

# Beyond Zero: Welcome to Carbon Neutrality

During this Beyond Zero Series event, Building Energy Exchange and NYSERDA welcome project experts who have creatively designed low-carbon, public-facing buildings that act as welcoming spaces for visitors and tourists and increase economic development in their surrounding communities.

## Moderator

Ellen Zielinski, Vice President of Strategy Development, K02 Consulting

## Speakers

Adam Yarinsky, Principal, ARO

Ben Fain, Owner & CEO, West Bridge Street Holdings LLC

Amy Weisser, Deputy Director, Strategic Planning and Projects, Storm King Art Center

July 21, 2022 | 9 to 10:30 am | 1.5 AIA LU|HSW

Building Energy Exchange | 31 Chambers St, New York NY 10007



NYSERDA

**be  
ex**

building  
energy  
exchange



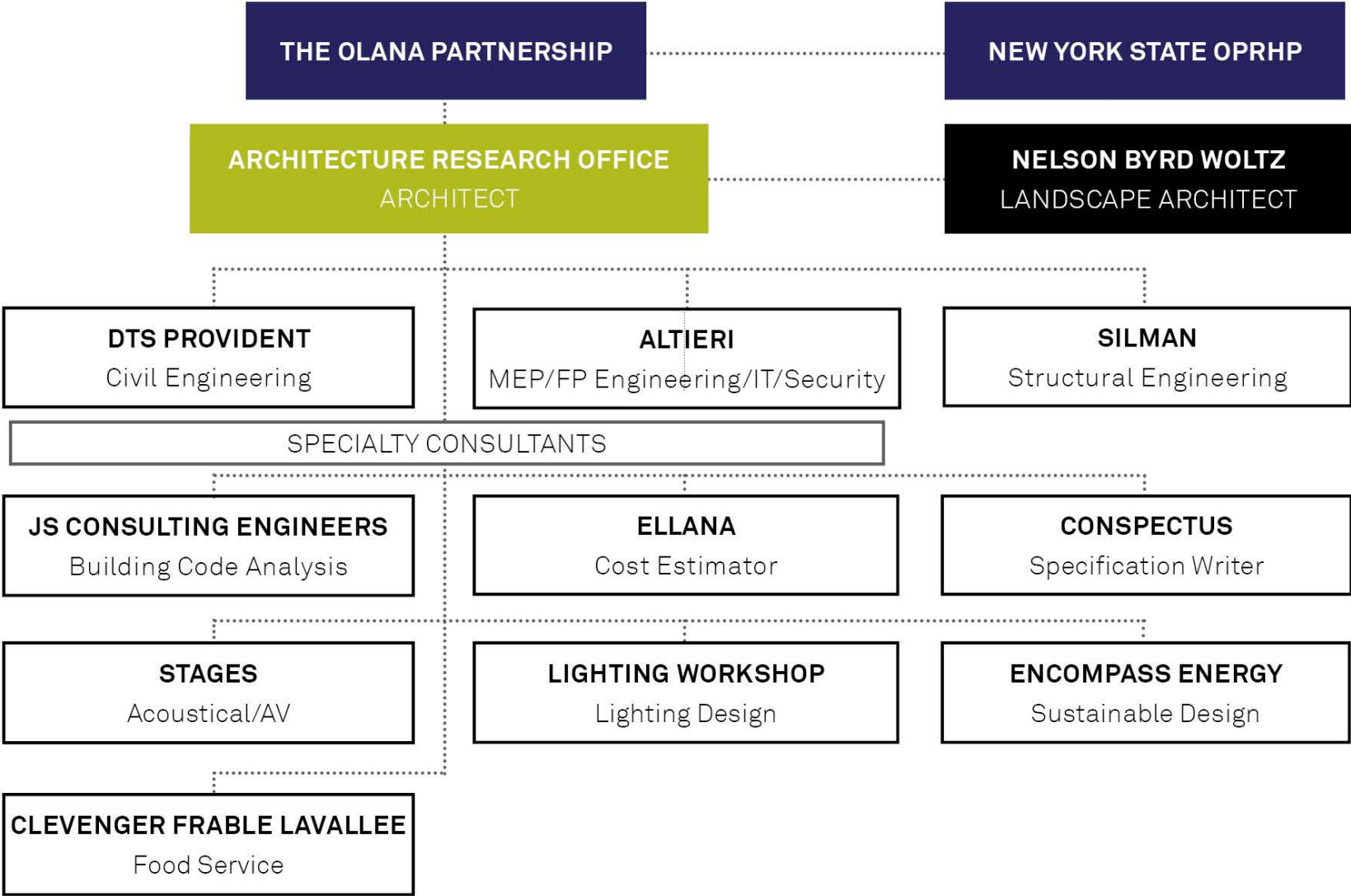
# Frederic Church Center Olana State Historic Site BEEX Beyond Zero Series

July 21, 2022





Frederic Church Center: Project Team









# A HOLISTIC VISION OF CARBON NEUTRALITY

## ORIENT

Visitors to Olana as an Interpretive Threshold

## ENGAGE

Church's Vision of Olana as a Work of Art Uniting Nature and Culture

## STEWARD

Resources to Meet Present and Future Needs



# A HOLISTIC VISION OF CARBON NEUTRALITY

## ORIENT

Lengthen & Enhance Visitor Experience at Olana & in Region

## ENGAGE

Connection to Church's Reforestation at Olana

## STEWARD

Embodied & Operational Carbon Neutrality



# ORIENT

## Visitors to Olana as an Interpretive Threshold

- Siting and Wayfinding
- Program Organization
- Building Form, Massing and Roofline









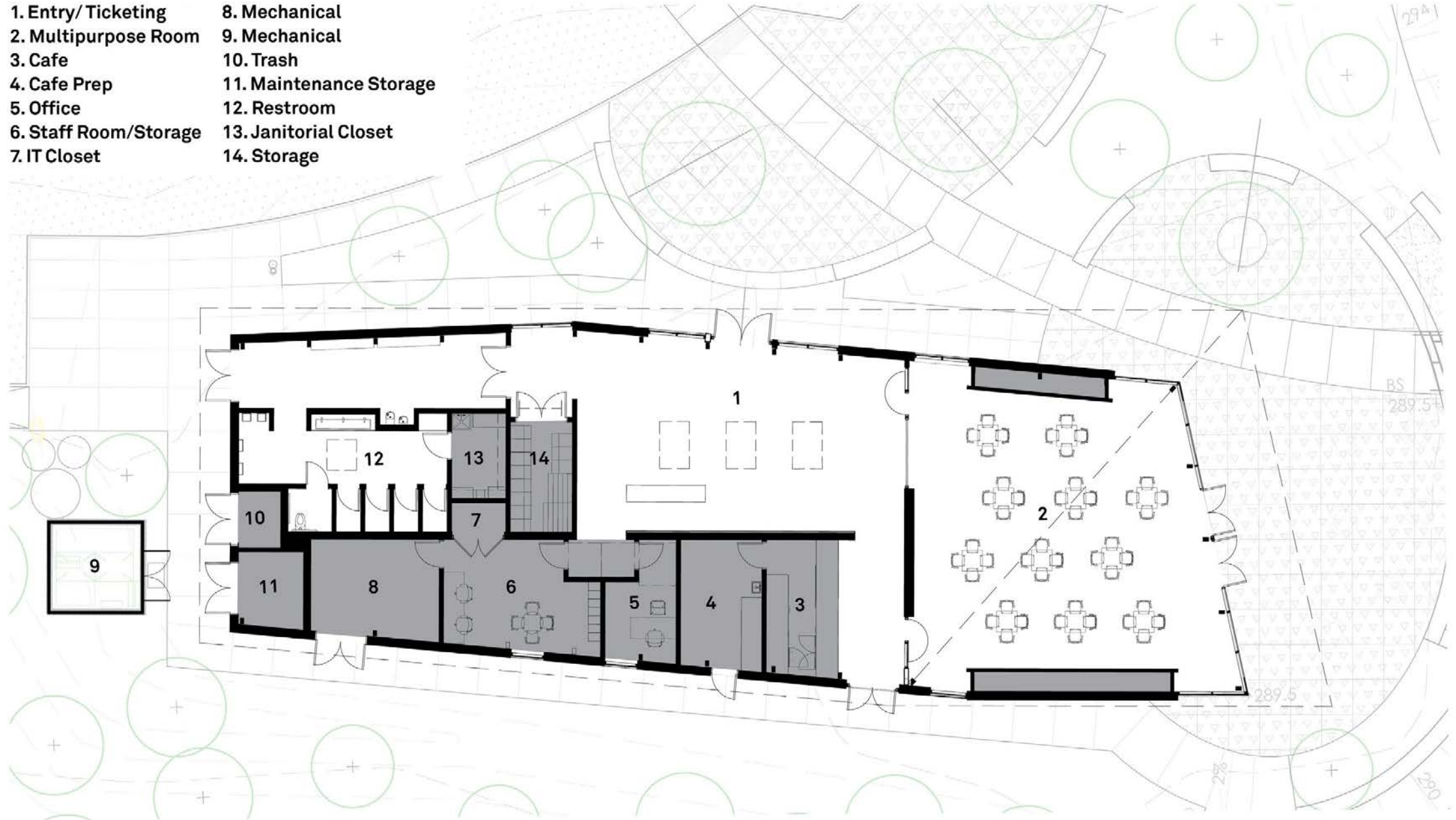


Frederic Church Center: Site Plan

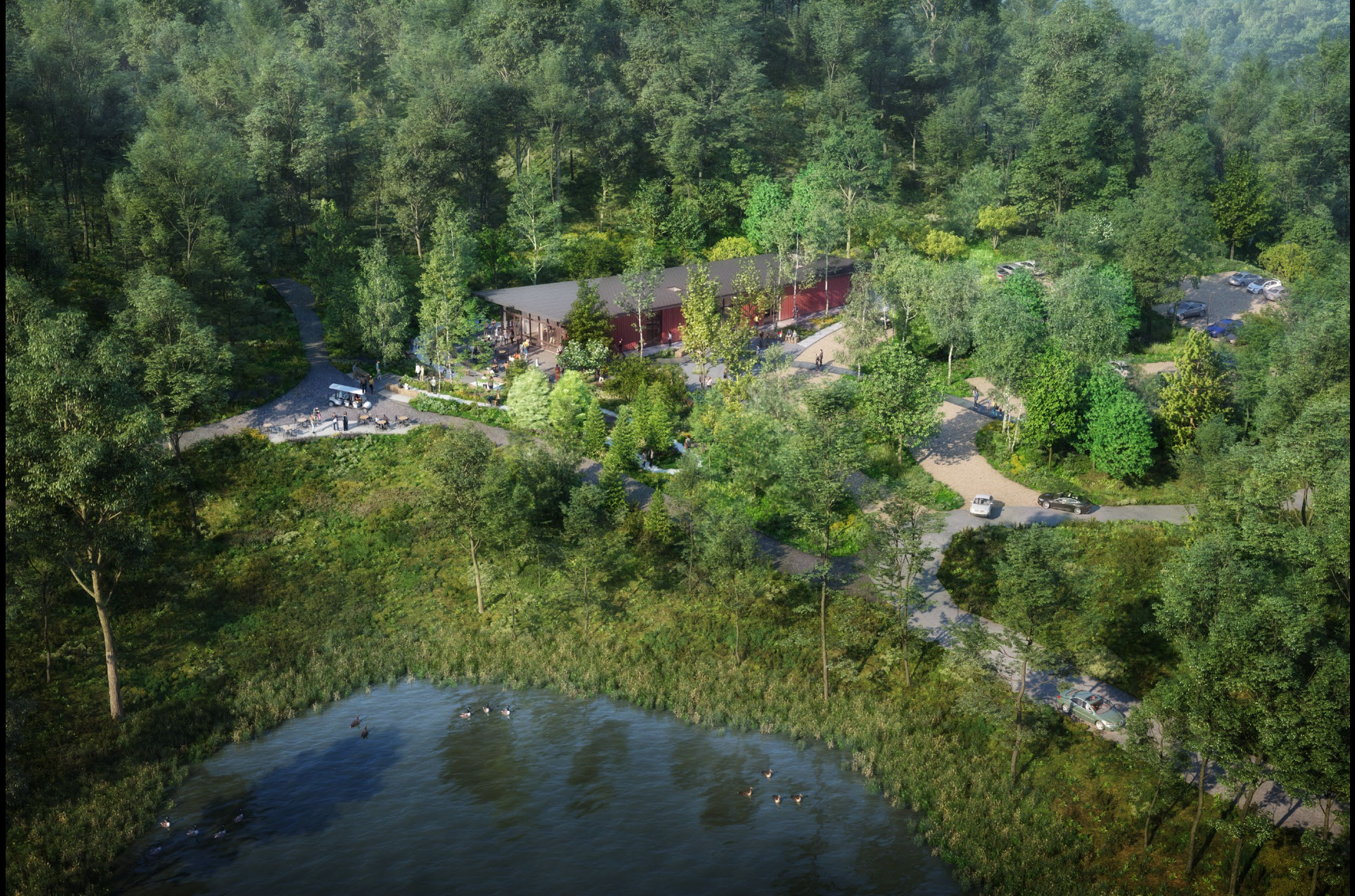


## Frederic Church Center: Floor Plan

- |                       |                         |
|-----------------------|-------------------------|
| 1. Entry/ Ticketing   | 8. Mechanical           |
| 2. Multipurpose Room  | 9. Mechanical           |
| 3. Cafe               | 10. Trash               |
| 4. Cafe Prep          | 11. Maintenance Storage |
| 5. Office             | 12. Restroom            |
| 6. Staff Room/Storage | 13. Janitorial Closet   |
| 7. IT Closet          | 14. Storage             |









# ENGAGE

## Church's Vision of Olana as a Work of Art Uniting Nature and Culture

- Reciprocity between architecture and landscape
- Integrity of forms and materials
- Daylight and views











# FREDERIC CHURCH'S OLANA

A NEW YORK STATE HISTORIC SITE  
AND NATIONAL HISTORIC LANDMARK

 <p>Star Gazing Celebration</p>	 <p>Visitor Center &amp; Museum Store</p>	 <p>Next Historic Landscape Excursion</p>
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# STEWARD

## Resources to Meet Present and Future Needs

- Low Embodied Carbon
- Low Operational Carbon
- Sustainability & Resiliency



# CARBON NEUTRAL: NYSERDA FUNDING

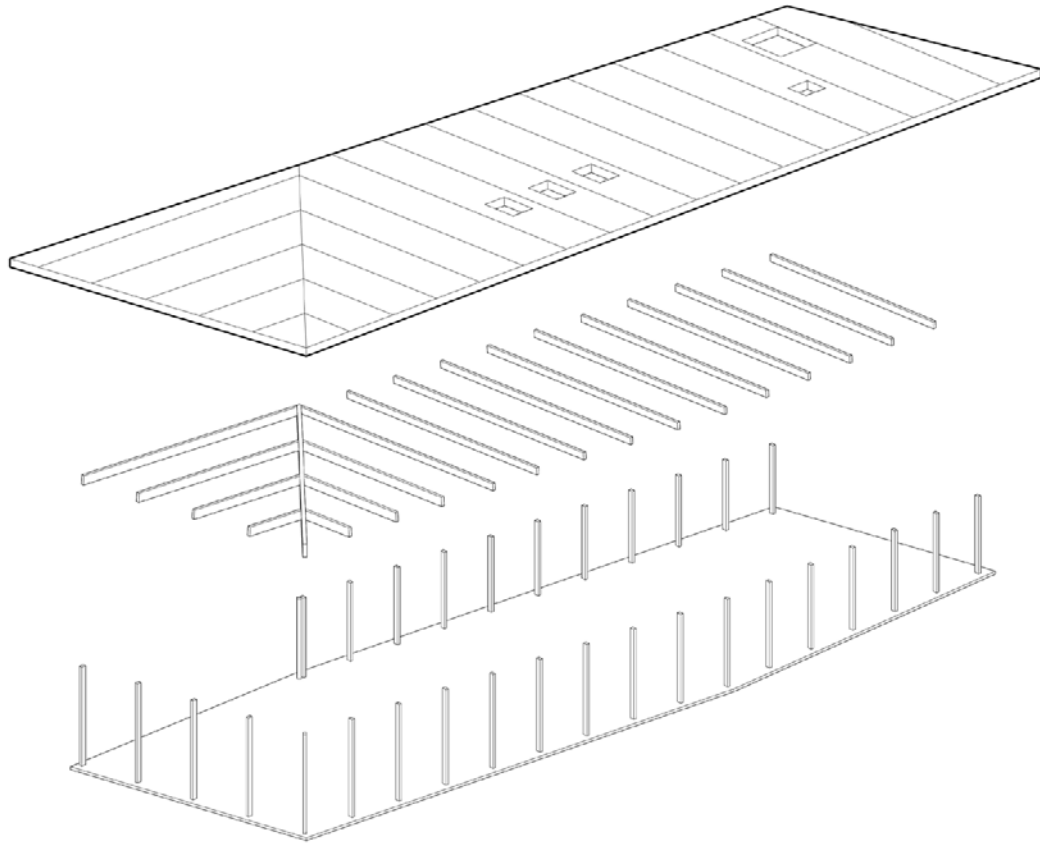
## Low Embodied Carbon

- Mass Timber

## Low Operational Carbon

- All Electric Mechanical Systems
- Solar Array



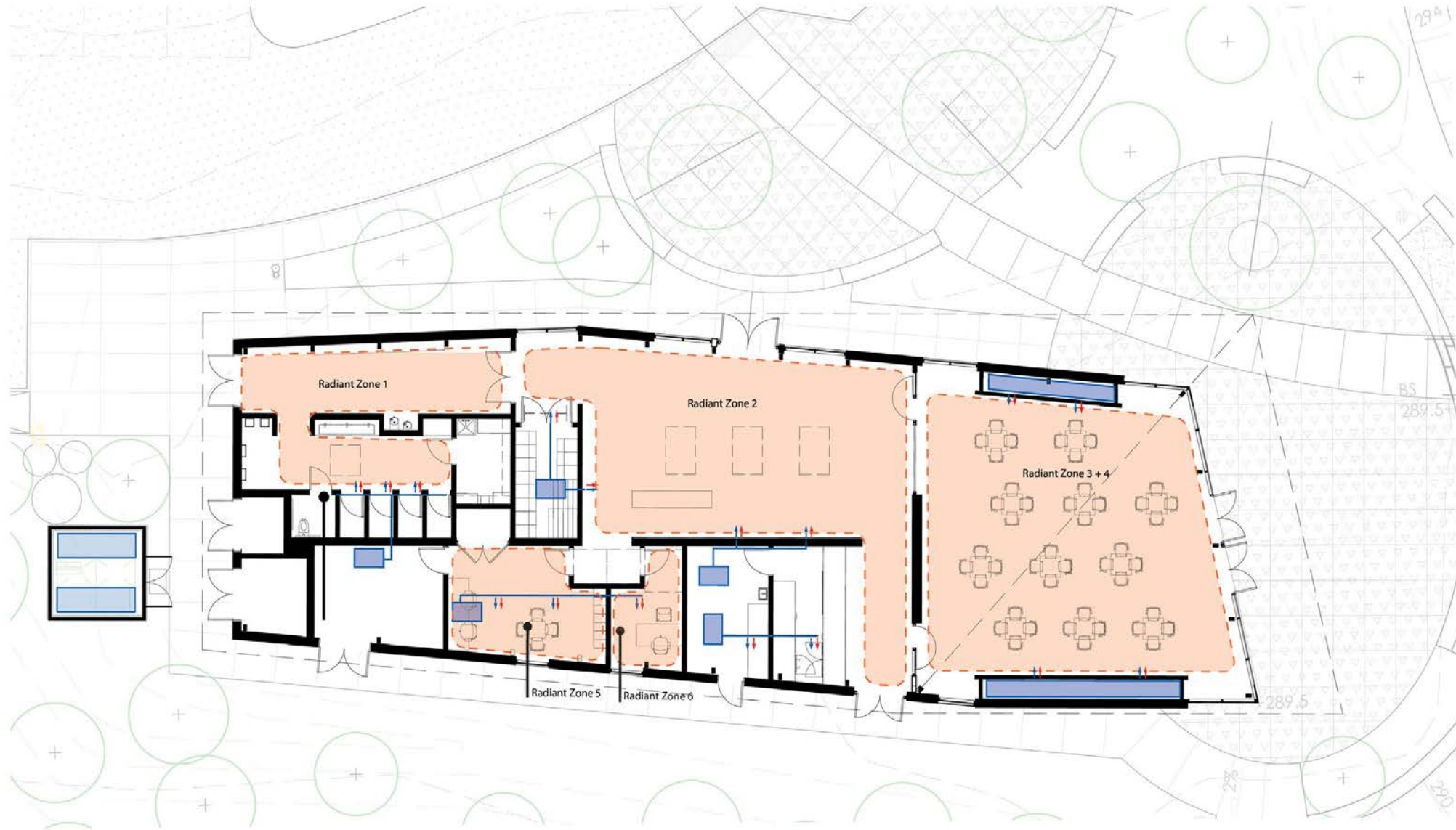


## LOW EMBODIED CARBON: MASS TIMBER

- First Public Building In New York State Using Mass Timber
- SUNY College of Environmental Science & Forestry Sustainable Resources Management Group
- Frederic Church's Forest Restoration at Olana



## Frederic Church Center: Plan Diagram of HVAC Systems



LOW OPERATION CARBON: ALL ELECTRIC MECHANICAL SYSTEMS



An aerial photograph of a rural landscape. A river flows along the left side. A road with a roundabout is visible. A large green field is in the center. A small pond is located near the bottom center. A red dashed circle highlights a specific area in the bottom left. Text labels 'SOLAR ARRAY' and 'FREDERIC CHURCH CENTER' are overlaid on the image.

**SOLAR  
ARRAY**

**FREDERIC CHURCH CENTER**



# Sustainability & Resiliency



## BUILDING ENVELOPE

- Cross-laminated timber (CLT) construction
- Insulated bird-friendly glazing



## DURABLE AND LOW MAINTENANCE MATERIALS

- CLT and stone regionally sourced
- Exposed CLT wall finish
- Exposed architectural grade glulam beams
- Recycled and rapidly renewable materials for interior finishes
- Low-VOC finishes



## HIGH EFFICIENCY MECHANICAL SYSTEM

- Electric air to air variable refrigerant flow (VRF) heat pump system for heating/cooling
- Energy Recovery Ventilator (ERV) for outside air
- Electric heat pump hot water condenser for hydronic radiant floor heating



## DAYLIGHT + LIGHTING SYSTEM

- Access to natural daylight and views
- High-efficiency LED light fixtures
- Integrated lighting and automated window shading system



## WATER MANAGEMENT AND EFFICIENCY

- Low-flow toilets and fixtures
- Bioswales for stormwater management at parking lot



## SUSTAINABLE LANDSCAPING

- Responsibly restore the ecology where site disturbance is required
- Utilize native planting to achieve woodland restoration goals in SLDP







A vibrant, sunlit landscape featuring a modern building with large glass windows and a wooden facade. The building is surrounded by lush greenery, including tall trees and low-lying plants. In the foreground, a paved path leads towards the building, and several people are walking along it. A person in a wheelchair is also visible on the path. The background shows a range of mountains under a clear sky.

**Thank you.**

**Adam Yarinsky, FAIA LEED AP  
Architecture Research Office**

**[ayarinsky@aro.net](mailto:ayarinsky@aro.net)**

**[www.aro.net](http://www.aro.net)**



## CATSKILL GATEWAY: PROJECT SCOPE

For the Village of Catskill, these projects will contribute to the dynamic community revitalization underway. Offering amenities and activities for visitors and residents alike, the varied businesses will provide new opportunities for all to enjoy, to discover the bounty of New York State – agricultural, artisanal, and cultural. The varied businesses, and especially the hotel, will also serve close neighbors Foreland and the Lumberyard, offering cooperative amenities and mutually support each others' activities

THE THREE BUILDINGS WILL BRING DYNAMIC, STREET FRONT ACTIVITY TO TWO MOST CENTRAL BLOCKS ON MAIN STREET, BREATHING NEW LIFE AND ENERGY INTO CATSKILL'S HISTORIC DOWNTOWN AND SERVING AS ANCHORS TO THE EXPANDING REVITALIZATION UNDERWAY IN CATSKILL.





## 329, 331, 335 MAIN STREET



WITH PLANS FOR A GRAB+GO MARKET AND BAKERY IN 329-331 STOREFRONT SPACES AND A CAFE/COMMUNITY SPACE IN THE 335 STREET FRONT, THESE BUILDINGS WILL SERVE AS AN UNOFFICIAL WELCOME CENTER TO CATSKILL, WHERE VISITORS WILL BE ABLE TO STOP IN AND HANG OUT AS THEY START THEIR CATSKILL VISIT.



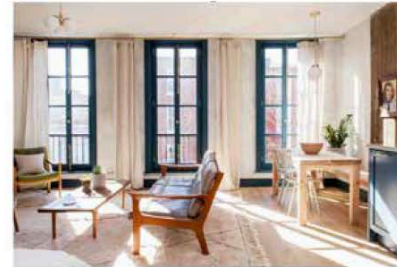


# 329, 331, 335 MAIN STREET

The upper floors of the three buildings will be transformed into a 25-room, select service hotel (leased to local operators, with less than 10 direct employees total planned). There are currently no hotels in the Village of Catskill.

LOCAL NEIGHBORS FORELAND AND LUMBERYARD ARE SUPPORTIVE AND EAGER FOR A HOTEL

THE HOTEL ALREADY HAS A NEAR GUARANTEED 50% OCCUPANCY TO SERVE THE MORE THAN 45 EVENTS TO BE PRESENTED EACH YEAR AT FORELAND AS WELL AS 15+ MAJOR FILM PRODUCTIONS AT LUMBERYARD





# 335 MAIN STREET BANK BUILDING



THE BANK BUILDING WILL BECOME HOME TO BILLS\$, A BOOKSTORE, CAFE AND COMMUNITY SPACE, AND AFTER HOURS PUBLISHING, A LITERARY PRESS THAT WORKS WITH NY AUTHORS AND WRITERS WILL HOST READINGS, LECTURES, BOOK SALES AND A COMMUNITY WORK SPACE. THE SPACE WILL BE OPEN EVERY DAY, FOR BUSINESS AND COMMUNITY





# ENERGY SYSTEM

To achieve Carbon Neutral energy performance with zero fossil fuels used, CATSKILL GATEWAY will combine extensive renovations to fully insulate the two buildings with new renewable energy systems. Renovations will focus on insulation and weatherization to completely seal the thermal enclosures of the two buildings and allow efficient energy use.

This innovative project will create one of NYS's first-ever net-zero hotels. To power the planned activities in the 329-331 Main Street buildings, the project will install new solar arrays, totalling 368 kW, split between the buildings and an adjacent site nearby. This will offset all electric loads and achieve net zero energy performance, powering the estimated 468,800 annual kWh energy consumption for all activities planned at 329-331 Main St., plus an additional 50 kW array (outside of this application budget) to power a portion of activities in the Bank Building at 335 Main St. This will ensure that the entire CATSKILL GATEWAY campus is supported by green energy. CATSKILL GATEWAY will offer numerous opportunities to educate visitors, residents and, most vitally, peers in the industry, on the limitless potential of clean energy—inspiring them to think more broadly, urgently, and creatively about implementing clean energy actions to benefit our environment and communities.





# STORM KING ART CENTER













# Live

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“a restorative dose of nature  
and culture”

—*The New York Times*  
(July 2020)





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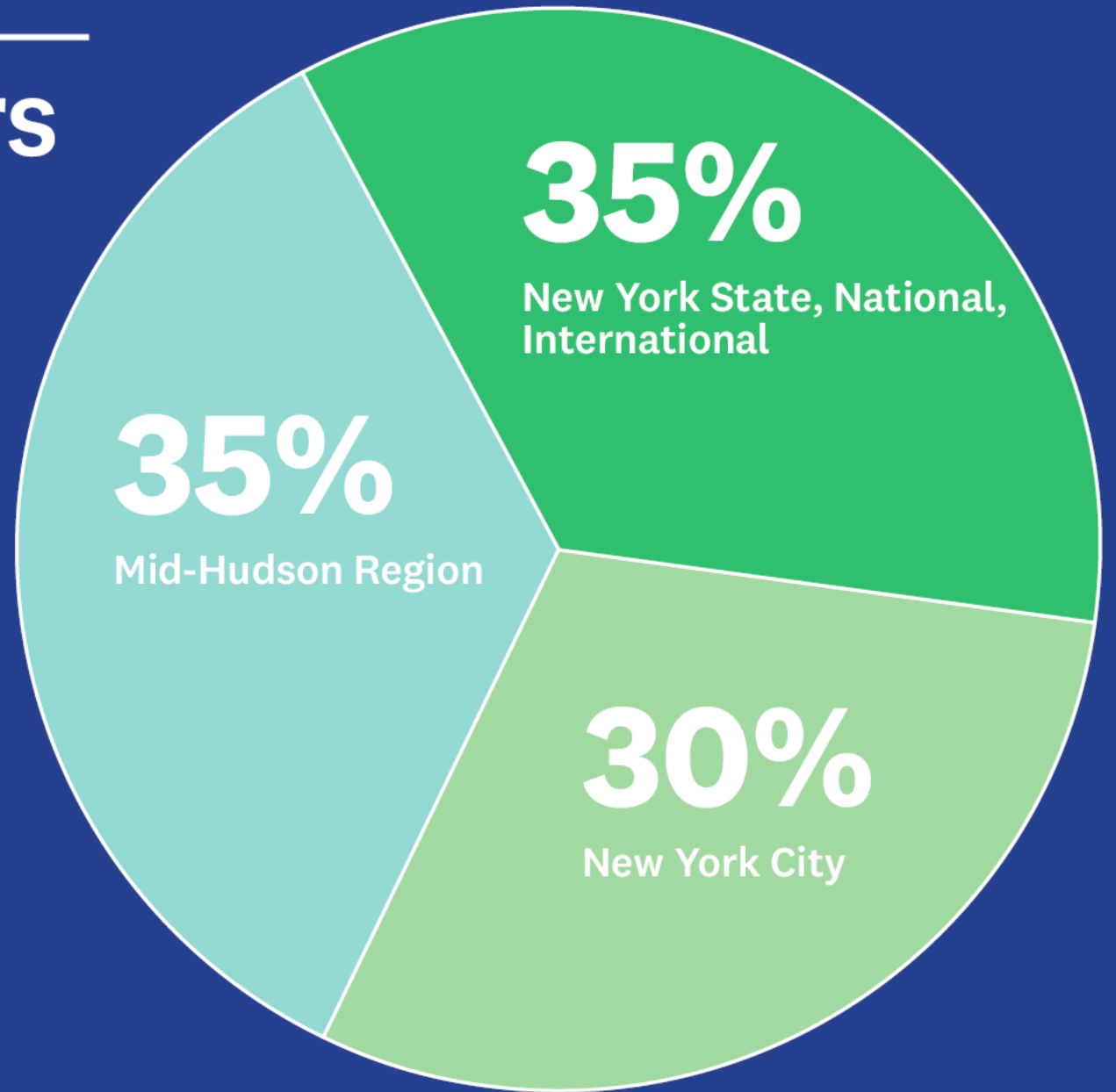
# Storm King Members



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**3,700**

at present

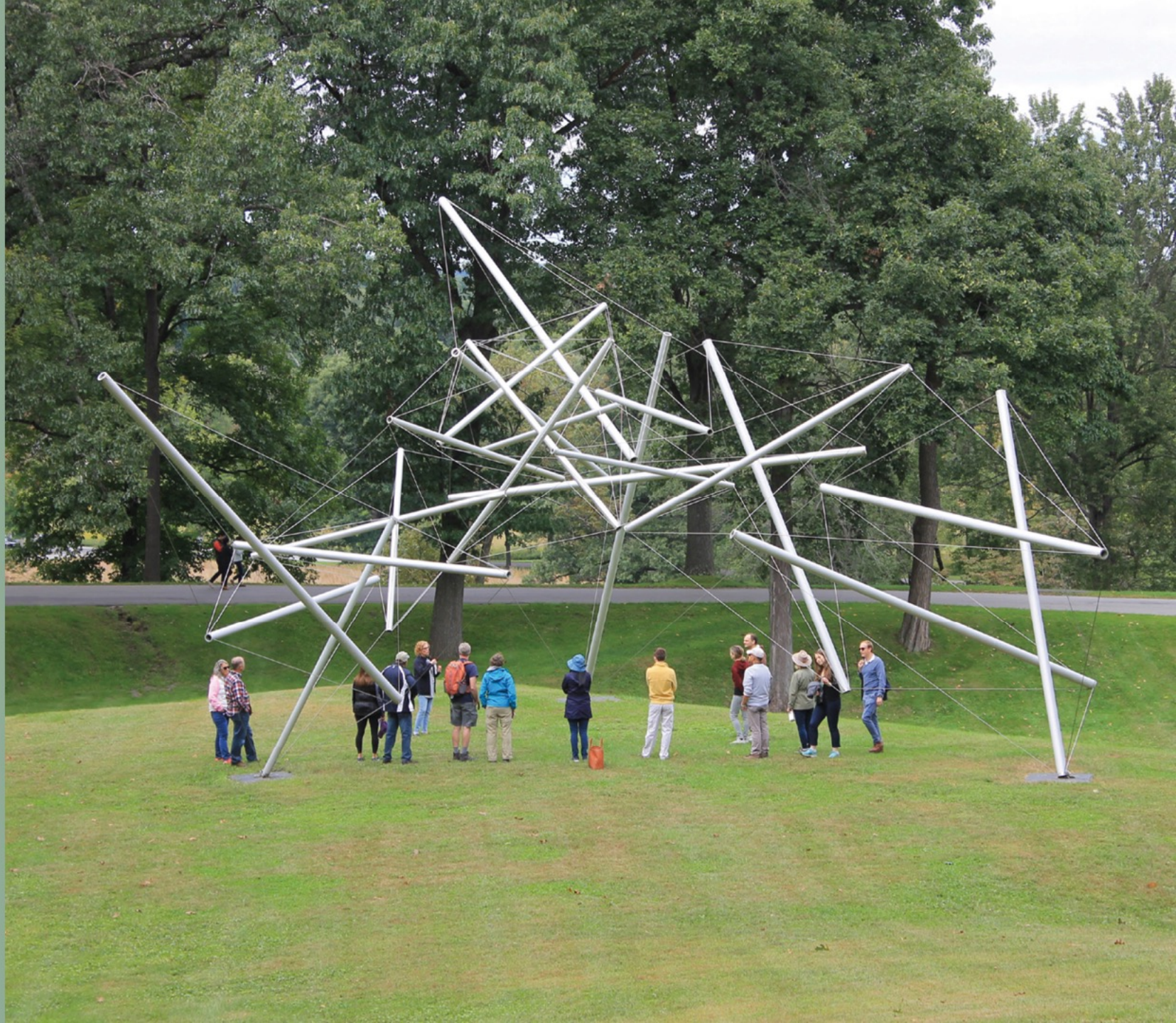




# Work

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One of the “6 Best Public Sculpture Parks to Visit This Spring and Summer”  
—*Architectural Digest*  
(May 2021)





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# 2018 Economic Impact Study



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**\$8.5M**

visitor spending in region



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**142**

regional jobs supported due  
to Storm King visitation



# Play

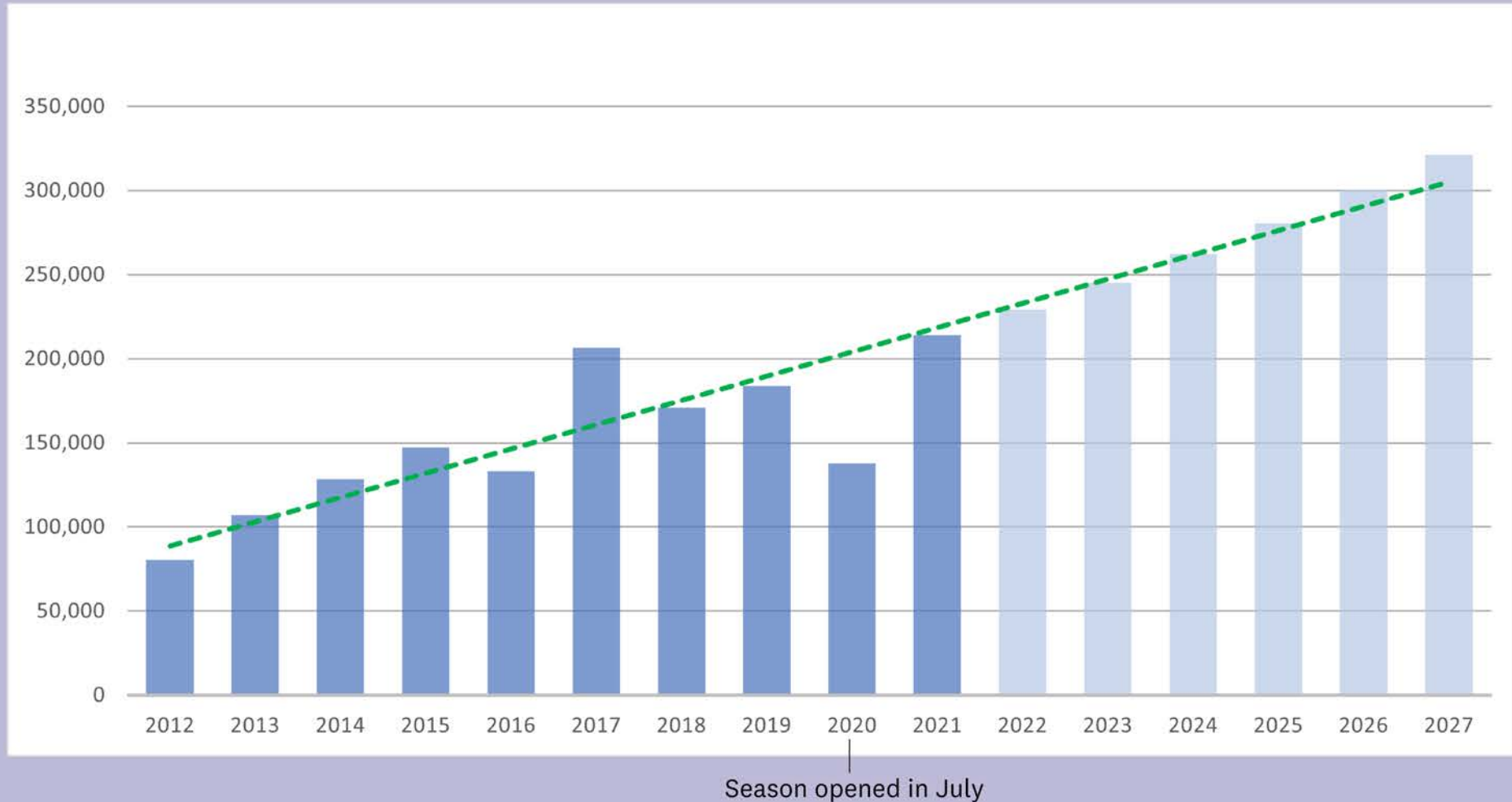
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“Storm King Art Center in New Windsor is a must visit...for bringing wows at every turn with its large-scale works and breathtaking views.”  
—*The Washington Post* (April 2021)





# Attendance Projections











Peak weekend overflow parking





Enhance the Visitor  
Experience

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Advance Our Leadership  
in the Field of Art in Nature

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Protect our Art,  
Landscape, and People

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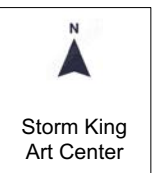
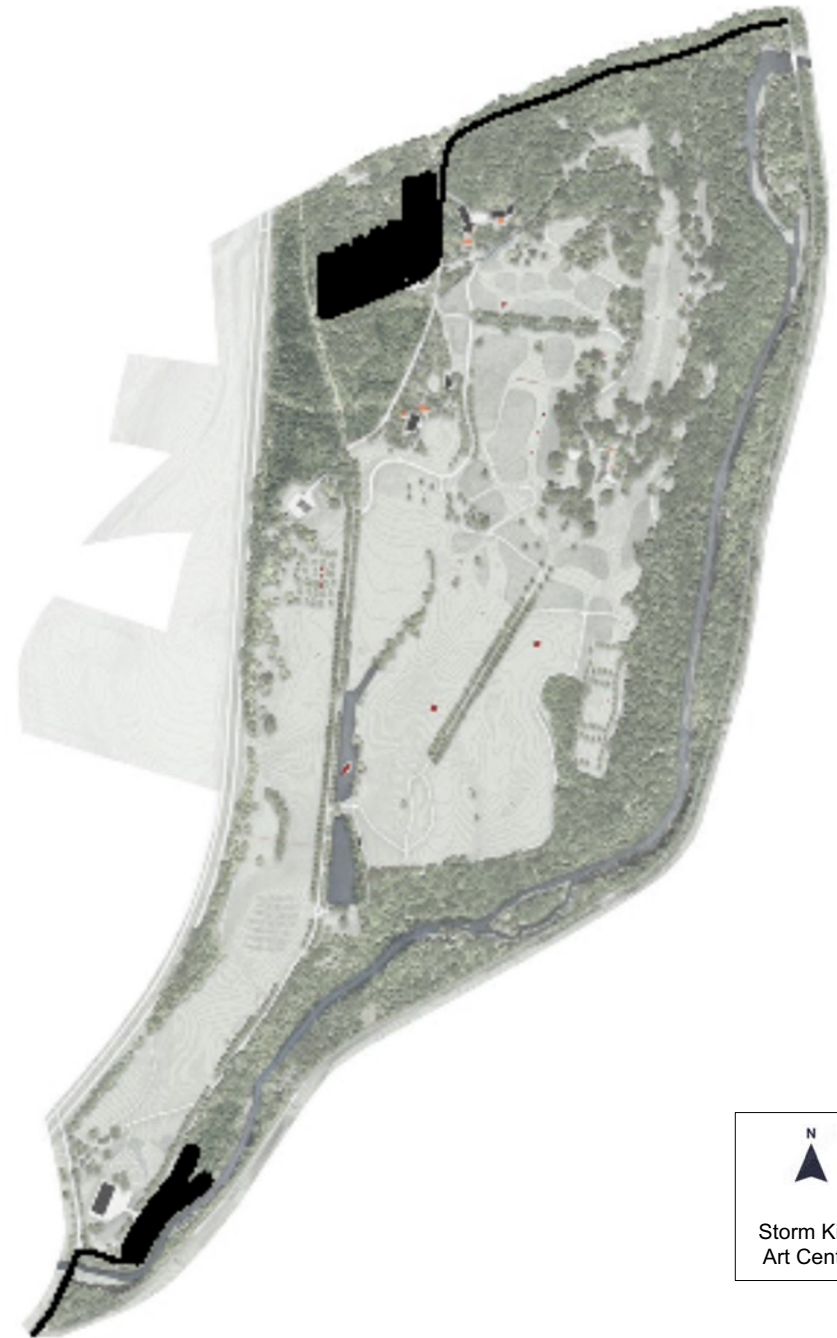




**Remove traffic from the visitor experience** by locating parking and service-intensive uses at the site's edge.

**Activate the whole site** by expanding activities and amenities to the south.

**Create new opportunities for art** by returning land to landscape.







WELCOME SEQUENCE

NEW LAND FOR ART

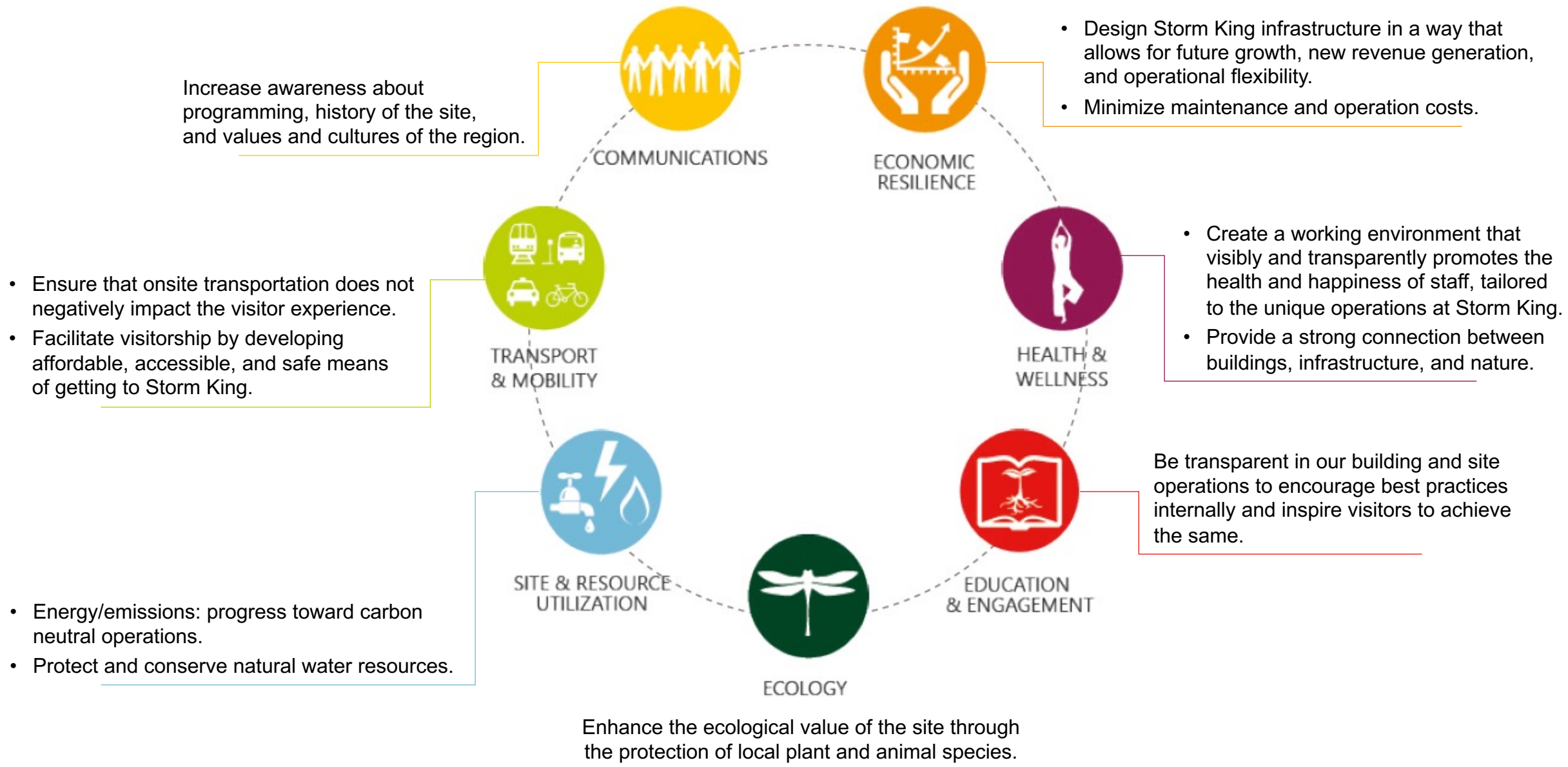


CONSERVATION, FABRICATION,  
AND MAINTENANCE BUILDING





# SUSTAINABILITY FRAMEWORK

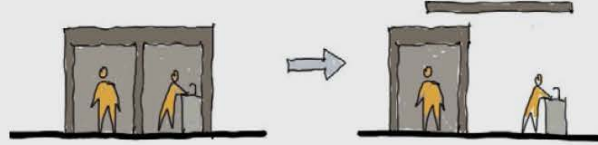




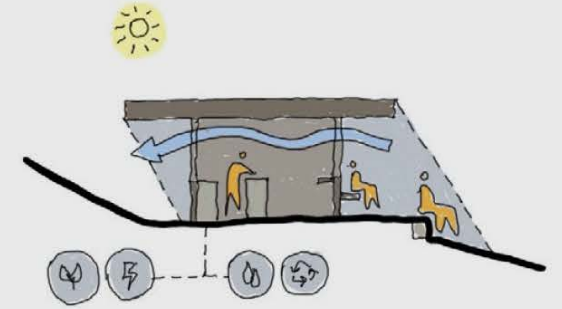
# SUSTAINABILITY PRINCIPLES



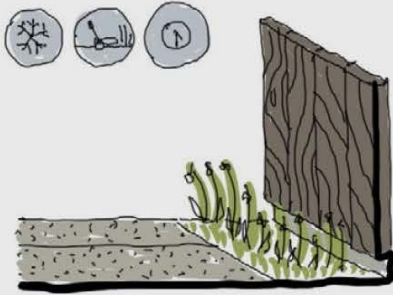
1. **Create Comfortable & Accessible Outdoor Experiences**



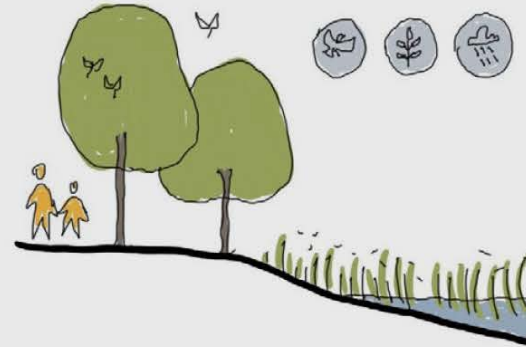
2. **Build Only What is Necessary**



3. **Design for Efficiency**



4. **Use Sustainable & Durable Materials**



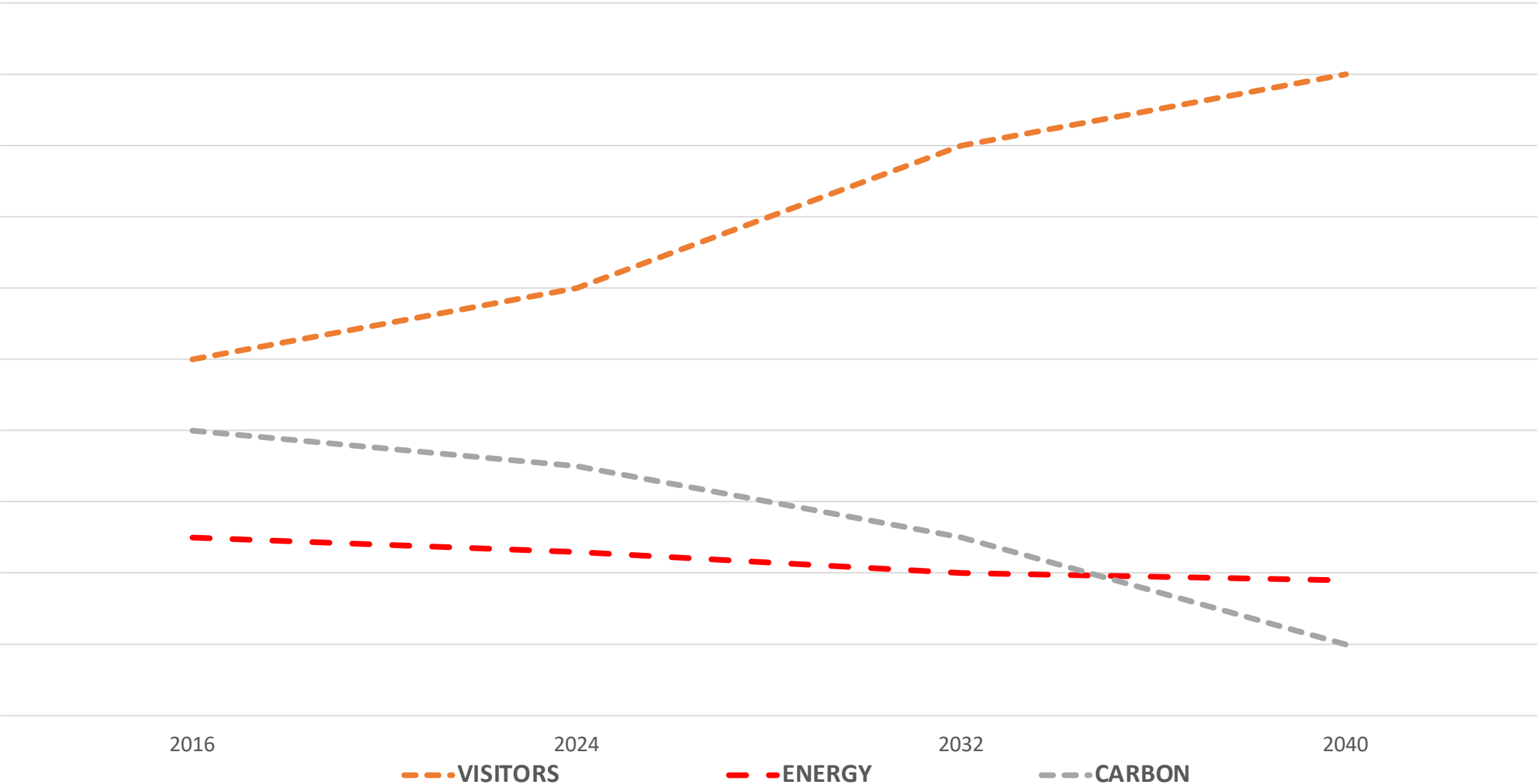
5. **Support Biodiversity & Site Hydrology**



6. **Enhance Storm King Mobility**



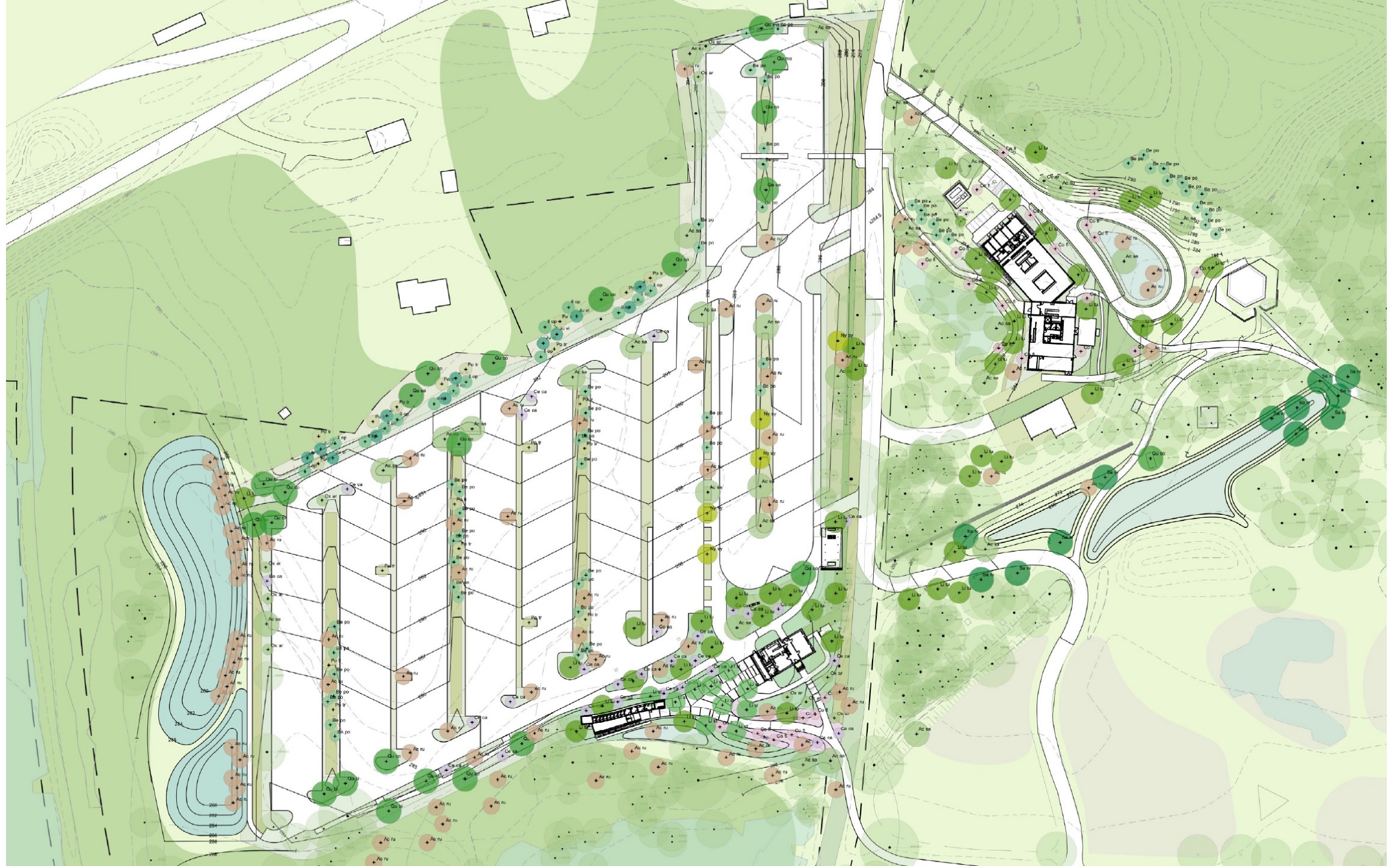
# STORM KING GROWTH PROJECTIONS



























Walking into landscape for art

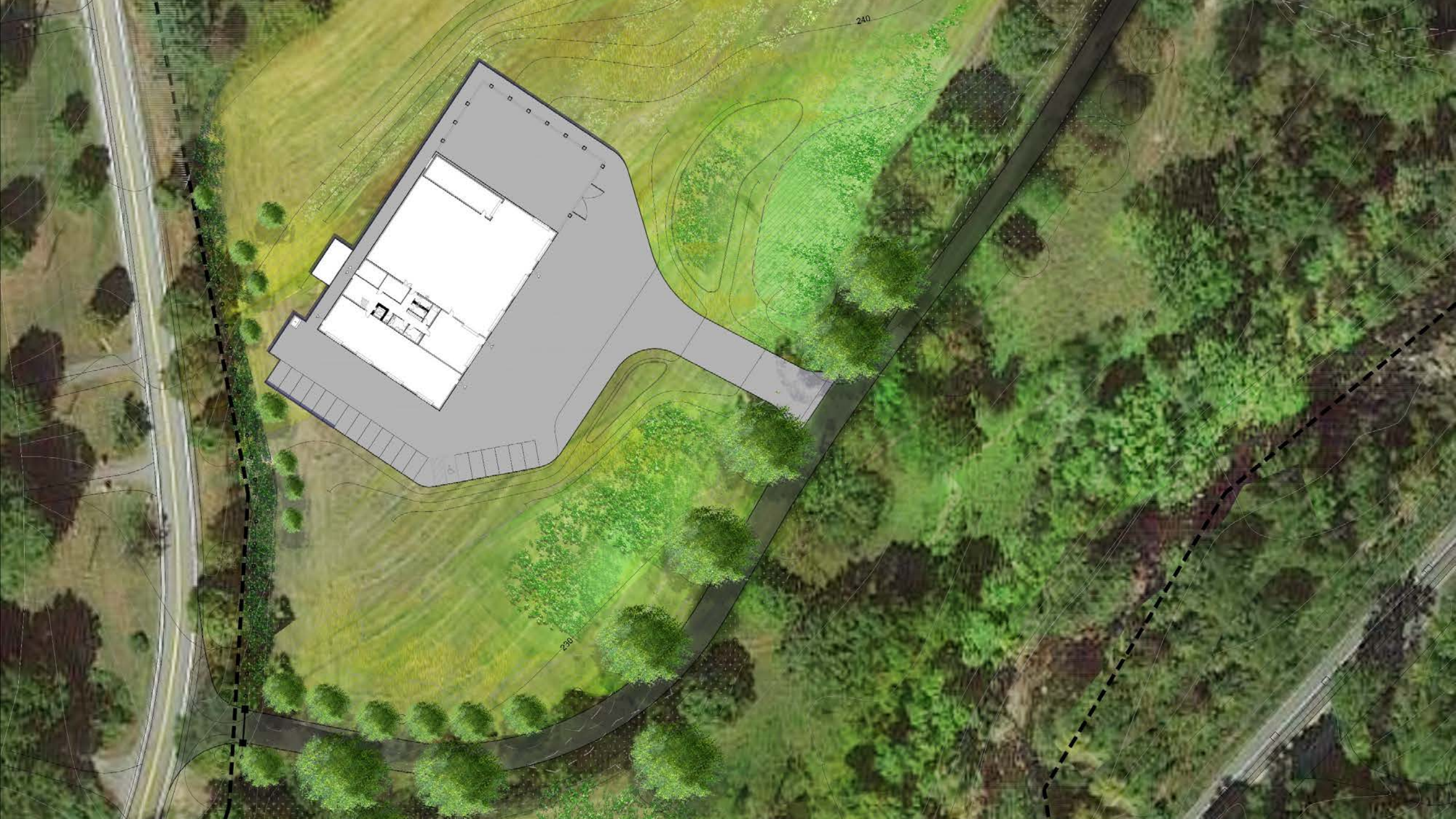






























## STORM KING ART CENTER

### ENVOIE PROJECTS

Owner's Representation/  
Project Management

### WHITING-TURNER CONTRACTING COMPANY

Construction Management

### HENEGHAN PENG ARCHITECTS

Architecture

### WXY ARCHITECTURE + URBAN DESIGN

Architecture

### GUSTAFSON PORTER + BOWMAN

Landscape Architecture

### REED HILDERBRAND

Landscape Architecture

## Engineers

### ARUP

Structural Engineering,  
Lighting Design

### BURO HAPPOLD

MEP, IT, Fire Safety  
Engineering, Sustainability  
Consulting

### TECTONIC

Geotechnical Engineering

### VHB

Civil/Site, Wetlands,  
Transportation

### GREEN SHIELD ECOLOGY

Ecology

## Specialty Consultants

### C&G PARTNERS

Signage, Wayfinding,  
and Mapping

### FRONT, INC.

Façade Consultant

### LSTN

Acoustics and Audiovisual

## Approvals

### NELSON POPE VOORHIS

Planning





Thank you!





**be  
ex**

**building  
energy  
exchange**

**discuss.**

***Moderator***

**Ellen Zielinski, Vice President of Strategy Development, K02 Consulting**

***Speakers***

- **Adam Yarinsky, Principal, ARO**
- **Ben Fain, Owner & CEO, West Bridge Street Holdings LLC**
- **Amy Weisser, Deputy Director, Strategic Planning and Projects, Storm King Arts Center**





be  
ex

thank you.

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building  
energy  
exchange