WE ARE A TEAM of graduate architecture students at the Illinois Institute of Technology. For our thesis project we have chosen to design and develop an affordable and environmentally conscious building for a local community organization - Eden Place Nature Center.

OUR MISSION is to design and build a learning center that embodies the values of Eden Place.

we SHARE the goal of EDEN PLACE...

“To cultivate a passion for environment within the youth of Chicago.”
To COMPLETE our MASTER OF ARCHITECTURE program, our team elected to forego the traditional master’s thesis as an individually-selected and driven design project. Instead, we chose to embark on the first design/build studio for graduate students at IIT.

With a mixture of talents and experience both in design and construction, it will be a truly collaborative effort to see this project realized. We believe in working as a team in a real-life architectural design project will be an invaluable experience to start our professional careers as architects.

ALL CONSTRUCTION will be done by our team. Parts of the Nature Studio will be constructed on site at Eden Place, such as the concrete foundation and walls, while other components will be prefabricated at the workshop facility at IIT. This process will increase the efficiency and reduce the timeline for construction.

Led with the expertise of Professor Frank Flury, we as graduate students hope to increase our fundamental and practical knowledge of building construction. This experience can only increase our respect for the building process, understanding of building methods, and allow us to build a beautiful piece of architecture that we can all call our own.
EDEN PLACE NA TURE CENTER is located in the Fuller Park neighborhood on Chicago’s South Side. The nature center was founded in 1997 by local resident Michael Howard after discovering that his neighborhood had the highest levels of lead contamination in Chicago. After three years and over 200 tons of waste removal, Eden Place was given the Conservation and Native Landscaping Award by the US Environmental Protection Agency.

Eden Place hosts field trips from local schools, educational workshops, community events, and a summer youth science program. Additionally, they maintain a farm which includes chickens, geese, a pony, and crops. The site is divided into ecosystems comprised of wetlands, prairie, and woodlands. The prairie land is home to the Illinois site for the international education and habitat restoration project for monarch butterflies.
 Fuller Park

Fuller Park is a long, narrow neighborhood on the south side of Chicago. It spans 15 blocks north and south, and only three blocks east and west. The Dan Ryan Expressway (Interstate 90/94), which forms Fuller Park's eastern border, is buffered from the residential streets by an expanse of greenery and South Wentworth Avenue that parallels the highway and turns into South Wells at West 47th Street.

Historically, Fuller Park has suffered urban challenges. City planners sliced the area in half in 1950 to build the Dan Ryan, virtually dividing the community in two, causing the neighborhood economy plummet paired with a slowdown at the Union Stockyard causing many residents to lose their jobs and eventually closed down 21 years later. By 2000, Fuller Park was becoming desolate as more residents were moving out than coming into the neighborhood.

In recent years, there has been a combined initiative by residents and the city to organize and make some positive changes. The revitalization movement included developing public parkland in the neighborhood and providing recreational opportunities such as tennis, baseball and boxing. Initiatives created much needed green space, which instilled a refreshing sense of renewal. Fuller Park locals have taken action to protect the area’s historic buildings with preservation efforts to maintain the heritage of Queen Anne-style houses and buildings, especially on Wells Street and Princeton Avenue. Additional measures have been taken to make good use of the empty lots with redevelopment.

Despite its challenging past, Fuller Park is in the throes of rebirth, inspired by the neighborhood’s steadfast residents, such as Eden Place founder, Michael Howard, and a strong desire to give this community a fresh start.
DEMOGRAPHICS

FULLER PARK vs. CHICAGO

DENSITY
- Fuller Park: 3,694 people per square mile
- Chicago: 12,750 people per square mile

MEDIAN HOUSEHOLD INCOME
- Fuller Park: $23,561
- Chicago: $45,734

MEDIAN RENT
- Fuller Park: $480
- Chicago: $768

MEDIAN AGE
- Males: Fuller Park: 32.4 years, Chicago: 31.5 years
- Females: Fuller Park: 36.6 years, Chicago: 32.6 years

AVERAGE HOUSEHOLD SIZE
- Fuller Park: 2.7 people, Chicago: 2.7 people

AVERAGE FAMILY SIZE
- Fuller Park: 3.6 members, Chicago: 3.5 members

POVERTY
- Fuller Park: 34.0% population below poverty level
- Chicago: 19.6% population below poverty level

EDUCATION

POPULATION % IN K-12 SCHOOLS
- Fuller Park: 23.7%
- Chicago: 20.1%

POPULATION % IN K-12 PUBLIC SCHOOLS
- Fuller Park: 3.4%
- Chicago: 16.7%

POPULATION % IN UNDERGRADUATE COLLEGES
- Fuller Park: 2.9%
- Chicago: 5.6%

POPULATION % IN GRADUATE/PROFESSIONAL SCHOOLS
- Fuller Park: 0.9%
- Chicago: 2.0%

ETHNICITY
- African-American
- Hispanic
- Other

... a need to improve education in FULLER PARK
WHY does Fuller Park and Eden Place need the NATURE STUDIO???
"The NATURE STUDIO at EDEN PLACE ..."
INCREASE EXISTING PROGRAMS AND ACTIVITIES
PROVIDE A SAFE LEARNING FACILITY
PROMOTE NEIGHBORHOOD PRIDE

DISPLAY OF SUSTAINABLE SYSTEMS AND STRATEGIES
PROMOTE GREEN EDUCATION
INTERACTIVE WITH SURROUNDING HABITATS

"... will embody the values of Eden Place."

"... will serve as a learning tool."

June 21st
Dec. 21st
COMMUNITY GATHERING SPACE
SAFE LEARNING FACILITY
PROMOTE LOCAL OUTREACH
GAIN EXPOSURE ON A LARGER SCALE

EDEN PLACE
FULLER PARK
SCHOOLS
BUSINESS
COMMUNITIES

“...will enhance the urban experience

SHARED EDUCATIONAL EXPERIENCE
MORE THAN JUST A BUILDING
BEAUTY, CRAFTSMANSHIP, AND PERMANENCE

BEAUTY, CRAFTSMANSHIP, AND PERMANENCE
PAST DESIGN/BUILD STUDIO PROJECTS
LED BY PROFESSOR FRANK FLURY

“...will showcase beauty and quality construction.”
LOW MAINTENANCE COST  
MINIMAL ENERGY USE  
FUNDING BY DONATIONS

PRIVATE DONORS  
SPONSORSHIP  
MATERIAL + TRADE DONATIONS

SUSTAINABLE STRATEGIES  
PASSIVE HOUSE  
DESIGNED DURABILITY

REDUCE OPERATING + ENERGY COSTS  
INCREASE EDEN PLACE SUPPORT

NATURE STUDIO ENDOWMENT

GOALS + PRINCIPLES

"...will be affordable."

The Nature Studio will embody the values of Eden Place.*
- The nature studio will provide a doorway to the world of nature and a community green space for Chicago.
- It will provide a safe, quality learning space that can be used year-round for Chicago youth that cultivates a relationship to nature.
- Design will be driven by its relationship to the site and preservation of the surrounding habitats created by Eden Place.

The Nature Studio will serve as a learning tool.*
- The nature studio will be the first Passive House certified building in the city of Chicago.
- The building will implement systems and materials through visual exposure that are sensitive to the surrounding ecosystems and energy dependencies.

The Nature Studio will enhance the urban experience.*
- The nature studio will further extend the following of Eden Place and reaffirm it as a point of positive interest in Chicago.
- The building will engage the existing context and landscape, highlighting the architecture, wildlife, natural elements, and people.
- The nature studio will create a space for different community and interest groups for involvement, interaction, and growth.
- The nature studio will engage the community as a place for neighborhood identity and pride.

The Nature Studio will showcase beauty and quality construction.*
- We will gain a higher understanding of the architecture profession by taking on the responsibilities of all aspects of the design and building phases.
- The building will showcase our construction understanding and learning.
- We will develop a language of details that are architecturally significant but simple to build and implement.

The Nature Studio will be affordable.*
- The funding for the building will come from financial donations and gifts-in-kind.
- The nature studio will maximize efficiency of space and minimize operating and maintenance costs for Eden Place.
- The design will implement value engineering.

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CLIENT
Eden Place Nature Center

COMMUNITY
Fuller Park Community Development Corp
Board of Directors
Michael Howard: Eden Place president and owner
Eden Place staff and volunteers
Fuller Park neighbors, businesses, employees

MUNICIPAL
Alderman Pat Dowell
3rd Ward constituents
Public works employees
Local law enforcement
City of Chicago Zoning and Permit departments
City of Chicago code officials
City of Chicago elected representatives
Chicago Park District
Mayor Rahm Emanuel
State of Illinois elected officials

DESIGN PROFESSIONALS
Project selected certified architect
Project selected certified engineers
Project selected certified subcontractors
Professor Frank Flury

FINANCE
Project donors
Fundraising advisor Paul Klinger

ILLINOIS INSTITUTE OF TECHNOLOGY
IIT President John Anderson
Gene Harting, IIT Public Relations
Gerry Kennedy, IIT Community Affairs and Outreach Program
IIT College of Architecture
Dean Donna Robertson
Kate Fitzgerald, Director of Graduate Academic Affairs
Dirk Denison, Thesis Director
College of Architecture faculty
FUNDRAISING STRATEGIES:
- KICKSTARTER PROGRAM
- SOCIAL MEDIA CAMPAIGN
- PAYPAL Widget
- TENTATIVE MATERIAL DONATIONS OF WALLS AND CONCRETE
- VERBAL COMMITMENT TO WAIVE PERMITTING FEES

OUR GOAL:
- HIGH-PERFORMANCE BUILDING
- ENDOWMENT FUND FOR OPERATIONS AND MAINTENANCE

FUNDING

$100,000

30%
- AGGRESSIVE FUNDRAISING
- PRE-CONSTRUCTION

30%
- FREE LABOR
- QUALITY CONSTRUCTION

40%
- CORPORATE DONORS
- LOW ENERGY COST
- MINIMIZE OPERATING/MAINTENANCE COST
- INCREASE LIFESPAN
- ENDOWMENT FUND
- SECURE LEGACY

$30,000

$30,000

$40,000

$100,000
The Passive House is today’s highest energy standard with the promise of reducing the heating energy consumption of buildings by 90%. A Passive House is a well-insulated, virtually air-tight building that is primarily heated by passive solar gain and by internal gains from people and electrical equipment. Energy losses are minimized, and any remaining heat demand is provided by small source, such as a space heater. Excessive heat gain is averted through shading and window orientation to minimize the cooling load. An energy recovery ventilator provides a constant, balanced fresh air supply for a good indoor air quality.

A Passive House is a comprehensive system. “Passive” describes well this system’s underlying receptivity and retention capacity. Free solar energy is captured and applied efficiently instead of relying predominantly on “active” systems to bring a building to zero energy. High performance triple-glazed windows, super-insulation, an airtight building envelope, limitation of thermal bridging and balanced energy recovery ventilation make extraordinary reductions in energy use and carbon emission possible.

Eden Place is a non-profit organization. The last thing they need is a building that will not function well and cost them an excessive amount of money to operate and maintain.

Eden Place can use the Nature Studio as a physical demonstration of quality sustainable building to spread knowledge of Passive House technology.

The Nature Studio will be the... FIRST PASSIVE HOUSE CERTIFIED building in the city of CHICAGO.
Define enclosure, entrance, and facades while engaging context in regards to scale, nature, and materials.

Simplistic material palette absorbs the dynamic environment and projects outward as well as within.

Flexible function and form with relation to time of day, occupancy, and outdoor climate.
OPERABLE OPENINGS TO CREATE MULTIPURPOSE INDOOR/OUTDOOR SPACES, ALLOWING TRANSFER OF PEOPLE, AIR, AND LIGHT.

Frames and planes that move to utilize whole and void for new space and use.

BEACHCROFT ORTH RESIDENCE
Architect: Andrew Maynard Architects
Location: Melbourne, Australia
Date: 2009
Size: unknown

PEPPING FARM
Architect: 70F Architecture
Location: Almere, Netherlands
Date: 2005
Size: 126 m²

Operable pieces paired with clean-line facade materials create new volumes and textures.
Incorporating storage as an architectural element to maximize square footage within a small footprint and provide functional vertical space.

Necessary storage can act as the texture and structure of space.

Storage serves a programmatic function and a portal for light and vistas.

**INSPIRATION**

**MUSASHINO ART UNIVERSITY MUSEUM + LIBRARY**
Architect: Sou Fujimoto
Location: Tokyo, Japan
Date: 2010
Size: 2883 sqm

**SPROS HOUSE**
Architect: Visiondivision
Location: Sweden
Date: 2010
Size: unknown
SITE EDEN PLACE NATURE CENTER
44 1 7 S STUART AVE
CHICAGO, IL

FULLER PARK PRESERVE EXISTING NATURAL ELEMENTS
UTILIZE CURRENT CIRCULATION PATHS
MAINTAIN PRIMARY SIGHTLINES
ACCESS TO UTILITIES, SERVICE, AND PARKING
ENGAGE WITH EXSITING EDEN PLACE PROGRAM
QUALITY SOUTHERN SUN EXPOSURE
FOLLOW SETBACK REQUIREMENTS

MAIN ENTRANCE
KIDS’ CAMP
NATURE STUDIO
WIGWAM
PRAIRIE GRASSES
BUTTERFLY HABITAT
GREENHOUSE
STORAGE SHED
SOLAR BUS
CARPORT
GARDEN/GREAT LAWN
ANIMAL SHELS
ADMINISTRATIVE BUILDING
GARDEN
WETLANDS
ALLEY ACCESS
STEWART AVE
SHIELDS AVE
44TH PLACE
43RD PLACE

SITE CRITERIA
EXISTING ZONING MAP

RS-3M 1-2
C 1-1 PD-54
B3-1
RS-3

ZONING: RS-3

EXISTING ZONING MAP

ASSEMBLY vs. SCHOOL

REQUIRES SPECIAL ZONING VARIANCE
TIMELINE: 30-60 DAYS
LESS CODE RESTRICTIONS
PROGRAM USE IS FLEXIBLE

PERMITTED WITH EXISTING ZONING RS-3
STANDARD ZONING/PERMITTING PROCESS
MINIMIZED TIMELINE
MORE CODE RESTRICTIONS
PROGRAM USE RESTRICTED TO EDUCATIONAL
Eden Place is bound by an alley, two one-way dead-end streets, and Steward Avenue, which is currently not a through street. Eden Place houses several facilities such as the animal barns and greenhouses. The alley will still serve as a through-way north and south directions, with an inlet on the north side for Nature Studio entrance and parking.

The Nature Studio must maintain clear access around the site to the other facilities and program. The primary circulation will revolve around the existing prairie habitat areas.
The Nature Studio will take advantage of the southern exposure in its solar strategies for design. There are large deciduous trees west and north of the building site to provide shading in the summer but will allow solar gain in the winter.

The Nature Studio has the opportunity to have 180-degree views to the south across the beautiful prairie grasses and butterfly habitat. It is also visually connected to all other program on site, including the primary north entrance.
“WELCOME to EDEN PLACE”

“CLASSROOM in the PRAIRIE”