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Four Colorado-based entities, during the height of the pandemic, have successfully designed, built, and operated the first verified zero energy outpatient health care facility in North America.

Pueblo Community Health Center (PCHC) Board of Directors and leadership broke ground on their East Side Clinic in October 2020. With design assistance from RTA Architects and engineering consultants Farnsworth Group, the general contractor on the 64,000 square foot facility was Bryan Construction. The project represented PCHC's \$24M investment in the needy east side neighborhood.

The building, completed in late 2021, was open to patients in January 2022. With many features that are designed to achieve zero energy status (producing more energy than is consumed), the new clinic is not only functional, but beautiful. The three-story facility boasts an open, atrium design with original Pueblo artwork displayed in the public areas of each floor. Modern furnishing includes seating options that are comfortable, have higher chairs and bariatric features. An electronic message board at the front entry details the renewable energy design elements present throughout the space for educational purposes. Services available at the East Side Clinic include primary medical, dental, behavioral health, patient pharmacy, and lab.

It is with tremendous pride of accomplishment that the four organizations came together to complete the historical accomplishment of constructing the first zero energy verified outpatient health care facility in North America.



110 E. Routt Ave.
Pueblo, Colorado 81004
(719) 543-8711
www.PuebloCHC.org



PUEBLO CLINIC FIRST IN NORTH AMERICA TO BE VERIFIED ZERO ENERGY

The newest Pueblo Community Health Center (PCHC) clinic – the East Side Clinic, located at 1301 E. 7th Street, was recently updated from “emerging” zero energy to “verified” by the New Buildings Institute (NBI). This makes PCHC the first zero energy outpatient health care facility in North America according to NBI.

The pursuit of zero energy for the East Side Clinic began in the early stages of design with a fully integrated process and the development of a zero energy road map with RTA Architects, MEP engineering consultant Farnsworth Group, and PCHC leadership. In addition, the city of Pueblo adopted a resolution that set a vision to use 100% renewable energy by 2035. As a leading health care provider in the community and a nonprofit, charitable organization that contributes to the quality of life in Pueblo, PCHC wanted to align its organizational sustainability goals with the community’s goals.

The first step was the development of the energy model target. This target was initially based on a 50% reduction of the EnergyStar Baseline energy use for a 60,000-square-foot outpatient facility. Zero energy is accomplished when the total site energy use is offset by total site energy production. "Energy the building uses is provided entirely by the building itself," Donald Moore, PCHC CEO stated. "Through a solar panel system, geothermal underground well system, and state-of-the-art insulation and lighting controls."

PCHC’s East Side Clinic had the “emerging” status for the first year of operations, recently the NBI reviewed the first-year stats (On-site total used - 423,024 kWh ** On-site PV total produced - 435,744 kWh) and moved the status to “verified”.

The East Side Clinic opened its doors to patients on January 10, 2022. The new clinic includes a pharmacy, lab, and dental services, in addition to medical and behavioral health care. The clinic will allow PCHC to serve an additional 5,000 patients over the next 10 years. To learn more about PCHC or to become a patient please call (719) 543-8711 or visit www.pueblochc.org.

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PUEBLO COMMUNITY HEALTH CENTER: FIRST ZERO ENERGY OUTPATIENT HEALTH CARE FACILITY IN NORTH AMERICA

Colorado General Contractor Bryan Construction has built North America's first verified zero energy outpatient health care facility with RTA Architects and Pueblo Community Health Center. Completed in December of 2021, Pueblo Community Health Center's (PCHC) East Side Clinic was constructed to accommodate the growing population of the City of Pueblo.

PCHC is a private non-profit health care provider that aims to serve the community regardless of one's ability to pay. As a premier general contractor for over 45 years, Bryan Construction worked alongside RTA Architects, PCHC, Farnsworth Group, and various trade partners to construct this new building and make a mark on the history of renewable green building.

The 64,000-square-foot facility spans three stories and includes 78 exam rooms, meeting spaces, a patient pharmacy, and a laboratory. Most importantly, though, the East Side Clinic was constructed with a zero energy goal to improve the community's health by reducing greenhouse gas emissions and offsetting this with renewable energy solutions. This was accomplished through extensive natural lighting with triple-pane glass, upgraded building materials, a solar panel system on the roof and parking structures, a geothermal underground well system, and state-of-the-art insulation and lighting controls. Spurred by the COVID-19 pandemic, the facility also includes an air ionization system to ventilate the air, reducing transmission of viruses.

After 12 months of consecutive data and tracking of the buildings' emissions and energy, New Buildings Institute (NBI) made it official that the East Side Clinic was the first verified zero energy outpatient health care facility in North America. For any building to be considered zero energy, it must produce enough renewable energy to meet its own annual energy consumption requirements. This will then reduce the use of nonrenewable energy.

"We are proud to be the General Contractor on this project. To join in the mission of Pueblo Community Health Center to provide health care to those underserved in the community is truly an honor. This zero energy achievement will enhance the health care provided by allowing cost savings created in energy savings to be applied to patient care." Said Doug Woody, Vice President of Bryan Construction.

This national verification not only marks a milestone in the region's initiative toward renewable energy but also provides a healthier community and has helped pave the way for future contractors and facilities across the nation to become off-the-grid, utilizing more energy-efficient practices for a more clean and sustainable future.



North America's First Zero Energy Health Care Facility

Farnsworth Group is excited to announce North America's first Verified Zero Energy Outpatient Health Care Facility. Our engineers have monitored utility data for the past year and have verified the on-site photo-voltaic systems are producing more energy than the building consumes annually. This is a significant milestone in sustainable building design. Zero Energy/Net Zero is a cutting-edge building design strategy that uses holistic design and operational strategies to minimize energy use and maximize renewable energy generation. The success of this project in Pueblo, Colorado, is the result of the collaboration between Pueblo Community Health Center (PCHC), RTA Architects, Farnsworth Group, and a team of skilled consultants who worked diligently to create a building that sets a new standard for sustainable design in health care.

Key factors in the project's success included Farnsworth Group's support and development of a Zero Energy Roadmap, studying how PCHC uses energy in their other buildings, establishing building and discipline-specific energy goals, and implementing mechanical, plumbing, and electrical systems designs to achieve those goals. Architectural strategies included an enhanced building envelope with insulation values in excess of code requirements and fiberglass framed windows. Energy-efficient systems such as ground source heat pumps, energy recovery ventilation, desuperheaters for domestic hot water, and LED lighting, contributed to the project achieving greater than a 50% reduction in energy usage reduction and a 66% cost savings compared to PCHC's next best operating building. When compared to the average existing similar facility across the industry, savings increase to a 75% reduction in energy use. On-site renewable energy in the form of photovoltaic systems with a 280-kW array more than offset the consumption of this all-electric building.

To develop the business case for these investments, the Construction Professional provided estimates indicating a 6% capital investment for construction compared to an equivalent design that did not pursue Zero Energy. The project resulted in a \$126,000 rebate from Black Hills Utilities and saves approximately \$103,000 per year on utilities! Compared to PCHC's existing buildings, the simple payback for the additional cost ranges between 6 and 13 years.

"Our team is incredibly proud to have supported the achievement of our client's energy goals and created a sustainable building that will benefit the community and PCHC's mission to serve their patients for years to come," said Corey Chinn, Commissioning Manager at Farnsworth Group.

The Pueblo Community Health Center's East Side Clinic is a testament to Farnsworth Group's commitment to true integrated design, sustainability, energy efficiency, renewable energy, design, and innovation. The firm is excited to continue pushing the boundaries of sustainable design and collaborating with partners to create practical energy-efficient buildings that benefit the community and the environment.

For more information on Farnsworth Group's sustainable design services, please contact info@f-w.com. The database of Zero Energy Buildings in North America can be found on the New Building Institute website, <https://newbuildings.org/resource/getting-to-zero-database/>.



RTA Architects
19 S Tejon St, Suite 300
Colorado Springs, CO 80903
(719) 471-7566

Pueblo Community Health Center East Side Clinic: First Zero Energy Verified Outpatient Health Care Facility in North America

Pueblo Community Health Center East Side Clinic is the first Verified Zero Energy Outpatient Health Care Facility in North America. This verification from New Buildings Institute indicates that the total site energy production offsets the total site energy use.

The new clinic was truly a community project that brought together community members and multiple local organizations. It was during one of these community meetings that the importance of sustainability first came to light. A local retired doctor advocated for a sustainable design that would reduce the environmental impact that energy-intensive health care buildings often face. Sustainability was also established as a goal of the City of Pueblo, which committed to becoming fully powered by renewable energy by 2035. A leading health care provider in the community, PCHC wanted to align its organizational goals with the community's goals. This community vision was one of the three project pillars; the others were the business case and the board's vision. These pillars and goals resulted in the decision to design the new clinic to Zero Energy standards. "It was great to see the shared vision of Pueblo Community Health Center and the community come together to deliver the first verified zero energy outpatient medical facility in the country" said Kevin Gould, RTA Principal.

The New East Side Clinic

Completed in 2022, the new East Side Clinic brings a full range of medical services to Pueblo's east side community, including primary care, dental, lab, pharmacy, and behavioral health. The three-story health clinic features ample natural light and a brick exterior reminiscent of Pueblo's historic buildings. It has 78 exam rooms, a dental clinic, a pharmacy, a lab, a meeting space, and shell space for future expansion. A bright open layout with collaborative spaces, paired with exceptional energy-efficient design, gives Pueblo's East side a truly state-of-the-art new clinic.

The Path to Zero Energy

Throughout numerous user group and community meetings, the team identified the goal of designing the building to meet Zero Energy Building standards to reduce greenhouse gas emissions, significantly reduce energy usage and operating costs, and set a new standard in outpatient clinic design. Zero Energy was chosen over LEED, Well Building Standards, and other sustainable building certifications due to its ease of measurement and focused on whole-building performance and carbon footprint reduction. Zero Energy verification was achieved through an integrated design process that brought together the Architect, MEP engineering consultant, and PCHC leadership.

Sustainable Features

The team focused on sustainability and zero energy throughout all project phases by first developing a Zero Energy Road Map, establishing an energy model target, and identifying discipline-specific goals for each team member. Several strategies were utilized to accomplish zero energy. Energy Star-compliant equipment ensures the internal loads maintain low energy use. A tight building envelope with high-performance fiberglass windows yields approximately 28% annual energy savings. Photovoltaic (PV) arrays placed atop the parking canopy and on the building's roof produce energy on-site. Ground-source heat pumps with four miles of piping provide an efficient heating and cooling method for the building.

The successful pursuit of Zero Energy set a new standard for sustainability in the City of Pueblo and has inspired other organizations to follow suit.

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Contacts

Sommer Street, Director of Communications

Pueblo Community Health Center

www.pueblochc.org

sstreet@pueblochc.org

(719) 543-8718 x 316

Amber Ferreira, Marketing Department

Bryan Construction

www.bryanconstruction.com

aferreira@bryanconstruction.com

(719) 632-5355

Andrew Kraemer, Marketing Manager

Farnsworth Group

www.f-w.com

akraemer@f-w.com

(719) 590-9194

Heather Belveal, Marketing Manager

RTA Architects

www.rtaarchitects.com

heatherb@rtaarchitects.com

(719) 471-7566

About

Pueblo Community Health Center (PCHC) is a non-profit, Federally Qualified Health Center in Pueblo, Colorado that has provided primary care to those in need, regardless of ability to pay, since 1983. In addition to primary medical care, PCHC also offers behavioral and dental health care and lab and pharmacy services to their 26,000+ patients across thirteen locations.

www.pueblochc.org

Bryan Construction Since 1978 Bryan Construction has been delivering premier construction projects that have built the communities you love and live in today. As the preferred contractor in Colorado, the Western US, and abroad, we integrate our core values into our everyday work. We listen, care, put our client's needs first, and come together as a team to ensure your construction goals are achieved. Our Multi-Family, Commercial, Federal, Facility Services, and International groups are driven and dedicated to going the extra mile. And because of our diverse experience across a range of project types, we are well-rounded, can accommodate any project, and will provide expert knowledge to deliver your vision efficiently while still focusing on building relationships with our clients. Combining all these key attributes allows Bryan Construction and our team to fulfill our mission of Building with Performance Excellence every time.

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Farnsworth Group is a century-old engineering, architecture, and surveying firm that has over 500 employees located throughout a nationwide network of 26 offices including Denver, Durango, Fort Collins, and Colorado Springs. We pride ourselves in strong working relationships, client loyalty, and technical expertise. Our oldest client dates back nearly 100 years. As a full-service firm, we can bring nearly any technical expertise required to ensure a successful project, whether planning, design, permitting, commissioning, or construction administration.

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RTA Architects has created award-winning architectural and interior designs for the Colorado built environment since 1975. RTA specializes in healthcare, education, retail, and commercial properties, delivering beautiful buildings that serve the unique needs of their owners and occupants. In addition to our core strength of architecture and design for new construction, renovation, and adaptive re-use projects, RTA provides technical expertise in a broad range of related services, including feasibility studies, site selection and comparative analysis, master planning, site planning, facility programming, interior design, and environmental graphics, signage, and wayfinding.

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