when value engineering happens, features you had planned get eliminated. Some of the buildings use "visual presence," without flat planes of glass, so that they do not blend into the sky. The Folsom Bay Tower in San Francisco (see

Figure 4), Aqua, the One Hundred, and Solstice on the Park use that strategy. They are not mirrored glass monoliths; they have texture and lots of different planes that make them pleasing to the human eye and visible to the bird's eye.

The struggle with the Solar Carve is in trying to reduce the reflectivity of the glass. The environment on the [Hudson River] there has a high potential for glare; so that is always difficult, but we also want to make it feel like a "light" building at the same time.

We have been working to heighten the contrast between the 3D, gemlike glass on the carved areas, which will surely be bird-visible, and the flat-plane areas, to resolve the complexity of getting low glare, color, and light transmission to work simultaneously. There is also insulated spandrel glass, so it is a little more solid than you might think. It is a fascinating design challenge. In the end, it has a high level of solidity, but not such that you would perceive it when you walk into a tenant space.

If you had advice for someone who is starting architecture school today and wanted to emulate your career, what would you say?

I think it is really about keeping a positive outlook and following your instincts and passions. It is a kind of a cliché, but it is true. If you don't love what you are doing, there is just no way you can do all the work it takes to get there. I would say, "design your own practice to be what you want it to be." It does not have to follow any existing model that's out there. That's what really excites me about the young generation of students I teach today. They're really open about finding new models of practice. I think the world is ready for that, and it is very encouraging. ■

Unless otherwise noted, all image credits in this interview are to Studio Gang.

References

HARDOCK, D. & ROPPEL, P. 2013. "Thermal Breaks and Energy Performance in High-Rise Concrete Balconies." *CTBUH Journal* 2013 Issue IV: 32–37.