

**Architecture**

Building shape directly inspired by the purpose of our project: to provide resources to our surrounding community and to help those coming out of the criminal justice system. The bridge that spans between the two towers symbolizes these efforts. The soft curves intentionally contrast the rectilinear facade of the newly constructed Marion County Community Justice Campus located across the street.

**Engineering**

Decisions concerning HVAC were guided by research specific to our location and the opportunities it provides. This site is a prime candidate for a ground source heat pump system. This highly efficient system is paired with a direct outside air system for ventilation.

PV and BIPV arrays will allow our design to generate at least as much energy as it uses annually.

Nue Aire will employ a heavy-duty raised floor system. This system provides lateral resistance to rolling and seismic loads while also concealing mechanical, electrical, and plumbing.

**Market Analysis**

The Twin Aire area in Indianapolis, Indiana is considered ripe for development according to *Great Places 2020*. This report also highlights demand for retail, law and criminal defense firms, and other office spaces.

**Durability & Resilience**

Carefully considered indigenous flora will be used throughout the site. These plants are known for their ability to clean the air, soil, and water. Low maintenance prairie grasses and other forms of groundcover will use fewer fossil fuels for maintenance and they prevent erosion.

Material considerations for our interiors has been limited to primarily reclaimed and recycled goods.

**Embodied Environmental Impact**

Nue Aire reduces its overall carbon footprint by using mass timber as a key structural component. The mass timber needed for our project can be sourced regionally with one of the largest distributors located less than 400 miles away from our site.

**Integrated Performance**

There is no one system or feature that stands alone in our design. Each and every design decision is intertwined. The raised floor system is a good example. It provides an easily accessible space for all of our mechanical, electrical, and plumbing needs. The raised floor also drastically improves the acoustical qualities of each space.

**Occupant Experience**

Quiet and acoustically-independent work spaces help occupants focus and protects privacy.

A well-lit office is a more productive office. Daylight sensors can conserve energy and reduce fatigue.

**Comfort & Environmental Quality**

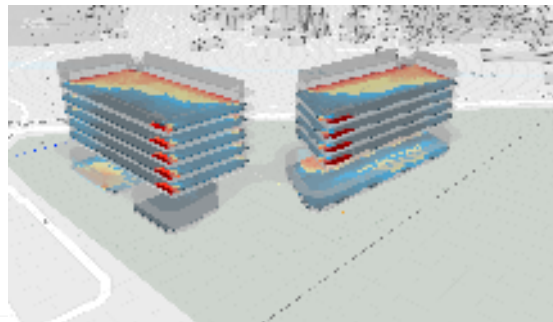
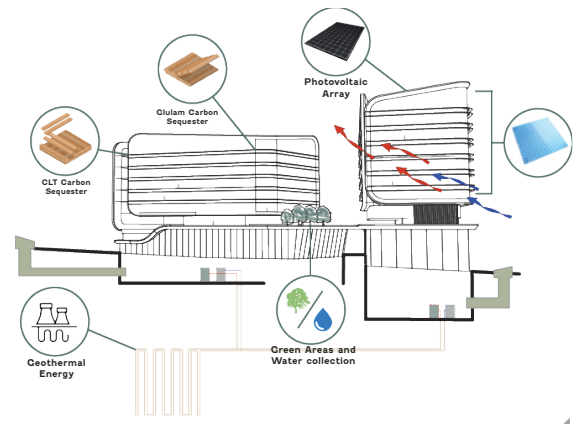
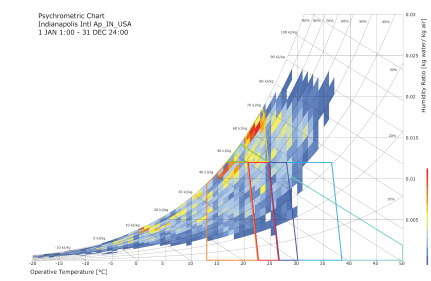
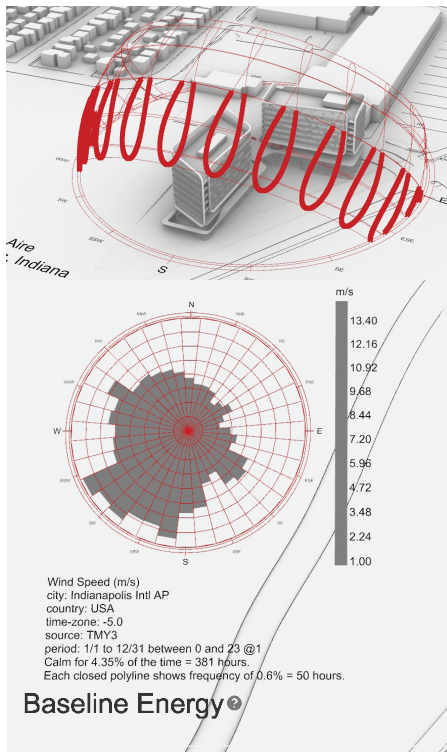
Daylight sensors keep interiors illuminated to appropriate levels and in the appropriate color temperature ranges. This is accomplished by using artificial circadian lighting that adjusts the LED light's color temperature throughout the day.

**Energy Performance**

Nue Aire incorporates multiple passive design systems. The orientation of the building and proper shading devices greatly reduce heating and cooling loads. The GSHP, PV, and BIPV all offer opportunities for surplus energy. Even less obvious items like rain water and site drainage can help reduce our building's energy consumption.

**NUE AIRE**





## Baseline Energy

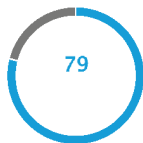
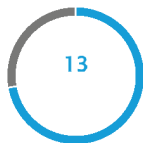
Proposed Whole Baseline EUI

LEED Points - EAc2 Credit

CO2 Reduction %

Benchmarking Energy

Proposed Whole Baseline EUI Breakdown

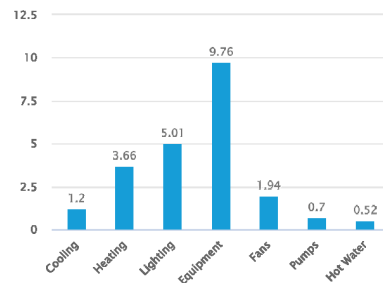


Office 22.79 kBTU/ft²/yr

Electricity \$234172.04 /yr  
 Gas \$0 /yr

2030 Baseline Emissions 7712.6 Tonne CO2e/yr  
 1618.3 Tonne CO2e/yr  
 You Saved 914 Trucks of CO2e/yr

YOUR EUI 22.79  
 2030 TARGET 21.72



### Cooling

Your cooling load is not dominating your energy use. This is because your HDD are higher than your CDD days.

### Heating

Your heating load is not dominating your energy use. This makes sense - although your HDD days are higher than your CDD, the Equipment load is dominating the calculation. Look under the Usage and Schedules tab in the Engineering Inputs.

### Lighting

Your lighting load contributes to 21.99% of the total EUI. You can reduce your lighting load by reducing your lighting power density and having daylight and occupancy sensors in the Engineering Inputs.

### Equipment

Your equipment load is dominating your energy use. You can reduce your equipment load by reducing your appliance power density.

### Hot Water

Your hot water load contributes to 2.28% of the total EUI. You can reduce your hot water load by reducing your domestic hot water demand and using a more efficient hot water generation system in Engineering Inputs.

### Fans

Your fan load contributes to 8.51% of the total EUI. You can reduce your fan energy by switching your fan flow control accordingly in the Engineering Inputs. Total Outdoor Air for the project is 34752.08 CFM.

### Pumps

Your pump load contributes to 3.07% of the total EUI. You can reduce your pump energy by adjusting pump control for cooling/heating in the Engineering Inputs.

## COST VS ENERGY OPTIMIZATION

### BUNDLES

Whole Building Baseline	Whole Building Optimized
\$15,348,628	\$73,062
COST FOR SELECTED OPTIONS	COST FOR SELECTED OPTIONS
23 kBTU/ft²/yr EUI	22 kBTU/ft²/yr EUI

Office	Cost Premium	Payback (years)	Energy Savings	CO2e (Tonnes)	LEED	Roof R-Value	System Type	Ventilation Calculati...	Wall R-Value
\$73,062	19.21	2%	3954.73	CO2e (Tonnes)	13	Corrugated metal roof...	DOAS w/ Radiant, with...	IAQP with Sorbent Air...	Shucco, 2 layers, on ...
Cooling Set-Point	Standard	Daylight Sensors (%)	Sensors: 100%	Glazing U-Value	Operable window, type...	Heating Set-Point	Standard	Occupancy Sensors (%)	Sensors: 100%

**NUE AIRE**