

# Reconnecting with the River: A New Look at the Chicago Waterways with Jeanne Gang

Text by Josephine Tan  
Images as credited

**K**ayaking and boating in the Chicago River might sound like a fun recreational activity to take up on the weekend—if it were not for the fact that the water is teeming with fecal material and bacteria.

The Chicago River's long history of being a dumping ground for sewage and industrial waste has given it a nasty reputation as a filthy, bacteria-teeming waterway. In 2011, conservation groups declared it one of the most polluted waterways in the United States.<sup>1</sup> Locals have long shied away from the river, however in recent years, the waterway has seen more visitors and wildlife as a number of initiatives have improved the waterway's health.

Adding to the growing interest in reclaiming the waterways is Jeanne Gang, the internationally renowned architect behind a number of iconic Chicago buildings like the shimmering Aqua Tower. She believes that the Chicago River could be transformed—and in turn transform the city—by placing a barrier between the Michigan Lake and the river, thereby reversing its flow.

To investigate how this could revitalise the riverfront and its surrounding neighbourhoods, Gang undertook a studio module with students from the Harvard University Graduate School of Design in the spring of 2011. Their imaginative explorations and solutions are detailed in her new book, *Reverse Effect: Renewing Chicago's Waterways*, produced in collaboration with the Natural Resources Defense Council.

Recognised for her bold designs that have an ecologically friendly and sustainable bent, Jeanne Gang's works are inspired by, and centred on nature, often finding ways to marry the urban with the wild. As the closing note speaker at the Business of Design Week 2015, an annual event that brings together outstanding designers and business figures to share their ideas on creativity and design management, the founder of Studio Gang Architects spoke on her vision for the Chicago waterways and how it can improve the quality of life for the city's residents. *CITYGREEN* speaks with Jeanne Gang to find out more, and learn about her ecological approach towards design.

## Why did you embark on *Reverse Effect*?

Since Chicago's industrialisation, the Chicago River has largely been treated as a sewer. I became deeply interested in working on *Reverse Effect* in part because of my deep commitment to our environment and in part because of a lack of progress in reclaiming the river, both ecologically and culturally. The Chicago River is a highly manipulated, continually reinvented waterway—in other words, it is designed. As architects and designers, we wanted to think about what a renewed waterway would mean in the larger context of the city. We envision an expanded role for architects, using design as a way to advocate for the future we want to live in.

## Can you elaborate on the plan outlined in *Reverse Effect* and what it would do to improve Chicagoans' built environment?

Like many of our environmental problems we face today, this is a complex problem that requires a comprehensive design approach, involving considerations from the fields of engineering, ecology, and public policy. At the same time, it has a profound impact on the quality of life for residents.

The Chicago River's challenges originate with the city's outdated, inefficient infrastructure system. Originally, the river flowed into Lake Michigan, but because the river was used to dispose of waste, it threatened to contaminate city drinking water from the lake. To solve this, the flow was reversed to flow out of the lake to the river, flushing waste downstream.





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1. Jeanne Gang, the founder of Studio Gang Architects, is known for her ecological approach to designing buildings and projects (Photo: Jenny Hueston).  
 2. *Reverse Effects: Renewing Chicago's Waterways* imaginatively explores how placing a barrier in the river could transform the surrounding neighbourhoods. (Image: Studio Gang Architects).

Unfortunately, this contributed to dead zones downstream and opened the city's waterways to invasive species. While solving infrastructural problems in their own time, these feats of engineering have led to mounting problems for the city today. Each day, Chicago pulls 2.2 billion gallons of water from Lake Michigan and treats it for use as a residential and industrial water supply. The used water is combined with sewage and stormwater, which is then flushed downstream.

The *Reverse Effect* plan would essentially clean and improve the quality of the river water enough that it could be released back into lake and would not need to be flushed downstream. This means it would “un-reverse” the river and send recycled water back into the lake, protecting the quality and longevity of our region's most valuable resource.

But to arrive at this end goal, we have to start by changing the way people think about and care for the river and all of our water resources. We believe that the only way to do this is to give people access to the river and to design ways that they can interact with it, so they can ultimately gain a new love and respect for it.

#### **Why is it important for Chicagoans to renew the waterways and reconnect with the river?**

When we began the project, people were widely cautioned to stay away from the river. They were definitely not encouraged to engage with it in any way. But if Chicagoans can reclaim this valuable resource, it will benefit their health and well-being. Not only that, it can stimulate the city's economy, create jobs and maintain people's livelihoods through new, ecologically sensitive industries.

Despite these benefits, there are forces invested in maintaining the status quo. It can be very difficult for an idea like this to gain traction. But a recent initiative by Chicago Mayor Rahm Emanuel has renewed investment in the river. He began by commissioning four boathouses on the river's north and south branches, where people of all ages and abilities can learn to row and join competitive teams. Studio Gang Architects designed two of the boathouses.



It's a radical proposal, but one that could ultimately bring about a whole new economy to an area that needs reinvention. Rather than developing green field sites or expanding the city outward, we are proposing to develop underused post-industrial sites that are in close proximity to city assets like transit, parks, commercial corridors, and a dense residential fabric.

Just this simple act of granting access to the river's edge has catalysed a larger movement to renew this unsung resource, revitalising its health and reclaiming it for recreation. With increased access, people have begun to rally for improving water quality and the space that touch the riverfront. The riverfront then becomes a place for living, working, creating, and playing. Someday, the city's formerly industrial corridors could become areas fully opened to people for swimming, boating, and other forms of public recreation.

**In Reverse Effect, you and your students propose creating a wetland lagoon or park infrastructure by the river. How will this benefit the community and economy?**

The establishment of an entire new lagoon habitat in the place of currently derelict industrial corridors is an idea to reestablish natural systems in order to infuse new life into this formerly industrial riverfront.

**Your practice often takes inspiration from nature, including organic forms and the use of recycled or local materials. Why do you think considering or including nature and ecology in our urban environment is important for architects and urban planners?**

With access to biodiverse nature, the quality of life goes up and the city's resiliency increases as well. If we abuse our environment, our health suffers, as evidenced by the kinds of ecological disasters we read about every day, from lead in drinking water to overflowing landfills, to islands of plastic waste in the ocean. Today's cities require a new approach to urbanism, one that considers the city as an interconnected, ecological system. Accordingly, this approach should support the well-being of the built environment, land, water, and all of their combined inhabitants—from humans all the way down the food chain to algae. Designing with nature in mind resonates with people, tapping into a collective desire for a better living environment and the economic opportunities that accompany it.

3. Northerly Island was designed in a way such that wildlife would be encouraged to occupy it over time, thus creating a biodiverse ecology (Photo: Steve Hall/Hedrich Blessing).

4. Designed by Studio Gang Architects, the WMS Boathouse at Clark Park was one of the four boathouses proposed by Chicago Mayor Rahm Emanuel as part of a plan to improve the riverfront. It is located by the Chicago River's north branch (Photo: Steve Hall/Hedrich Blessing).

5. The Nature Boardwalk project saw improvements to the pond's water quality and hydrology (Photo: Steve Hall/Hedrich Blessing).

6. The Nature Boardwalk at Lincoln Park Zoo has educational zones that function as an outdoor classroom (Photo: Steve Hall/Hedrich Blessing).





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instead of using tap water, which would be a waste of resources. We also replaced an existing concrete edge with wetland plants that filter the water and attract wildlife. The habitats are interpreted through outdoor exhibits and a pavillion that operates as an outdoor classroom along the boardwalk, allowing people and nature to exist in close proximity.

**Older cities often face the pressing issue of renewing their infrastructure, but at a high cost. How can a city like Chicago renew its infrastructure while keeping it low-cost and sustainable?**

As architects, we play a role in reimagining infrastructure, not as a utility, but as a shared civic amenity that can inspire interest from many stakeholders and create momentum for large renewal projects. Many green infrastructure projects are less expensive than more mechanical ones, both in terms of initial cost and terms of maintenance. Infrastructure renewal projects should be looked at in relationship to a city or region-wide network of related systems. This way, cities can create investments that appeal to a range of financing sources. The city of Chicago has collaborated closely with architects on several projects, including adapting old railways into an elevated park, introducing porous paving in the city's networks of alleys, and building new access points and parks along the river.

**What other research issues or projects does Studio Gang hope to tackle?**

In all of our projects, whether built, conceptual, or research, we work to address issues that affect our cities and communities. We often engage with the interconnected issues of urbanisation, climate, and inequity, as well as the intersection of nature and culture. For instance, we have a longstanding interest in the interaction of birds and buildings, and have devoted much time and energy to researching new and better ways of creating bird-safe architecture.

Another related research thread involves more seamlessly integrating nature in the urban environment and creating opportunities for people to experience and understand the natural systems of their cities. We are also exploring ways to improve connections between neighbourhoods and shared city amenities. On a more global scale, we have become very interested in the lack of planning in the marine environment and are investigating how design thinking can be used to help mitigate damage to the environment. 

**You've said that "rather than seeking to control nature with technology, we will discover instead that in the 21st century, nature becomes technology". How did you begin to see nature as a solution to mankind's city planning issues?**

Natural systems provide excellent examples of how to use minimal energy and how to recycle every ounce of waste. As designers, we can learn how to accomplish this for our cities through close observation of natural systems and structures. We can tap into these systems to help us live better. With my studio, we work to understand how we can design with nature rather than against it. We collaborate with a wide range of experts in order to develop solutions that address interdisciplinary challenges facing our cities.

For example, for our Nature Boardwalk project at Lincoln Park Zoo, we worked with a team of biologists, hydrologists, and ecologists to transform a shallow urban pond into a healthy habitat and cultural space for visitors. We regraded the site to recharge the inland pond with rainwater

**References**

<sup>1</sup> Michael Hawthorne, "Chicago River among most threatened waterways in U.S., group says," *Chicago Tribune*, 17 May 2011, accessed 12 February 2016, [http://articles.chicagotribune.com/2011-05-17/news/ct-met-chicago-river-endangeredlist-20110517\\_1\\_chicago-river-waterways-water-quality](http://articles.chicagotribune.com/2011-05-17/news/ct-met-chicago-river-endangeredlist-20110517_1_chicago-river-waterways-water-quality)