

*Studio Gang Architects*

Jeanne Gang and Martin Schendel (Chicago, IL)

Title: Best Nest

*Collaborators*

**ARCHITECT: *Studio Gang Architects***

Yu-Ting Chen, Lynda Dossey, Jay Hoffman, Thorsten Johann, Sarah Vickers, Juliane Wolf

Also with: Raphael Enriquez, Victoria Gonzalez Exposito, Tak Katayama, Rodia Valladares Sanchez, Schuyler Smith, Sebastian Severino Vitantonio.

**STRUCTURAL ENGINEERS: *Thornton Tomasetti Engineers***

Joe Burns and Faz Ehsan

**MECHANICAL ENGINEERS: *C.C.J.M. Engineers***

Sachin Anand, Jin Lee, and Sudharma Wijegunawardana

**ENVIRONMENTAL SUSTAINABILITY CONSULTANTS: *Battle McCarthy***

Piers Heath, Mark Trent, Eirini Matsouki, Scott Smith and Anis Abou-Zaki

**CONCEPTUAL LANDSCAPE DESIGN: *Kate Orff Landscape Design Research***

Kate Orff

**LANDSCAPE DESIGN: *Site Design Group***

Ernest Wong and Helen T Lin

**COST ESTIMATING: *Handscomb Faithful and Gould***

Chris Harris, Stefan Laxgang and Sam Moreyno



**Overall view of the building from the south, showing ‘slag-grass’ garden**

Nest making is a metaphor for our approach to designing this sustainable building. Like a nest, the building is constructed from discarded and abundant materials from the Calumet industrial region.

*Best Nest re-uses...*

The building will help educate visitors about Calumet’s industrial history as a steel producer through the salvaged steel sections that are gathered like twigs and bundled together to become the structure. Calumet’s thriving salvage industry reclaims unused steel and weld-marks each



**Salvaged steel from the area will be used in building structure**

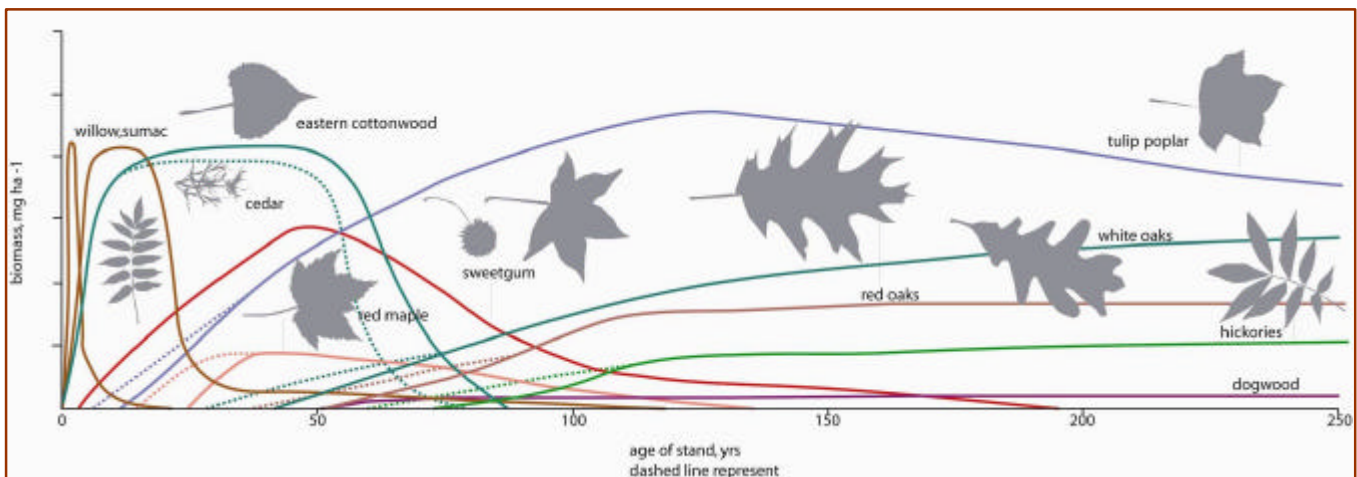
member with its producer’s name such as “Republic” or “Acme”. Visitors will be able to read and understand Calumet’s history through the markings. These steel members are driven at angles into the ground to become its piled foundation. They are bundled in the middle for bracing and splay out at the top to support a continuous concrete roof canopy. Skylights above the structure illuminate the interior space. Wood forms for the roof remain in

place reducing waste and providing a warm finish on the ceiling – for free. Similarly, slag, a steel industry waste product, is re-used as fill, exterior porous paving, a slag-grass garden at the entry and slag terrazzo for floors inside. Remnants of steel railways are integrated into a marsh path-system.

Spaces within the building can adapt and change in order to increase the building’s functionality over time; another facet of sustainable re-use. The lateral array of spaces in the plan with movable partitions, divided core elements and multiple entries along the south porch facilitate a variety of uses day and night and through the years. This flexibility extends building life because it offers the potential for change over time.

*Best Nest is well placed...*

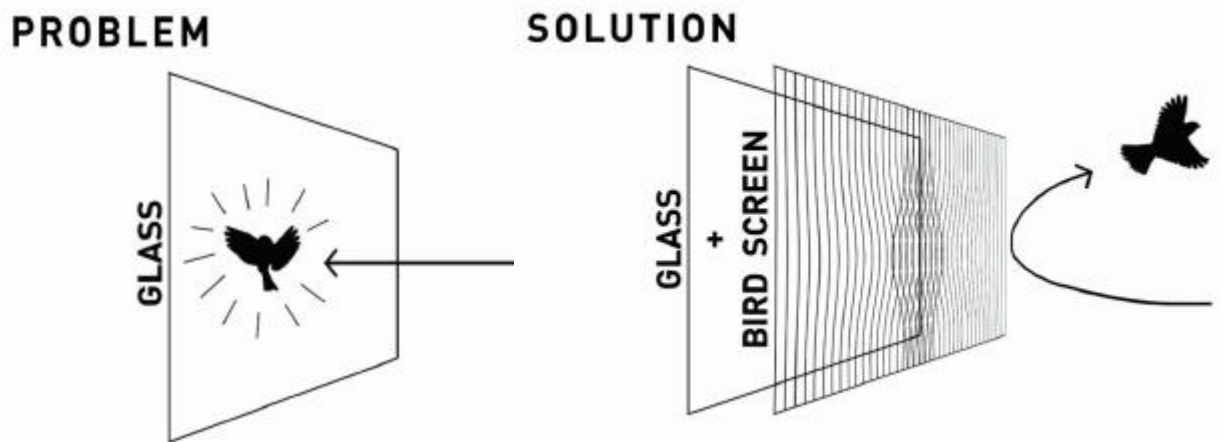
Time brings changes to the site and provides opportunities to discover its unique ecologies and habitats. We envision the community actively engaging the site and participating in its transition over time from pioneer cottonwood forest and emergent marsh to mixed hardwood forest and wetland cultivating an ecosystem-ethic that embraces habitat dynamics and forest succession. Clues to the past and future are visible on the site, like the thick cottonwood grove on the former river bed or a single eastern red cedar in the center of an open field. Our approach is to identify and magnify these “clues” in the landscape as well as the gradual change in species composition in space and time. The community volunteers and visitors are able to participate in the transition of the site toward enhanced biodiversity. The succession is “reset” with a strategy of gradual subtraction and culling of the late-stage cottonwood forest. Biomass from the culling is collected



to power the building. In twenty years, for example, one resulting pattern will reveal traces of the former Calumet riverbed: a field of native switch grass, blue-joint reed grass and winterberry in an attractive habitat for increasingly diverse species of birds, insects and mammals.

### *Best Nest protects...*

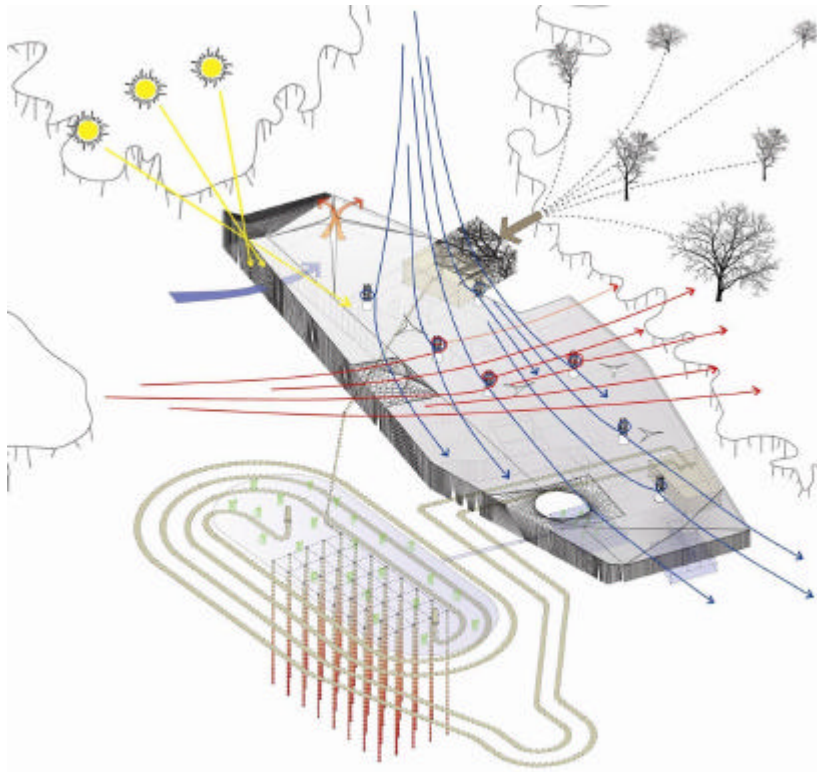
The site is located on the Mississippi flyway for migratory birds; bird deaths from window collisions are estimated at 97 million birds per year (Klem, Daniel, Jr. *Collisions between Birds and Windows: Mortality and Prevention*. Journal of Field Ornithology, 1990). Ironically, many visitor centers covered with glass regularly kill the birds the public is coming to see. Bird vision is different from our own; the basket-like screen of the façade and porch is “bird-visible,” giving birds time to slow down yet enabling people to see outside. The screen works on multiple levels; it provides shade for the building, structure for the deck and creates a “blind” for getting close enough to see birds. The façade provides a woven protection from bird collisions with glass and offers a delightful spatial and textural experience for people.



**The design protects against bird collisions**

### *Best Nest is green...*

**The GROUND:** The wet clayey soils of Calumet are well suited to provide geothermal assistance to heat pumps and a system of earth tubes for pre-warmed or pre-cooled air to habitable spaces. **SITE:** The delicate successional culling strategy provides fuel for a biomass boiler and electricity generator while enhancing habitat richness. Over the long term, a small black locust firewood grove near the building will provide fuel resources.

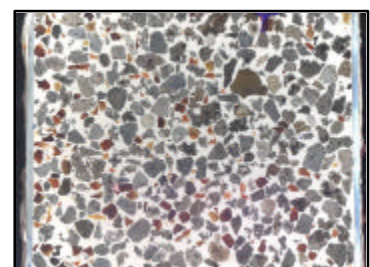


**Design incorporates a range of green building techniques and will achieve Leadership in Energy and Environmental Design (LEED™) Certification**

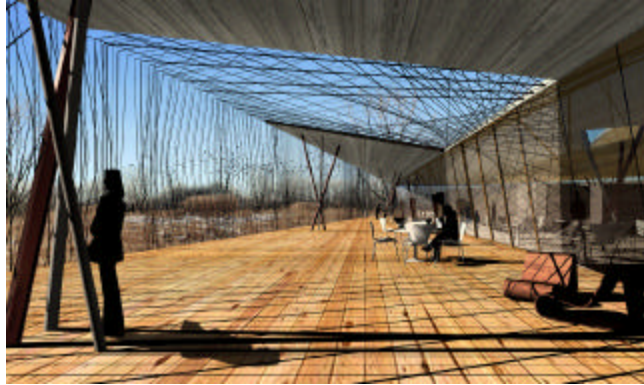
**STRUCTURE:** It takes enormous amounts of energy to construct heavy things. The building is lightweight, relieving its structural members of extra burden and the site from disturbance that accompanies large foundations. Simple steel piles driven into the soil for foundations minimize this problem. The roof plane of the building is sculpted to optimize energy production, natural daylight, natural ventilation and water collection. Waste water is treated in a vertical flow constructed wetland near the entry of the building.

*Best Nest is well made...*

The project explores materials and function in relation to sustainability. The materials of the building and the site are chosen to give the building an enduring quality and the sense that it is completely rooted in its environmental and industrial context. The materials associate with both the industry and ecology offering visible connections between the environment and culture of the Calumet region.



**Slag and recycled glass terrazzo**



**View from south porch with protective bird screen**