SITES CERTIFIED PROJECT

CHICAGO NAVY PIER
PHASE 1

2016
SITES GOLD

Chicago, Illinois, United States

THE Sustainable SITES Initiative®

SITES CERTIFICATION

Chicago Navy Pier is the first project to earn Gold certification under the SITES v2 Rating System. Certifying Phase 1 expanded green spaces, improved pedestrian access, energy efficiency, innovative storm water management, use of recycled local materials and much more.

The SITES program at GBCI offers the most comprehensive system for developing and distinguishing sustainable landscapes. This certification recognizes Navy Pier's achievements as it remains a world-class attraction with expanded programming and more engaging public spaces for residents and visitors alike.

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Chicago Navy Pier - Phase 1

SITES v2 Gold (2016)	111*
Site Context	10/13
Pre-design Assessment + Planning	3/3
Site Design - Water	6/23
Site Design - Soil + Vegetation	14/40
Site Design - Materials Selection	17/41
Site Design - Human Health + Well-Being	21/30
Construction	14/17
Operations + Maintenance	13/22
Education + Performance Monitoring	10/11
Innovation Or Exemplary Performance	3/9

*Out of a possible 200 points and 9 bonus points
Certified 70–84, Silver 85–99, Gold 100–134, Platinum 135–200

"SITES makes you think through the site before you begin design. It forces you to use a quantifiable framework that creates learning opportunities for all the designers and contractors involved. All the challenges that came out of this new process were all opportunities for learning. Challenges create growth and ultimately value. SITES will drive the industry to become more sustainable and transparent."
- Bryan Astheimer, an architect and sustainability consultant at Re: Vision Architecture, worked with James Corner Field Operations to achieve SITES Gold certification for the transformation of the Chicago Navy Pier.

PROJECT BACKGROUND

Former Land Uses

Navy Pier has been a Chicago icon and popular destination throughout much of its history. Opened to the public in 1916 and originally named “Municipal Pier,” Navy Pier was built under nationally-known architect Charles Sumner Frost based on Daniel Burham’s “Master Plan of Chicago.” Municipal Pier was officially renamed Navy Pier in 1927 as a tribute to the Navy personnel who were housed at the Pier during World War I. Designated as a Chicago landmark in 1977, Navy Pier underwent a redevelopment in 1994 with improvements made to nearly every aspect of the Pier. Since it reopened in July 1995, Navy Pier has offered a diverse and eclectic experience and is positioned in one of the most unique settings in the world.

Community Feedback

The Pier is the most popular attraction in the Midwest, but there was a strong perception among Chicago residents that it is:

- not for locals / just for tourists;
- disconnected from the City;
- overly commercial and cluttered with inconsistent retail;

and

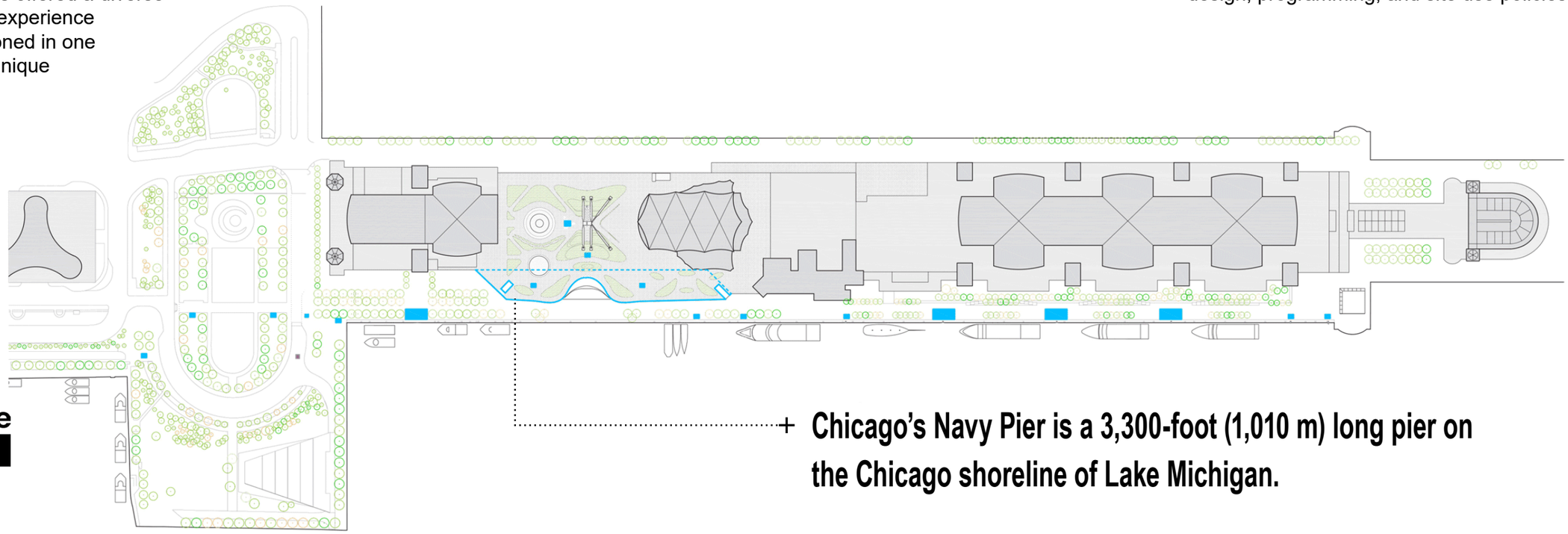
- not contemporary, green, or sustainable.

Site Constraints

1) The drop-off and pick up area was dominated by cars and buses. It was a barrier that disconnected the site from the city grid and barred pedestrians from safe and free movement;
2) Existing soils in the terra firma portion of the project were found to be contaminated with Thorium below the surface soil layer;
3) The pier itself is not terra firma which made planting trees on the pier a major design and construction challenge;
4) Had to deal with existing grades at buildings along south dock -- this made achieving ADA compliance, positive stormwater drainage and new grading of south dock a challenge.

Site Opportunities

1) Project site being located in existing urban site with phenomenal proximity to basic services and existing infrastructure (transportation, utilities, stormwater drainage, wastewater treatment, solid waste management);
2) Previously developed site;
3) Understanding of site user groups (data) and existing open space and public realm deficiencies that could be addressed during site redesign;
4) Harvesting of rainwater for reuse;
5) Exiting materials available for reuse (per materials survey);
6) Support human health and well being through design, programming, and site use policies.



Chicago’s Navy Pier is a 3,300-foot (1,010 m) long pier on the Chicago shoreline of Lake Michigan.

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PROJECT GOALS

Transform outdoor landscape into a more vibrant setting for recreation and social life.

Encourage movement, exploration, interaction and discovery.

Renew space with contemporary design and robust seasonal plantings.

Make a world class destination.

Create a center of activity and culture that ties back into the very essence that is Chicago.

291,852 ft² or 6.7 acres within the SITES project boundary

Urban open space, park, and public realm renovation

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PROJECT TEAM

In March of 2012, the NPI Board announced that design firm James Corner Field Operations (JCFO) had been selected as the winning team. The firm, led by Founder James Corner, is an award-winning landscape architecture and urban design firm that has gained international recognition and acclaim.

Client: **Navy Pier Incorporated**
Landscape Architect (Prime): **James Corner Field Operations**
Landscape Architect (Local): **Terry Guen Design Associates**
Architect: **nArchitects**
Civil: **Primera Engineering**
SITES Consultant: **Re:Vision Architecture**
Structural: **Buro Happold Consulting Engineers**
Lighting: **L'Observatoire International**
Fountain: **Fluidity Design Consultants**
Signage: **Pentagram**
Soils Scientist: **Jeffrey Bruce and Company**
Irrigation Consultant: **ESD Global**
Construction Manager 1: **Madison Evans Construction**
Construction Manager 2: **McHugh Construction**

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STRATEGIES

Increased On-site Vegetation:

The pier was punctured, tree tubs were constructed, and approximately 200 trees were planted. The tree tubs help absorb stormwater, and the trees planted in tubs reduce the heat-island effect and improve the air quality and microclimate of Navy Pier. Most of the trees have been locally-sourced and are native to the Chicago eco-region.

Pushing the Materials Industry:

A set of specifications were developed that clearly described SITES materials credits and associated requirements. This required contractors to vet materials suppliers, identify suppliers that could meet and document desired material characteristics. Thresholds were established for wood products from non-threatened tree species, materials with recycled content, and regional and salvaged materials.

Managing Stormwater and Restoring Soils:

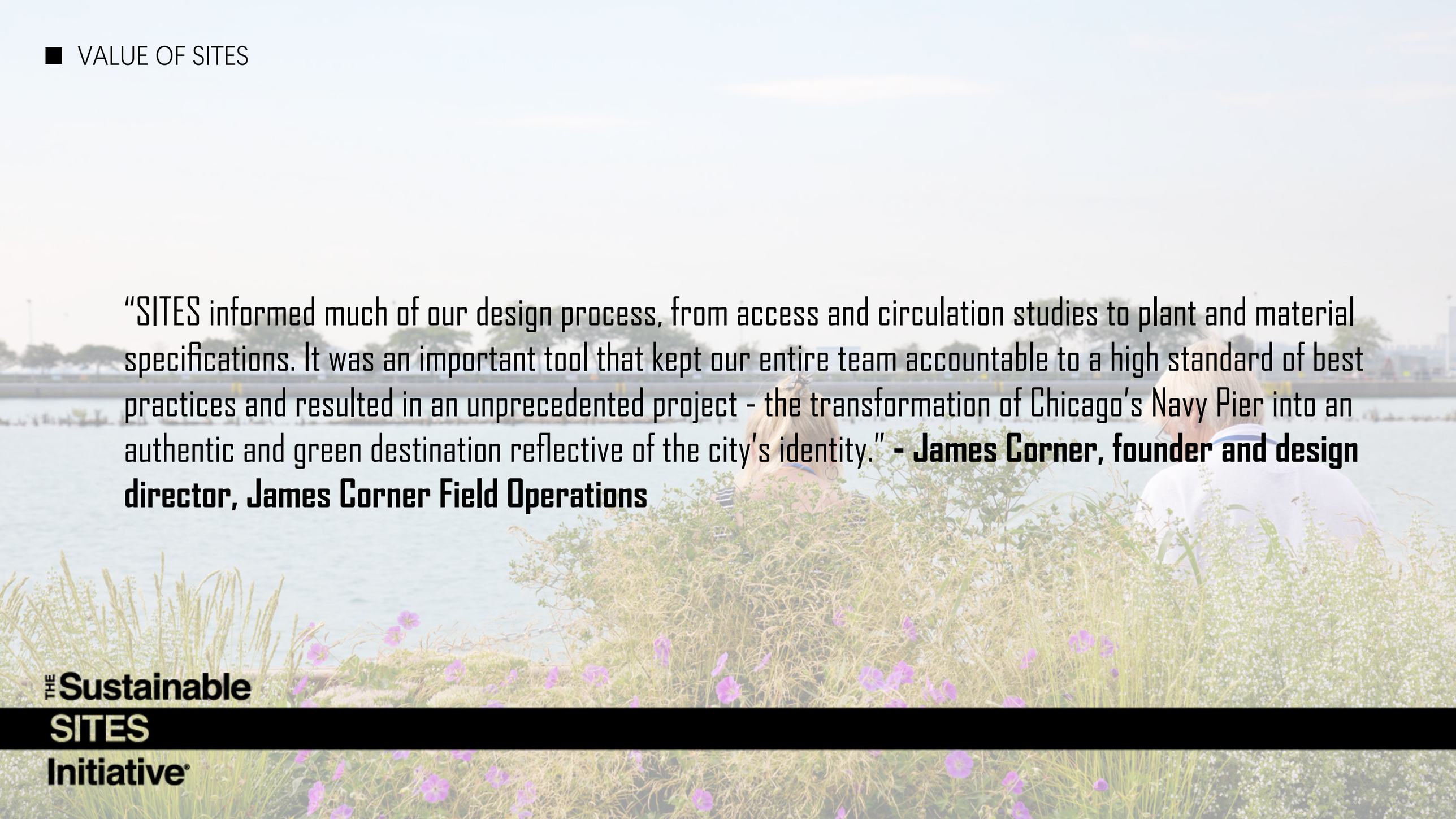
On the pier, stormwater was routed to tree tubs to function as irrigation and filtration. The stormwater was treated with filters prior to discharging to Lake Michigan. For the portion of the project on land, stormwater was routed through bioinfiltration basins and cisterns prior to discharge. Irrigation demand was met through 100% rainwater harvesting. In areas where excavation occurred, soils were removed and sent to landfill. In areas where soils were not to be “disturbed”, soils were left in place so as not to disturb and transport contaminants.

Improved Circulation and Flexible Programming:

The majority bus drop-off in front of the headhouse was relocated (previously four lanes - two for drop-off and two for pass-by with a median) to along the south loop road with a future project to the area north of the site. Headhouse road now has one drop-off lane and two drive-by lanes all with a flush curb, which allows for flexible programming like markets and festivals.

Conserving Resources and Improving Efficiency:

Through the incorporation of energy efficient lighting, pumps, and aerator and transformer components, energy consumption was reduced by an estimated 60%. 100% of structural waste and 99.84 % of roadway and infrastructure waste has been diverted from landfill.



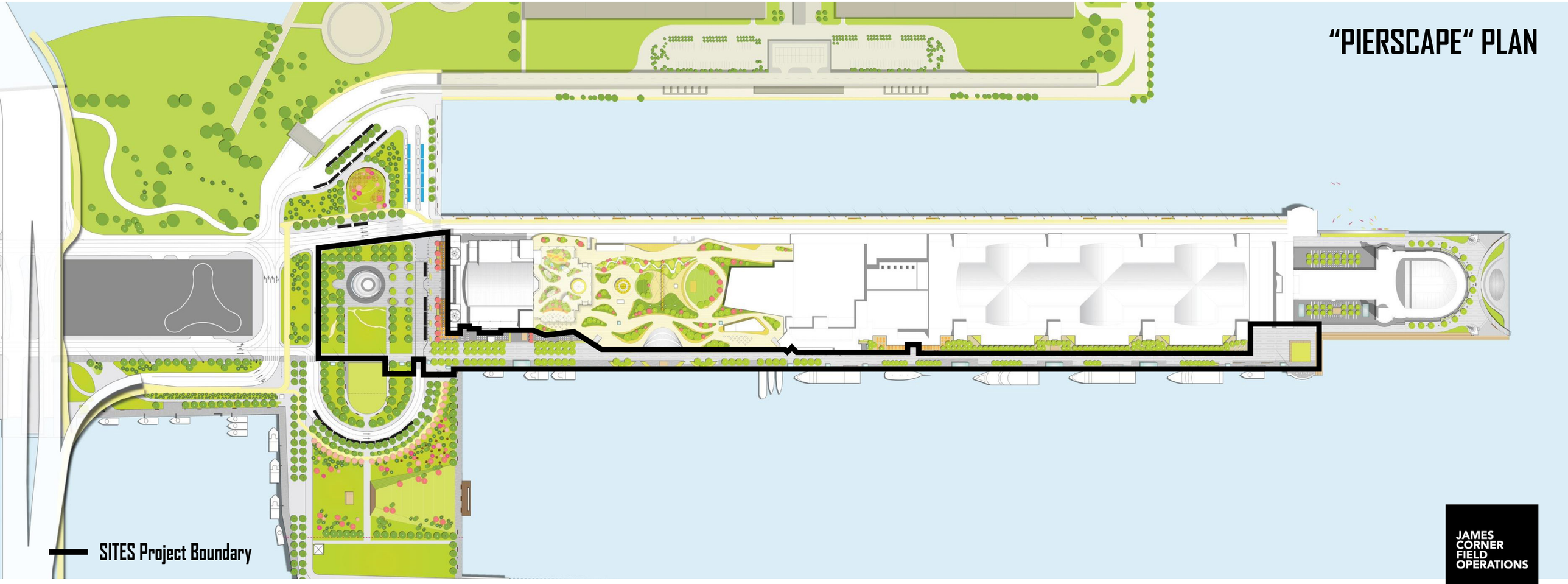
"SITES informed much of our design process, from access and circulation studies to plant and material specifications. It was an important tool that kept our entire team accountable to a high standard of best practices and resulted in an unprecedented project - the transformation of Chicago's Navy Pier into an authentic and green destination reflective of the city's identity." **- James Corner, founder and design director, James Corner Field Operations**

FINAL DESIGN

Provide design that is **Contemporary, Green, and Sustainable.**

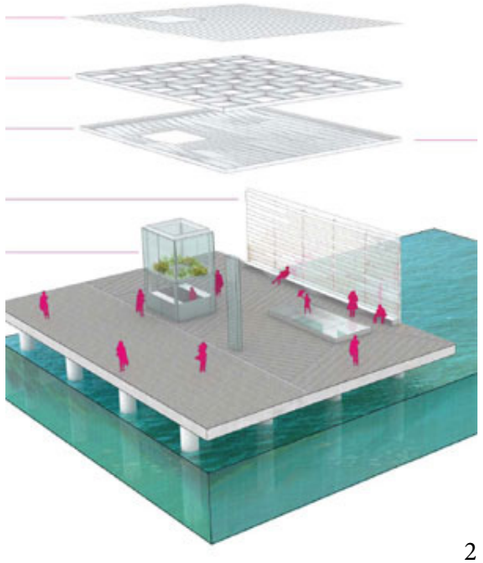
Take advantage of the pier's unique location to make **Strong Connections** between the city & the lake.

Embrace Chicago, its culture and art, rendering the pier as a more **Authentic Place** that is reflective of the city's identity.



FINAL DESIGN

The SITES Rating System supported the new PIERSCAPE design for Chicago's Navy Pier. The design is anchored by a more open, simple, and tree-lined South Dock Promenade, which connects a series of thematic "social rooms". Each room hosts special places and programs that enrich the experience of the Pier's diverse constituency and transform it as a newly sustainable, authentic, and iconic celebration of Chicago.



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Phase 1 Specifics

Gateway Park Fountain(1) is a dramatic large-format interactive water feature with a complex geometry of radial jets that will exhibit seasonally responsive water actions and theatrical lighting. The fountain's jets flutter organically in sequences suggesting rolling waves, undulating flocks of birds, or schooling fish.

The Gateway Park Plaza is a destination for community events and markets and is newly connected to the area in front of the Headhouse with a curbless plaza.

South Dock has been recast as a newly green and engaging space with generous shade trees, new social furnishing, intimate pocket-parks, and clean contemporary paving.

The Lake Pavilions (2) frame views to the Lake and bring fresh contemporary architecture to the water's edge. Stainless steel soffit panels mirror the water and reflect dappled light onto the dock; they provide shade and accommodate an array of events and functions.

The Garden Room at South Dock Pocket Parks (3) features a variety of ornamental grasses, colorful perennials and native plantings, shade trees, and outdoor seating. Adjacent restaurants and bars, new kiosks for food and boat "ticketing," define new areas that provide social and relaxed spaces for soaking in the South Dock experience.

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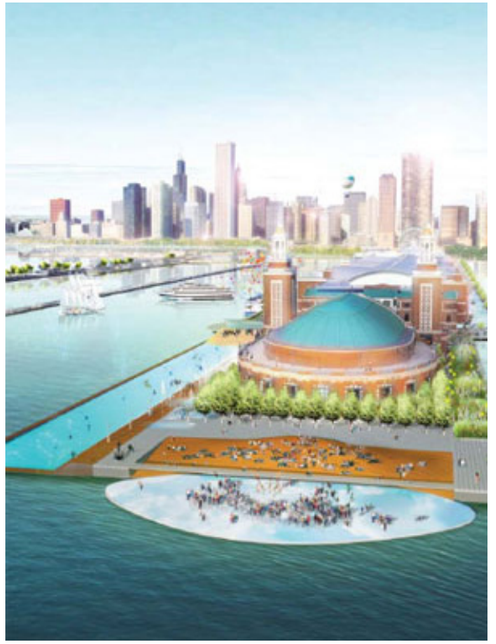

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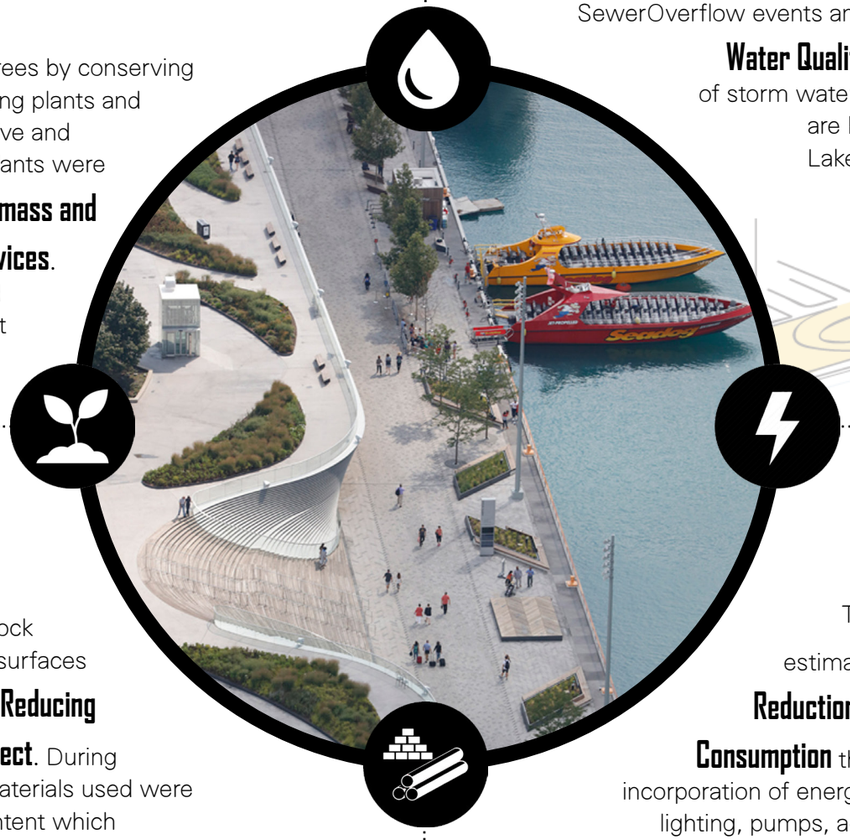
VALUE OF SITES

Plants + soils

The project preserved trees by conserving 73% of the site' s existing plants and healthy soils. 100% native and appropriately adapted plants were installed to **Optimize Biomass and Support Ecosystem Services**. Soil health was restored and amended in place at Gateway Park.

Water

Subgrade cisterns collect stormwater for use in irrigation of landscape. The project manages the 80th percentile storm event to reduce related Combined SewerOverflow events and **Improve Water Quality**. **1.5 tons** of storm water sediment are kept out of Lake Michigan per year.



Materials

Through the use of Unilock pavers, site paving and surfaces exhibit a high SRI value **Reducing Localized Heat Island Effect**. During construction, 30% of materials used were made from recycled content which significantly **Reduced the Material Waste**. 100% of structural waste and 99.8% of roadway and infrastructure waste was diverted from landfill.

Energy

The project estimates a **60% Reduction in Energy Consumption** through the incorporation of energy efficient lighting, pumps, aerator, and transformer components.

ENVIRONMENTAL FEATURES

SOCIAL

Sustainability awareness and education via signage and display monitors. **Improves Visitor Experience** and **Fosters Community** with social gathering spaces. Multiple scales of **Social Interaction** are **Supported** from the individual to the office happy hour or tour group. During construction, the hiring of local, low–wage individuals was prioritized and the workforce was **Provided Living Wage and Training**.

ECONOMIC

Low maintenance materials and vegetation result in **Low Maintenance Costs**. Estimated annual water savings of nearly **370,000 Gallons** are due to water conservation efforts. The purchase of materials and construction services from locally owned and operated businesses is equal to or greater than 10% of the overall construction budget. An estimated **60% Reduction** in energy consumption was achieved through the incorporation of energy efficient lighting, pumps, and aerator and transformer components.

"We are honored to receive SITES certification from such a prestigious and highly regarded organization," **said Marilynn Kelly Gardner, Navy Pier president and CEO.** "Creating a model of sustainability for not only Chicago, but institutions around the world,was at the forefront of our minds as we embarked on the re-imagination of the Pier's public space."