

aia
2030
commitment

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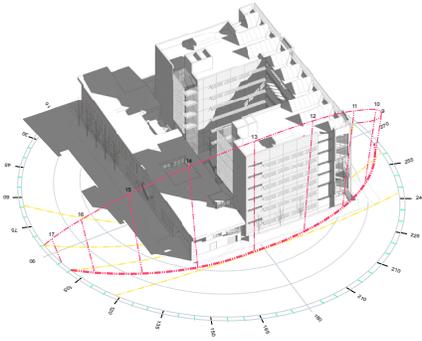
Commitment to Sustainability

NAC|Architecture embraces environmental responsibility as the essence of what it means to be effective architects, conscientious world citizens and worthy contributors to the built environment. Sustainable design has been a topic of discussion and practice at NAC since the early 1970s when its concepts were expressed as alternative energy, appropriate technology, environmental design or energy conservation. Environmentally responsible design should never be seen as an option disconnected from the general practice of architecture. It is critical to achieving excellence and value in the the architecture of any era. To that end, we at NAC|Architecture are committed to proactive and informed leadership in the pursuit of design solutions that will sustain the quality of life for ourselves, others and future generations.



Scope of NAC Sustainability Action Plan

NAC|Architecture's Sustainability Action Plan serves as a tool to document and communicate our dedication to environmental responsibility. It is also an integral part of our pledge to the AIA 2030 Commitment. This is a living document that will evolve with continual improvements in pursuing sustainability in our practice.



Context: The 2030 Challenge and AIA 2030 Commitment

According to the U.S. Energy Information Administration, the Building Sector consumes 49% of all energy produced in the United States. Globally, the Building Sector was responsible for nearly half (46.9%) of U.S. CO₂ emissions in 2009, making it the largest contributor to climate change.

In 2002, architect Ed Mazria established the non-profit, Architecture 2030, to rapidly transform the global building sector from the major contributor of greenhouse gas emissions to a central part of the solution to climate change. Their 2030 Challenge asks firms to commit to achieving reductions in fossil fuel energy consumption, as follows:

- 50% in 2002**
- 60% in 2010**
- 70% in 2015**
- 80% in 2020**
- 90% in 2025**
- 100% in 2030 (carbon-neutral)**

The American Institute of Architects (AIA) recognized the importance of this effort, first launching the AIA Position Statement on Sustainable Practice and then, in 2006, the AIA 2030 Commitment. From the AIA 2030 Commitment website:

“As architects, we understand the need to exercise leadership in our role in creating the built environment. Consequently, we believe we must alter our profession’s actions and encourage our clients and the entire design and construction industry to join with us to change the course of the planet’s future.”

Raising public awareness, understanding the science in the solutions, and empowering people to try new technologies requires leadership and innovation. Therefore, we commit our firms to take a leadership role in reducing the energy consumption in the built environment by adopting the AIA 2030 Commitment.”

Sustainability Team

The team which guides development of NAC|Architecture's sustainability efforts and implementation of our commitment plan is the Sustainability Community of Practice. While each individual in the firm participates in realizing environmental responsibility with our projects, the Sustainability Community of Practice is an internal group focused on researching and promoting continual improvements in our designs to reduce their environmental impact.



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82

of LEED APs on staff

80

% of projects meeting or exceeding third party verified sustainability benchmarks

42

rank among Engineering News Record's Top Green Design Firms in 2011

Staff Training and Education

The Sustainability Community of Practice (COP) provides a vehicle for disseminating NAC's sustainability goals and investigating best practices. In addition, all project staff are encouraged to be LEED accredited and, as of 2010, over 2/3 of staff are LEED accredited and 100% have worked on projects that incorporate sustainability goals and practices.

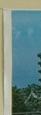
Support for Staff

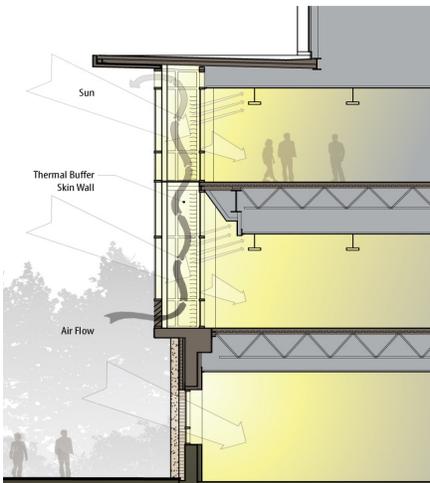
Staff training and education on sustainable design issues is continuous and evolving as sustainable strategies are researched. Daily updates on our intranet site feature information about sustainable projects and quarterly lunch presentations are made by the Sustainability COP to all staff. Staff are supported to attend conferences, seminars and other educational opportunities, both inside and outside the office.

Recognizing Individual and Team Contributions

Individual and team sustainable design contributions are internally recognized and submitted for recognition by the EPA's Designed to Earn program.







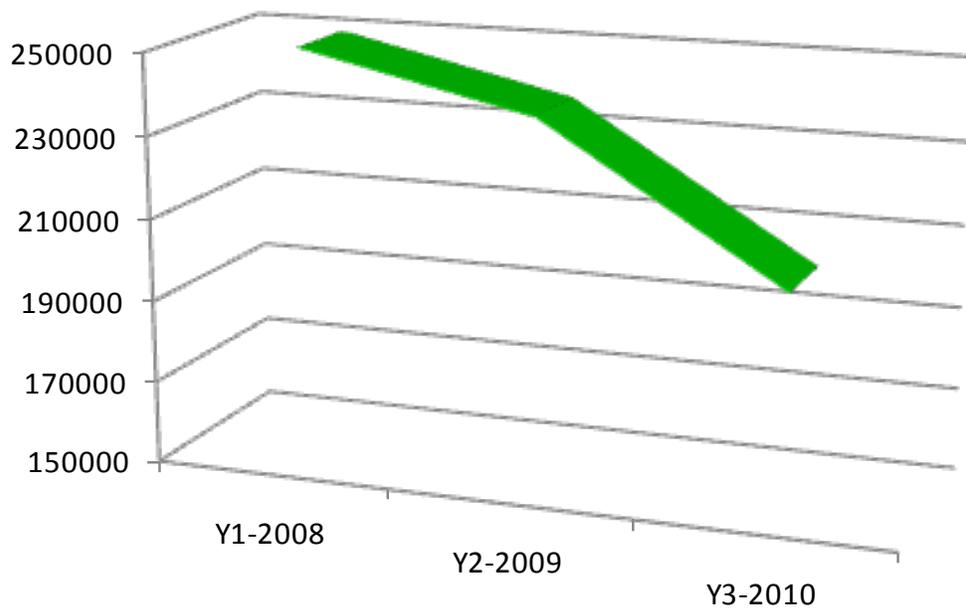
Sustainable Operations

Our offices have implemented many action items to reduce the environmental impact of our internal operations. Many of these are long-standing initiatives which reflect the efforts of individuals as part of our overall firm culture of responsible actions. The leadership of the Sustainability COP continues to monitor, compare, refine and update internal operational standards to keep raising the bar on “walking the talk”. Our Chief Operations Officer ensures that these efforts are coordinated across all offices.

Our list of fully-implemented and partially-implemented action items is available on the AIA 2030 Commitment website. Highlights include:

- + Implemented policy of shutting down computers when leaving the office
- + Replaced all CRT monitors with Energy Star rated LCD monitors
- + Replaced incandescent lamps with fluorescent
- + Reduced paper consumption by using electronic documents and forms and with printing policy to print double-sided as default
- + Implemented policies for purchasing environmentally friendly office supplies, kitchen supplies, cleaning supplies and catering services
- + Instituted in office collection of recyclable hazardous materials such as depleted batteries and fluorescent lamps.
- + Established a policy for fuel-efficient rental cars for firm travel
- + Encourage telecommuting options for employees
- + Encourage meeting participants to coordinate travel plans and share rides to and from the airport
- + Implemented firmwide videoconferencing and web-enabled meetings to reduce air travel

Reduction in Paper Use via Sustainability Policies

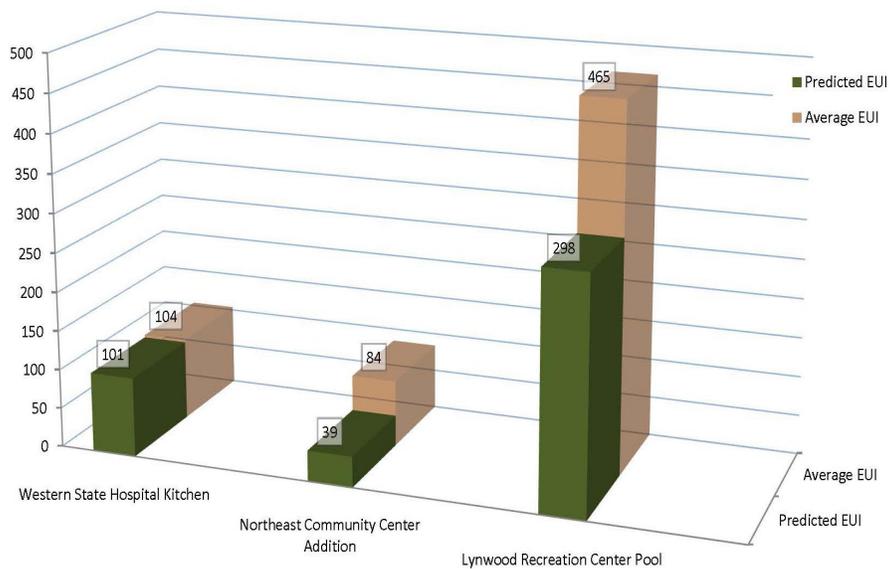


Business Strategy



The business case for achieving sustained value is clear in any human undertaking. Low total cost of ownership, healthy environments, long term practical and aesthetic value and conservation of resources are all marks of sustainability and we regard them as common goals shared by any architect and client. In order to open a conversation with potential clients, NAC collects sustainable design information and case studies in the firm's marketing database. Sustainability tabs have been added to the firm website to highlight sustainable design features and their benefits. Staff sustainable design accreditations are listed on marketing materials and sustainable benchmarks such as LEED and Energy Star ratings of past projects are included in project profiles. Both educational sustainable design information and many NAC projects illustrating the benefits of designs that have applied environmentally sensitive, sustainable design are fully available to our clients on our website, in our marketing information, and in our daily interactions with our clients.

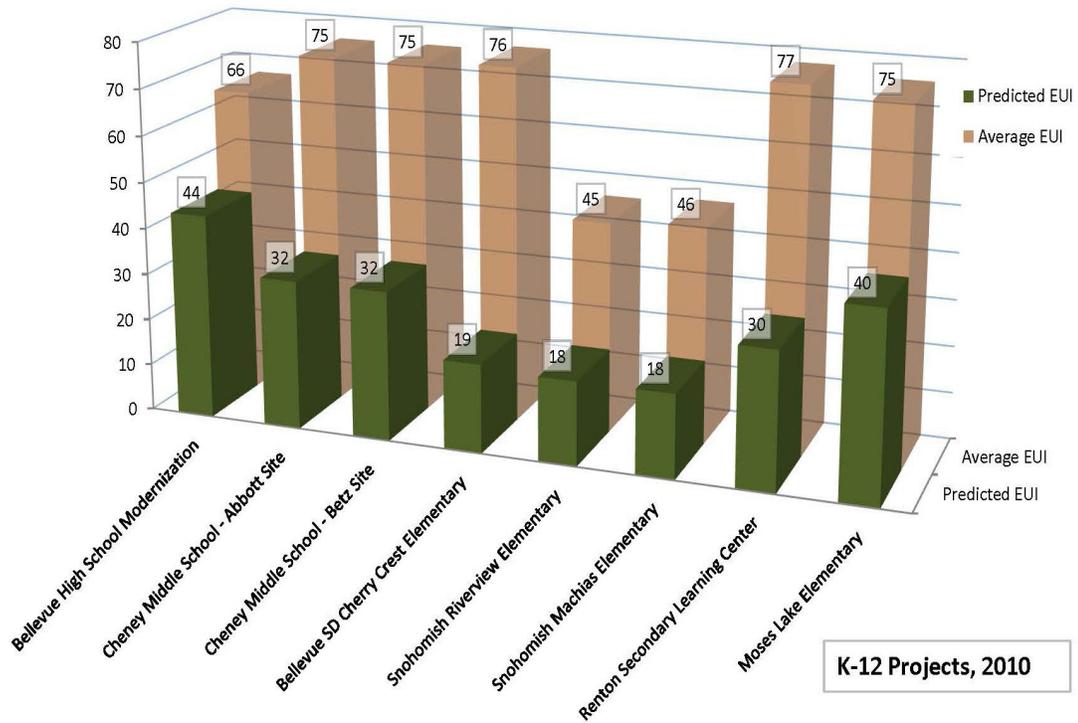
This supports our mission of creating better places for learning, healing and human development. We help our clients, whether school districts, healthcare entities, government agencies or private institutions, see the value of sustainability in their endeavors and operations.



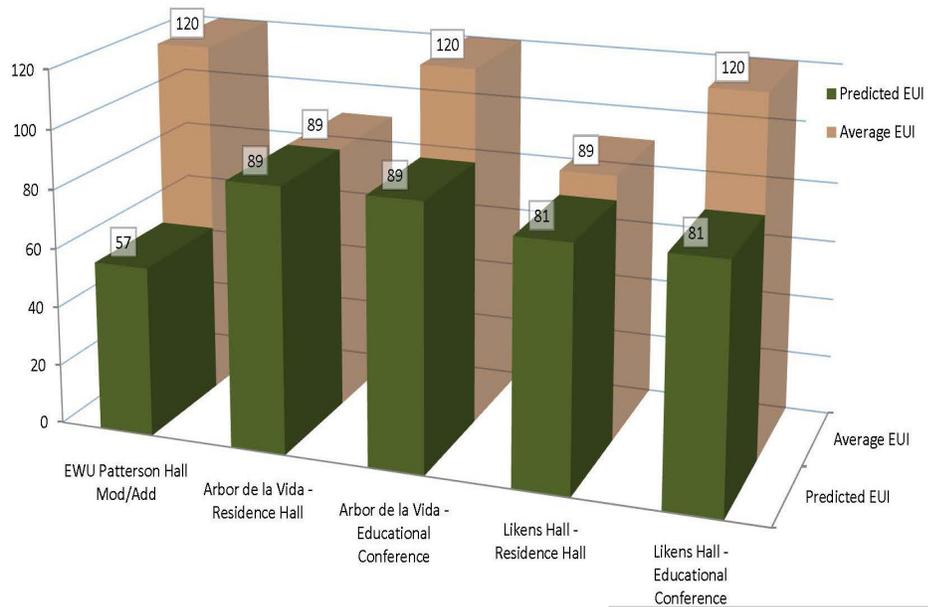
Healthcare/Recreation/Civic Projects, 2010

Reporting Progress

Annual progress toward reducing the designed Energy Use Intensity (EUI) of our projects is reported to the AIA in the first quarter of each year. Additionally, we are tracking the actual energy use of completed projects and comparing the measured results with the designed EUI.



K-12 Projects, 2010



Higher Education Projects, 2010

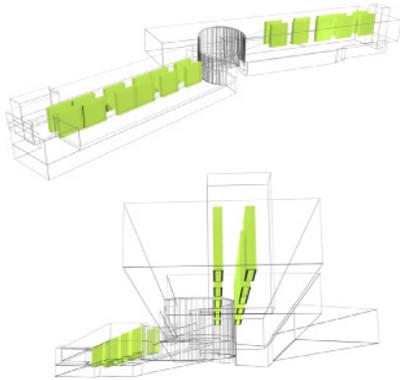




The Design Process

Integrated and Collaborative

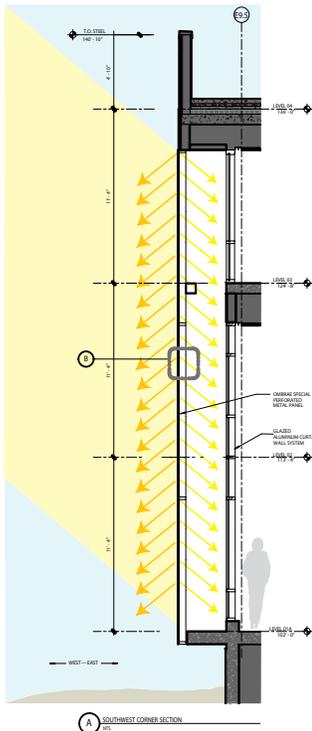
The integrated design process is central to NAC's design methodology. Life-cycle cost analyses are consistently reviewed and used to determine selections of materials and systems. Projects make use of early design meetings and Eco-Charrettes to engage all participants, communicate goals and determine strategies. Sustainable design goals are set early in the project, and opportunities for improving performance are researched throughout design. LEED, WSSP (Washington Sustainable Schools Protocol) and CHPS (Collaborative for High Performance Schools) are used as references in establishing these goals.

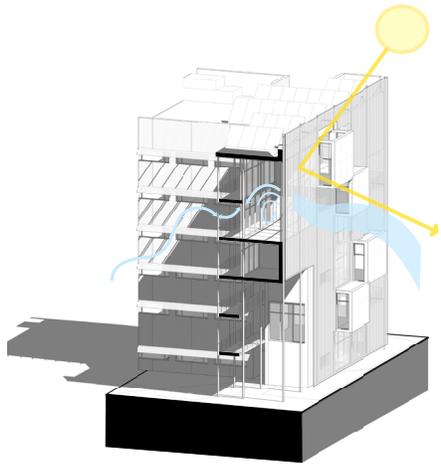


A variety of feedback mechanisms are incorporated in our projects. The Energy Management System collects and tracks information from meters and sensors. Recent projects have incorporated sub-panel electrical meters to provide a finer level of feedback detail. Interactive displays in building lobbies provide occupants direct information about energy use throughout the building, broken down into individual areas, and on-site renewable energy production.

Measurement standards are used to establish goals and compare alternatives. Industry standards are used wherever possible, including:

- + Energy – Energy Use Index (kBTU/sf/year)
- + Footprint – Floor Area Ratio
- + Site Pervious Area – (%)
- + Daylighting – Daylight Factor (%)
- + Irrigation – Maximum Applied Water Allowance (gallons/year and % reduction)
- + Indoor Water Use Reduction (% over baseline per 1992 Energy Policy Act)
- + Recycled Content (% post-consumer and % post-industrial)
- + Renewable Energy (kWh and % of modeled use)
- + Ventilation (CFM/occupant)
- + Acoustic Performance (dBA, STC)





Self Shading Building Strategies - Passive Ventilation, Solar Gain Control

Sustainability Action Plan

While NAC's commitment to sustainability predates the 2030 Challenge, our AIA 2030 Commitment plan consists of distinct actions being undertaken at NAC|Architecture which can be tracked to assess our progress and success over time. These quantifiable design goals are pursued on every project.

Design Strategies

Energy

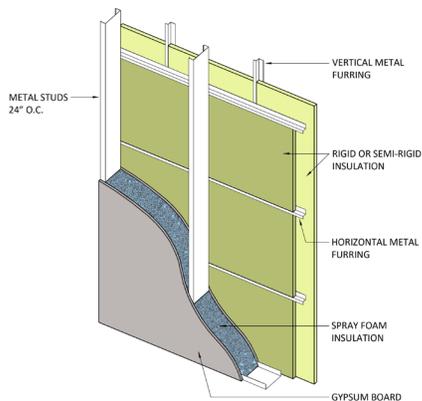
Our projects have been setting increasingly higher energy reduction goals. Recently constructed projects have been designed to meet the 2030 targets, and are being tracked to determine their success. Strategies to reduce energy use vary per project, and currently include:

- + Building Orientation
- + Ground Source Heat Pumps
- + Heat Recovery Systems
- + Displacement Ventilation
- + Triple-Pane Glazing
- + Super-Insulated Walls and Roofs
 - Closed cell spray foam between wall framing
 - Exterior cavity insulation outside wall framing
- + Daylight Harvesting
- + Photovoltaic Energy Generation.

Water

NAC evaluates the potential of each project to incorporate water-saving features, with strategies such as:

- + Native and Drought-Tolerant Landscaping
- + Digital Irrigation Control with Rain Sensors
- + Dual-Flush Toilets
- + Waterless or Pint-Flow Urinals
- + Low-Flow Showers and Lavatories
- + Greywater Reuse Systems



ENHANCED WALL AXONOMETRIC

Materials

Unhealthy materials are eliminated wherever possible by utilizing projects such as:

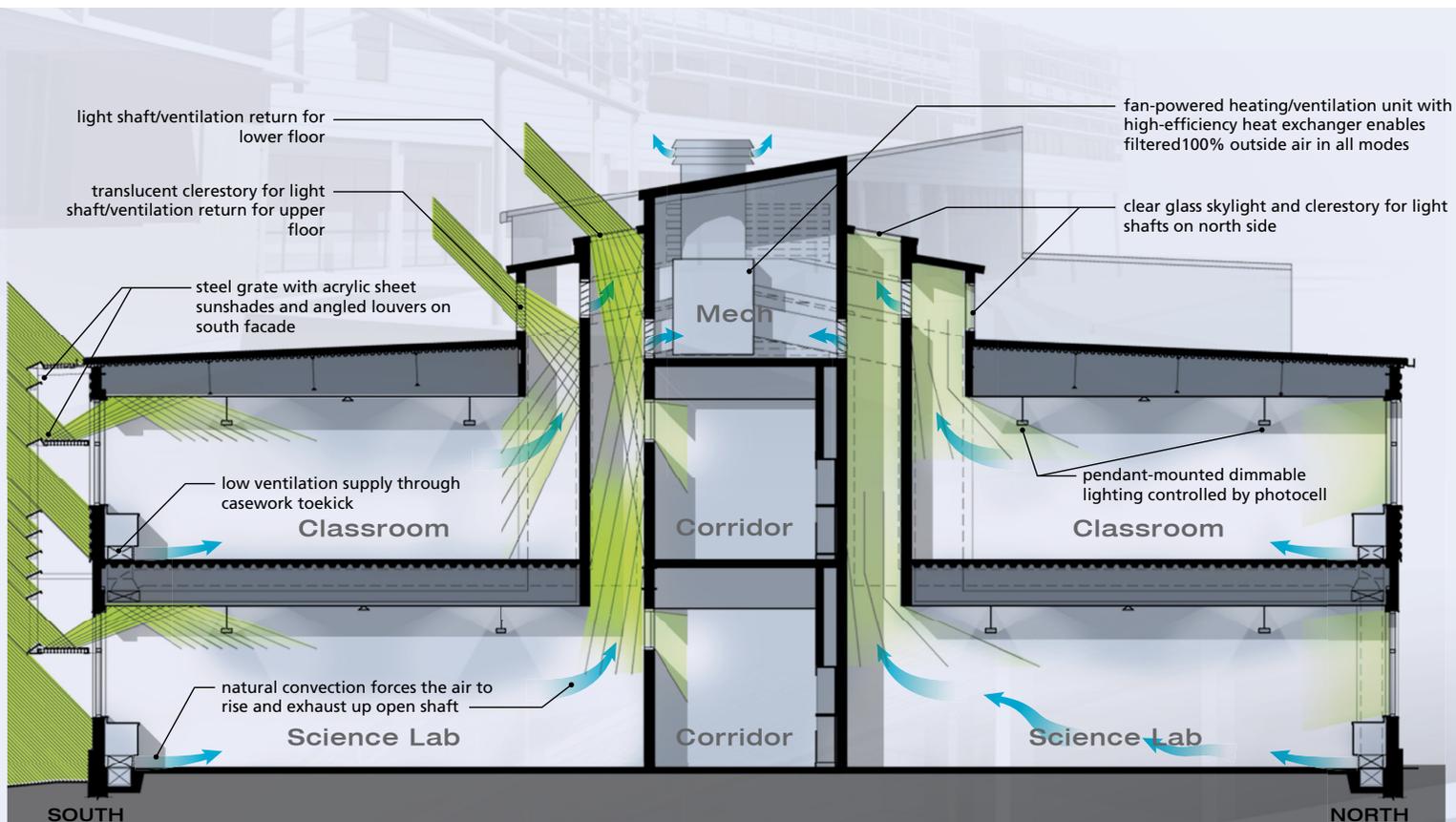
- + Composite wood products with no added urea-formaldehyde resin
- + No-VOC or low-VOC interior finishes: paint, carpet, ceilings, adhesives and sealants.
- + Building equipment free of HCFCs and halons.

Evaluation

NAC reviews each project design based on established protocols for evaluating sustainable building strategies.

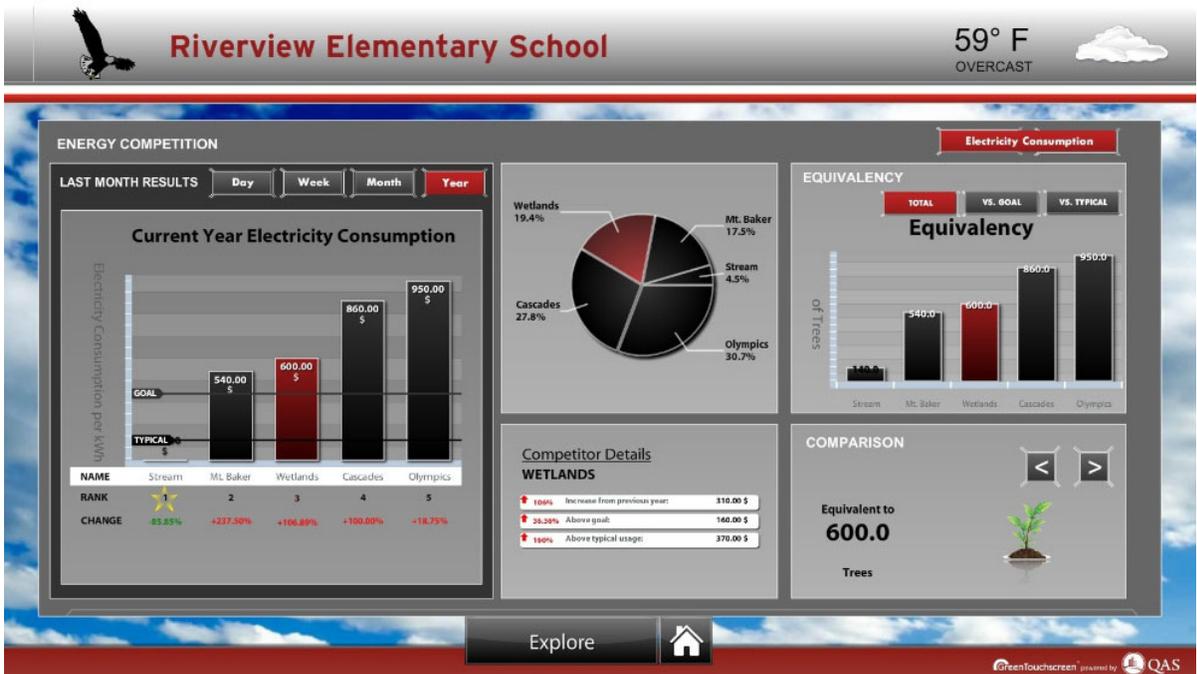
Case Studies

All NAC projects are documented with design Energy Use Index in kBtu/sf/year. Case studies are created as projects are completed, some of which have already been presented in industry publications or at various industry conferences. (For case studies visit www.nacarchitecture.com/sustainability)

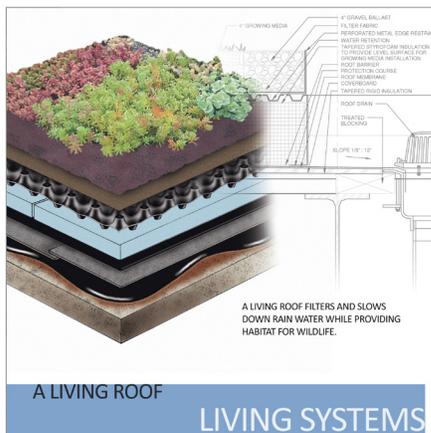
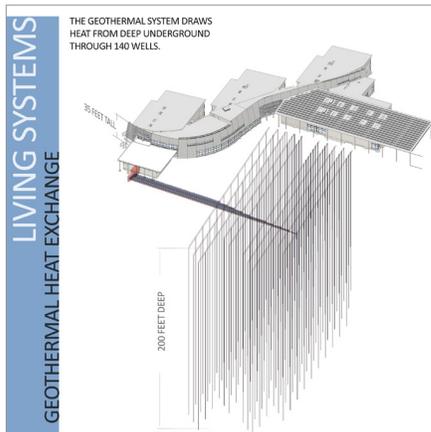
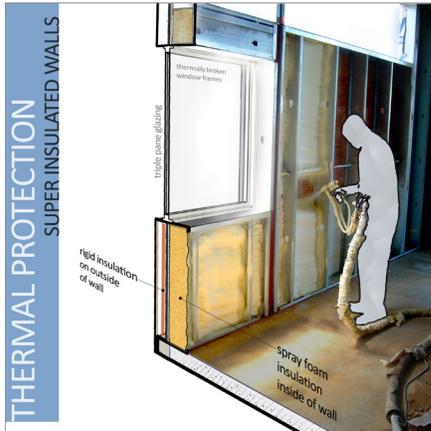




18 | Colored lights reflect energy use efficiency for occupants in classrooms and the building at large.



A dashboard that tracks energy usage at this school is displayed on a touchscreen in the lobby and available via the internet.



What does it take to be successful?

Designing a sustainable environment is only half the battle. The other half depends on how the users interface with the environment. We are committed to three steps that help ensure that the environments we build perform for their users as they were designed to do.

1. **Educating Occupants** – The more people understand how their environments were designed to function, the better they are at operating and utilizing them. We work with building maintenance staff, users and visitors on strategies to keep the building performing at optimal levels and to care for the building in ways that keep the building and the environment clean and healthy.
2. **Post-Occupancy Evaluation** – Our commitment to a building does not end with substantial completion. It is important to revisit our creations after they have been in use for a while to ensure that we are meeting the needs we planned to meet and that performance aligns with expectations.
3. **Tracking Energy Usage** – Allowing occupants to track energy usage serves as an ongoing reminder of what we have achieved and how we continue to respect our environment. We like to work with end users to set up methods to track and report back energy usage so we can see how our buildings perform over the long haul. In addition we incorporate creative energy monitoring strategies into the buildings that allow occupants to monitor energy usage and, in some instances, to compete with each other to be good stewards of natural resources.

Placards identifying sustainability strategies employed are strategically posted throughout the building.

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