



2021 CORPORATE SOCIAL RESPONSIBILITY REPORT

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Introduction

Group14 Engineering, PBC (Group14) is an energy efficiency and sustainability consulting firm committed to personal, societal, and ecological prosperity. Our mission is to transform the built environment to realize a more resilient future. While Group14's expertise is in the built environment, Our passion is to use our business for a source of good and to support thriving and inspiring communities. We operate with the goal of creating a positive impact through our work.

Group14 has sustainability at its core. We understand that sustainable development requires a holistic approach to growth and a deep understanding that true success depends on a dynamic interconnectedness of economic, ecological, and social viability. Our values and our actions speak directly to this interconnectedness. We also believe in transparency and progress. Group14 is committed to reporting our efforts with and continuing to learn from our community - including our clients, the people and places we serve, and our city to drive awareness of our corporate responsibility values.



Last Year's Achievements



For us, 2021 was a year of flexibility and discovery. Group14 continued to ride the waves of the industry's (and country's) ups and downs while maintaining a responsiveness to our clients and employee's needs. We established a formal remote work plan and engaged our staff in how to best maintain satisfaction and productivity while working virtually. By December, our admin team set up a plan for a limited number of staff members to return to work on a rotating, as-desired basis.



The research and planning that our Justice, Equity, Diversity, and Inclusivity (JEDI) committee accomplished throughout 2020, started being implemented in 2021. Group14 made a strong effort to diversify our internal workforce as well as the industry in general. We offered internships and scholarships for minority students looking to get into the sustainability and engineering industry, and we continued to financially support JEDI-focused businesses and non-profits through our procurement, volunteer, and philanthropic efforts.



Lastly, we contributed greatly to push our industry towards a carbon-free future with our work, research, and participation on various committees focused on electrifying and maximizing the efficiency of our built environment. To achieve the science-based targets set out by the Paris Climate Agreement, our buildings & communities - new and existing must make great strides in pushing towards a net zero energy pathway that is equitable and resilient. Group14 is taking this into account on every project we work on and continually pushing towards a more sustainable and just future.



Our Story

Group14 is a 54-person consulting firm committed to improving the energy and resource efficiency of buildings. We are a recognized authority in sustainable design and energy efficiency, building commissioning, and green building certifications.

Group14 was established in 1992 and is headquartered in Denver, Colorado with projects across the United States. The firm's name, Group14, symbolizes the carbon group on the periodic table-a fitting choice for a company that works to reduce carbon emissions via building efficiency and sustainability.

Group14 is a certified women business enterprise (WBE) with the City and County of Denver, as well as a certified Women's Business Enterprise (WBE) with the Women's Business Enterprise National Council. The firm is also a registered small business enterprise (SBE) and disadvantaged business enterprise (DBE) with the City and County of Denver. Group14 is committed to justice, equity, diversity, and inclusion in our company culture, community, and workplace. We have a staff-led JEDI committee that guides our firm's efforts to apply these concepts as a core principles throughout our corporate decision-making, policies, programs, and hiring practices.

In addition to being a B-Corp, Group14 is also LEED certified, a JUST organization, and a Public Benefit Corporation (PBC). These certifications and designations continually drive us to positively impact our workforce, the environment, and our community.





OUR MISSION IS TO TRANSFORM THE BUILT **ENVIRONMENT** TO REALIZE A MORE RESILIENT FUTURE.

Frameworks

B-CORP



In 2016, Group14 changed our bylaws and became a public benefit corporation (PBC). The PBC status demonstrates our dedication to our workforce, our environment, and our greater global community by challenging the convention that the goal of business is profitability above all else. We renewed our commitment by recertifying as a BCorp and JUST Organization in 2018 and in 2021.

Group14 Engineering has operated as a purpose-driven business long before our awareness of Certified B Corporations. Our decision to pursue becoming a Certified B Corporation was initially driven by a desire to quantify our past and current modes of operation. While we certainly accomplished that goal, we were also introduced to concepts and tools that have allowed us to expand our social enterprise in ways we simply hadn't envisioned. We are very proud to be a Certified B Corporation, with many exceptionally talented team members working together to transform the built environment to realize a more resilient future.



- 2017: Best for the Environment Honoree, Best for Governance Honoree
- 2018: Best for the World Overall Honoree, Best for the Environment Honoree, Best for Governance Honoree
- 2019: Best for the World Overall Honoree, Best for the Environment Honoree, Best for Governance Honoree
- 2020: Best for the World honors delayed to 2021 due to COVID
- 2021: Best for the Environment Honoree
- 2021: Group named as one of the 'Best for the World' B Corps of 2021





Before we were a BCorp, we were JUST. The International Living Future Institute's JUST label served as one of our first stepping stones towards having a comprehensive CSR program. JUST is a voluntary disclosure program that measures how organizations are performing in terms of their social justice and equity work.

The JUST program provides a platform for Group14 to demonstrate transparency in operations, how employees benefit by working at Group14, and where we make our financial and community investments. By earning our JUST label seven years ago, we had our first measuring stick of how we could continuously improve our operations, governance, and financial transparency.

The goals of the JUST label are:

- To elevate the discussion around social justice in all organizations
- To create a common language for social justice issues
- To elevate the causes of those individuals who lead on these issues
- To change the policies and practices of thousands of organizations worldwide
- To make life better for people from all walks of life





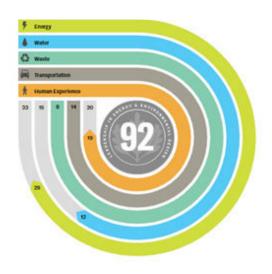
LEED PLATINUM

Group14 continues to maintain our LEED New Construction (NC) and LEED Operations and Maintenance (O&M) certifications. Our headquarters, located at 1325 E 16th Ave in Denver CO, achieved LEED for New Construction (v2009) certification at the time of our major renovation in 2008.

The new LEEDv4.1 O&M program is based on actual performance data and reflects our ongoing operations month to month. As of December 2021, Group14 continues to be a leader in green building operations with our LEED Platinum status, and maintains a position in the top 1% of performing buildings in the nation.



Above: Group14's office is in the top 1% of performing buildings in the nation.



B: CIVIC



Our firm is a member of B:Civic Colorado, a force of local business leaders who are "passionate about giving back" to the community. Being a member of B:Civic allows Group14 to work with other like-minded business leaders to make an impact in Denver and across Colorado.

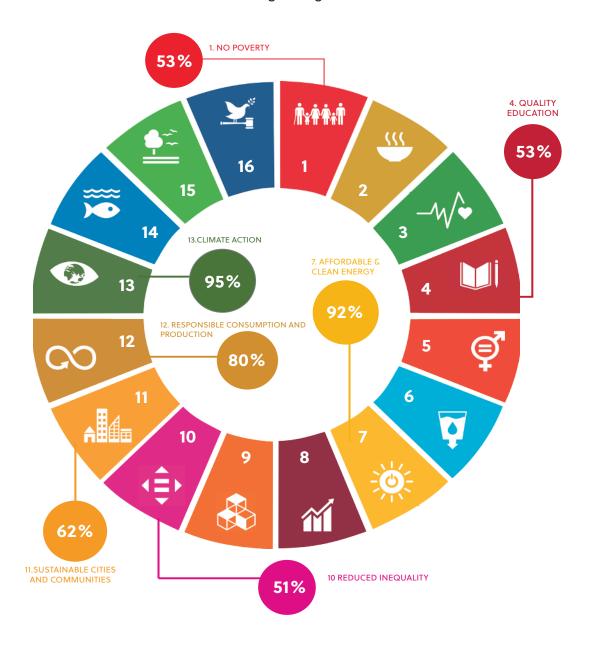
Group14 also signed B:Civic's Colorado Companies Uniting Against Racism pledge in 2021, indicating our commitment to fight racial injustice along with other organizations in our state through increased efforts to listen, learn and lead. In 2021, we were named a Civic 50 Colorado Honoree by CSR Solutions of Colorado and Points of Light, the world's largest organization dedicated to volunteer service. The award recognized Group14 as one of the most community-minded companies in Colorado, which was determined by an independently administered and scored survey.



UN SUSTAINABLE DEVELOPMENT GOALS

The United Nations Global Compact works with companies everywhere to align their operations and strategies with universal principles in the areas of human rights, labor, environment and anti-corruption. Launched in 2000, the UN Global Compact guides and supports the global business community in advancing UN goals and values through responsible corporate practices. With more than 10,000 companies and 3,000 non-business signatories based in over 160 countries, and 68 Local Networks, it is the largest corporate sustainability initiative in the world.

Sustainable Development Goals (SDG) are a set of commitments made by everyone from world leaders to businesses to end poverty, fight inequality and injustice, and prevent the harmful effects of climate change. While this is not an official certification, we are tracking our progress and impact in 16 areas. The graphic below indicates the seven areas where we're scoring the highest.





WBE, SBE, DBE & WOSB

Group14 is a certified women business enterprise (WBE) with the City and County of Denver, as well as a certified Women Owned Small Business (WOSB) with the Women's Business Enterprise National Council (WBENC). The firm is also a registered small business enterprise (SBE) and disadvantaged business enterprise (DBE) with the City and County of Denver.



Promoting the Growth & Success of other MWBE/SBE/DBEs:

We make efforts to utilize local M/WBE vendors whenever possible. For example, our promotional apparel vendor is DK Promotions Colorado, a minority-owned, DBE. We also use Digital Frontier, a WBE/SBE, for all our printed marketing collateral.





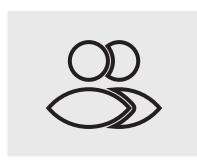
Our Programs

When Group14 decides what programs to invest in, we consider our employees, clients, and those directly involved in the day-to-day operations of our projects. We consider our "community" to be local, regional, and global.

We continually work to align our CSR strategies with impacts that bring the greatest benefits to all our stakeholders. The main components of Group14's CSR are:







EMPLOYEES



ENVIRONMENT

COMMUNITY



Group14 impacts positive social change in our community through volunteering. Group14 covers 16 hours of paid time each year for full-time employees and eight hours of paid time each year for part-time employees to dedicate to a cause of their choice. The success of this program has resulted in maintaining a high percentage of employee participation since the policy was implemented.

2018	72% of staff volunteering over 400 cumulative paid volunteer hours
2019	91% of staff volunteering over 515 cumulative paid volunteer hours
2020	95% of staff volunteering over 469 cumulative paid volunteer hours
2021	88% of staff volunteering over 529 cumulative paid volunteer hours

Through 2021, the pandemic continued to present challenges to the traditional in-person volunteer service model, however, Group14 employees were able to find creative ways to serve those in our community in a remote or socially distanced manner. The Dolores project, explained on the following page, is just one example that illustrates our support to community organizations that are making a difference in people's lives.



The Delores Project (TDP) is an organization which provides shelter and services for women and transgender individuals experience homelessness and advocates for housing solutions. As a company, Group14 prepares a monthly meal which provides an easily accessible volunteer opportunity for employees. During typical years, the food would be prepared and served at the shelter. During the majority of 2021, however, COVID-safe practices developed in 2020 where volunteers coordinated to cook individually in their own homes and organized the preparation and delivery in time for dinner at the shelter were continued. In late 2021, inperson preparation and meal service was able to resume for vaccinated volunteers.



Above: Group14 staff volunteering at Delores Project, where we have a standing, monthly commitment to prepare meals.

In addition to our standard volunteering policies, in which employees are allocated paid volunteer hours, any food purchased in preparation for the meal is also donated in-kind. Group14 has also utilized our building industry expertise to offer services for the Delores Project and assisted in the design and development of the organization's new facilities.

CHARITABLE GIVING

Group14 recognizes that our firm can achieve a positive social impact through the strategic and generous use of finances. We are a certified B-Corp and as such, we commit to giving a minimum of 1.1% of our net revenue to charity. Our quiding principles for company-directed giving are outlined by the following criteria and goals:

- Reduce the impact on the environment and support Group14's mission.
- 2. Address Justice, Equity, Diversity, and Inclusion in our community, with an emphasis on supporting education and developing a more diverse workforce within the building sustainability and energy fields.
- 3. Provide a local impact with a focus on Colorado and preference for Denver organizations who support lowincome people and improve our community.

In addition to the company's leadership team and JEDI-committee informed charitable giving allocations, Group14 provides dollars-for-doers matches towards organizations where staff regularly volunteer. Furthermore, employees are encouraged to participate in the Community Shares program. This program allows individuals to donate directly to non-profit organizations of their choice through a payroll deduction, which is then matched by the company at up to \$500/yr.

Over the course of 2021, Group14 donated a total of \$117,740 to charitable organizations. This accounts to 1.1% of the company's total revenue donated, and 3.9% of total profits donated.



The following table summarizes the organizations that Group14 and its employees donated to in 2021:

Organizations	
ACEEE	MWHS Giving Tree
B Local: Changemakers Coalition of Colorado	NRDC
Boy/Girl Scout Troops/Packs: 35, 734	One Tree Planted
Building Commissioning Assoc. Scholarship Foundation	Planned Parenthood
CCA Foundation	Prevent & Prevail
CO Criminal Justice Reform Coalition (CCJRC)	Project Angel Heart
Coats for Colorado	Rocky Mountain Chapter ASHRAE
Colorado Public Radio	Rocky Mountain Institute (RMI)
Community Shares of Colorado	Rocky Mountain MS Center
CSU Foundation	Rose Andom Center
Denver Architecture Foundation	Shiloh House
Denver Scholarship Foundation	Southwest Energy Efficiency Project
Diversity in Architecture Scholarships, CU Denver	Stride
Earthlinks	Tall Tales Ranch
Energy Outreach Colorado	The Delores Project (TDP)
Envirolution	THA, Inc
Food Bank of the Rockies	The Alliance Center
Fundamental Needs	The Angel Card Project
Habitat for Humanity Metro Denver	The Denver Foundation
Humane Society of the US	Urban Servant Core
Institute for Market Transformation	Warder Elementary School
International Living Future Institute (ILFI)	Washington STEM
ioby	Western Resource Advocates
Mental Health Center of Denver	Youth Employment Academy
Metro West Housing	Youth Roots

Funding Scholarships: Group14 works with organizations like the Denver Scholarship Fund (DSF) and the Metro Denver STEM Alliance (MDSA) community college scholarship fund to provide industry exposure via scholarships and mentorships to minority students. Group14 partners with DSF to help minority and women Denver Public Schools graduates seeking degrees in engineering, environmental or social sciences through an annual scholarship of \$10,000.





RACIAL JUSTICE PROGRAMS

Group14's employee-directed JEDI committee was formally established in 2020 to provide a focused effort towards addressing inclusivity in the company's policies, practices and community impact. One of the committee's responsibilities is to research and delegate JEDI-focused charitable giving allocations. While many of the organizations that Group14 has historically contributed to positively impact the community and inherently include JEDI components, the subset selected by the JEDI committee were chosen to provide further support towards non-profit organizations and scholarships with racial equity focused missions. In 2021, Group14's JEDI committee chose to support the following racial-justice oriented organizations:

- CO Criminal Justice Reform Coalition (CCJRC)
- The Denver Foundation, Black Resilience in CO Fund (BRIC)
- The Metro Denver STEM Alliance (MDSA), community college scholarship fund

In addition to supporting students and organizations through charitable giving, actions and initiatives led by the JEDI committee also included:

- Increasing education through an employee-led internal education series, company-sponsored attendance of community productions with racial justice themes, and the outlining goals for the forthcoming year's professionally-led JEDI training
- Refining hiring and recruiting practices through the continued standardization of of interview processes, increased education regarding unconscious biases, and the expansion our job posting networks
- Strengthening our partnerships and programs that provide industry exposure and mentorship to minority students pursuing education or careers related to buildings and sustainability
- Working with others to continuously assess for opportunities to improve our JEDI-related practices

EMPLOYEES

Central to any successful company is the team, and at Group14 we have the best employees. Our staff includes a diverse group of effective and engaged individuals from a multitude of backgrounds. We continually strive to learn together, make a collective impact together, and grow together.



EMPLOYEE SATISFACTION

Group14 understands that employee productivity is directly linked to employee happiness. Group14 was founded on the belief that workers should experience a positive work-life balance in order to thrive and maintain productive self and family relationships. Our policies support this work-life balance including maternity & paternity leave, bereavement leave, unlimited PTO, workplace wellness programs, flexible work hours, the ability to work from home, paid time for volunteering, training budgets for continuing education, and yearly retreats for employees and their families paid for by Group14.



Every year, Group14 formally engages staff to understand how working at Group14 is impacting their professional and personal lives, and what the company can do to improve. Group14 is proud to say we achieved a satisfaction rate of over 87% in our most recent staff poll. The feedback provided via surveys is continually assessed and woven into our ongoing CSR efforts.

One of the ways Group14 works to maintain employee satisfaction is through our training program, where employees receive a yearly stipend to invest in their own career development and engage in topics that interest them. This stipend can also be used for education and training related to justice, equity, diversity, and inclusivity.



WORKPLACE WELLNESS

Group14 recognizes that the average American spends 95% of their life indoors (EPA). Therefore, its imperative that our work environment contributes to our health and wellbeing. The concept of biophilia suggests that human well-being is tied to our connections with nature and other forms of life.

From the standpoint of the built environment, we have focused on biophilic design, thermal comfort, and ergonomics to create an office environment that is enjoyable for our staff and visitors. Our office space has high levels of daylighting, access to views, abundant plant life, operable windows for the majority of spaces, natural ventilation, and standing desks.



Above: Group14's office features operable windows for the majority of spaces.

GENDER EQUALITY

Workplace gender equality is achieved when individuals can access and enjoy the same rewards, compensation, and opportunities regardless of gender. Group14 is committed to gender equality not only because it is the 'fair' and 'right thing to do,' but because it is also linked to our overall economic performance and worker happiness. To ensure a balanced work environment, Group14 is focused on maintaining a maximum of a 5% deviation from a gender balanced workforce. Group14 strives to maintain a maximum of 10% deviation from gender balanced management and senior leadership staff to further promote gender balance at all job classifications and levels. Group14 is committed to hiring the best talent free of discrimination based on gender for qualified individuals.



DIVERSITY AND INCLUSIVITY

In addition to Group14's gender equality goals, our company strives to promote ethnic and racial diversity in our workplace and business practices. Fostering and embracing diversity impacts our organization's success and competitiveness by enhancing our ability to better serve our clients, community, and employees.

Group 14 provides equal opportunities amongst all employees or prospective employees by practicing promotion and hiring policies based on merit and skill. Group14 also maintains non-discrimination standards and a commitment to antiracism in our company policy and culture. Beyond diversity, Group14 aims to cultivate an inclusive environment where individuals from all backgrounds are welcomed, respected, and provided opportunities to grow and share their ideas or concerns.

Over the past year, some of Group14's efforts to promote diversity and inclusivity involved increasing our crosscultural awareness and sharing of traditions, improving our recruiting and hiring practices, and collaborating with others to identify additional initiatives and goal-setting opportunities. Beyond our efforts to develop a diverse and inclusive company environment, Group14 works to provide its employees the knowledge and tools to be allies and advocates for others throughout all aspects of life. This not only entails resources for addressing grievances or resolving conflicts in business-related settings such as conference calls or site visits, but includes skills and values that stretch beyond the workplace into our community and personal interactions. Furthermore, our philanthropic and volunteering initiatives align with our values of diversifying our industry by providing scholarships, mentorship and representation to historically underrepresented students.

This upcoming year, Group14 plans to continue promoting diversity and inclusivity within our company by improving our data collection and analyses surrounding employee satisfaction and demographics, and through the development of internal mentorship programs. Group14 understands that even as a small business we are exposed to many cultures and demographics. We believe that by encouraging diversity and inclusivity within the workplace we not only have the chance to develop future business opportunities and improve operations, but are also taking on our responsibility to ensure our employees are safe and happy, and leveraging our power to positively impact our industry and community.

Diversity Trainings:

Our JEDI committee organizes regular trainings around structural racism, unconscious bias and other equity issues. In 2021, we held trainings on the following topics:

- Preventing Discrimination and Sexual Harassment
- **Gender Equity**
- Multi-Generational Workforce & Ageism
- **Cross Cultural Awareness**
- Microaggressions



ENVIRONMENT

A huge part of our mission at Group14 is to preserve the environment and conserve resources. This goal is central to every one of our projects, as well as how we operate our business. For this reason, we assess our impact on both a local and global scale and work to make a healthier, more resilient place for all of life. Group14 assesses our impact in terms of carbon emissions, energy and water consumption, waste reduction, land use and preservation, ethical consumption, and awareness building/education.



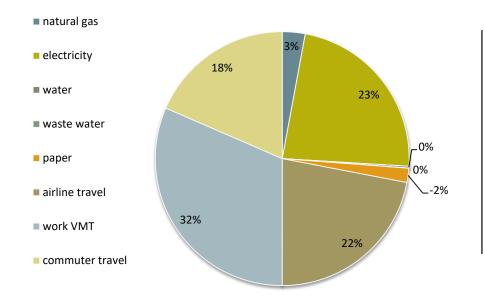
GREENHOUSE GAS EMISSIONS

Group14 began tracking our Greenhouse gas (GHG) emissions in 2008. Since that time, Group14 has pursued several strategies to address our emissions and put us on the path toward carbon neutrality. As identified in the table below, Group14 accounts for Scopes 1-3, including sectors such as energy, water, waste, purchasing, and transportation. Calculations are made in alliance with WRI GHG Protocol.

Scope	Source	mT CO2e
Scope 1	Natural gas	2.48
Scope 2	Electricity	19.61
scope 3	Water	0.20
	Waste water	0.02
	Paper	-1.54
	Airline travel	18.71
	Work VMT	26.80
	Commuter travel	15.72
		81.99

Group14's per capita emissions is 1.6 mT per person

Source as Portion of Total Emissions



Scopes as Portion of Total Emissions

Source	Percentage	
Scope 1	3%	
Scope 2	23%	
Scope 3	74%	



FURTHERING OUR IMPACT

Group14 engages in a number of other programs and initiatives to not only lessen our impact but to actually create positive change. These include:

- Our Waste Diversion program that includes advanced recycling opportunities and compositing. In 2021, our waste diversion from the landfill was 83%
- Group14 offsets 100% of their scope 1-3 greenhouse gas emission through One-Tree Planted.
- Sustainable Purchasing Policy where we prioritize Group14's purchases to be from local suppliers that provide eco-friendly products. These companies are also transparent about their products social and environmental impact.



ALTERNATIVE TRANSPORTATION & BIKE-TO-WORK DAY

As our staff began to return to the office throughout 2021, Group14 slowly got back to utilizing our alternative commuting incentives. In 2021, Group14 logged nearly 1,000 miles of alternative commutes, eliminating just over 1/3rd of a ton of carbon.

Group14 was excited to be back in the saddle supporting Denver's annual Bike-to-Work Day in September 2021. Group14 staff coordinated donations from local restaurants and vendors and staffed a booth throughout the morning, welcoming more than 70 riders for coffee, cookies and fresh fruit.





Our Impact

The scope of our impact continues to grow, and we are excited about the future of creating a sustainable built environment with our partners. Our work at Group14 focuses on reducing emissions, resilient designs, sustainable materials, net-zero energy and water, affordable housing, and healthy communities. Two of our notable 2021 projects include:

NOTABLE PROJECTS

ASPEN DISTILLERY



The Aspen Distillery is designed to become the world's first distillery to achieve the Living Building Challenge (LBC); an accolade only 28 projects have achieved worldwide.

PROJECT DATA	
SIZE: 8 ACRES, 7 BUILDINGS	
LOCATION: ASPEN, CO	0
SERVICES: SUSTAINABILITY, ENERGY, AND CX	
OF NOTE: 28TH LIVING BUILDING CHALLENGE PROJECT	5

The project will also earn LEEDv4 BD+C Platinum. Group14 is providing sustainability consulting, energy modeling, and commissioning services on this ambitious project.

The 8-acre site includes seven buildings: the Distillery, a Rickhouse for barrel storage, a headquarters for Aspen Distillers, a pumphouse for the onsite wastewater treatment, and three small residential buildings for staff. Half of the site is designated for regenerative farming practices that will provide local food to the Roaring Fork Valley.

The project is all electric, will operate net-zero energy with a solar photovoltaic array on & off site, and will achieve a 20% minimum reduction in embodied carbon with the use of whole building life cycle analysis.

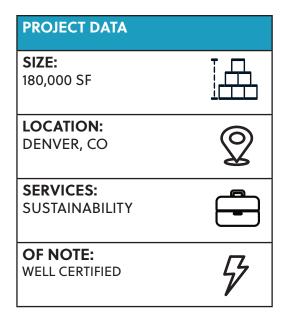
The project also features an onsite wastewater treatment plant that will utilize closed loop systems for the distilling production cycle. This practice will result in 90% of input water returning to the local hydrology. This system along with an onsite well, septic system, and ditchwater for irrigation will fulfill the net zero water imperative of the Living Building Challenge

Group14 is also responsible for vetting all materials against the LBC's Red List to ensure no chemicals of concern are used in the construction of Aspen Distillery.



CATALYST HEALTH-TECH INNOVATION





In 2021, one of Group14's sustainability projects, Catalyst Health-Tech Innovation, achieved WELL Core & Shell Certification at the Silver Level. The prestigious certification was awarded by the International WELL Building Institute (IWBI).

Designed by the Beck Group, the 180,000-square-foot, seven-story core and shell office building includes numerous design elements that promote the health and well-being of its occupants.

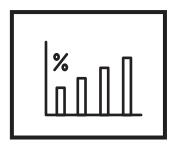
To be awarded WELL Core & Shell Certification, Catalyst HTI underwent rigorous testing and evaluations, earning the distinction based on seven categories —Air, Water, Light, Nourishment, Fitness, Comfort and Mind.

Features that helped the project achieve WELL Silver Certification include:

- Light: The facility was designed with large, fixed windows to take advantage of site orientation and capture natural light. Lighting systems were also designed to minimize glare caused by electric light
- Air: The building promotes clean air through a variety of measures. These measures include moisture management, VOC reduction and construction pollution management.
- Water Quality: Safe and clean water was achieved through the implementation of filtration techniques that eliminated contaminants.
- Opportunities for Fitness: The office features a bike shop, ample bicycle storage, a workout area and locker rooms.

Located in Denver's RiNo neighborhood, Catalyst HTI is a one-of-a-kind, co-working office that brings together health care entities, tech companies, nonprofits and academic organizations under one roof.

GROWTH



Of Note On Our 2021 Growth:

- Our Multifamily Housing Team won 22 LIHTC projects in 2021, tied for first in the state
- Our Sustainability Team kicked off its First Living Building Challenge Project
- In 2021, 33 of our projects earned green building certifications (LEED, WELL, EGC, CHPS)
- The launch of of our new website saw an increase of 350 unique visitors per month, and generated an average of 12 more leads per month



Group14 Bolsters Building Enclosure Capabilities:

In 2021, Alex Kosis, P.E. joined Group14 to lead our building enclosure consulting. Alex has over 13 years of experience in the field and has worked on hundreds of BECx projects. He has designed, investigated, and rehabilitated building enclosure systems of all types. In his new role with Group14, Alex is providing services related to new and existing installations of enclosure systems, emphasizing the design and quality assurance required for a sound building envelope.



Group14 Expands Training Offerings:

Group14, an AIA Continuing Education System (CES) approved provider, began offering the following courses:

- Hygrothermal Analysis of Building Enclosures
- The Basics of Below-Grade Waterproofing Design
- **Energize Denver**
- Biophilic Design
- Trauma Informed Design

RESEARCH

Group14 supports our team members, offering a wide range of professional development opportunities and encouraging staff to share their expertise. Our staff members are frequent speakers on panels and at conferences, presenting on various topics related to sustainability, energy, and building efficiency. A sample of some of our 2021 research is included below:

Colorado Housing and Finance Authority (CHFA) Electrification Study:

The Colorado Housing and Finance Authority (CHFA) hired Group14 to conduct a study aimed at understanding the impacts of building electrification on affordable housing properties supported by the Housing Tax Credit (HTC) program.

The final deliverable for this project was a comprehensive report comparing 11 mixed-fuel HTC-funded properties with 13 all-electric HTC funded properties. The 95-page report included an analysis of heating and cooling systems, interviews with developer and design teams, and a review of utility consumption data. Group14 worked in partnership with CHFA to identify the properties and seek owner permission to participate in the analysis.

Steam Conversion and Electrification Study for the Forum:

Group14 was contracted by the Colorado Coalition of the Homeless to study the heating system options to replace the current district steam system at the 49,700 SF, Forum Apartment building in Denver, CO. The report summarized the building systems, estimated utility usage, system upgrade considerations, and economics for different replacement system types, including natural gas and all-electric options. We worked in partnership with a design team that performed schematic design sizing and options.

The study was conducted as part of Denver's Office of Climate Action, Sustainability and Resiliency (CASR) pilot program to prepare building owners for future electrification requirements enacted by the City. Group14 performed a detailed site investigation to collect equipment information, evaluate current occupancies and space uses, and review equipment conditions for visible deficiencies.

Net-Zero Energy Program Research:

Group14 has been helping clients design projects to meet net zero energy and carbon emissions. To certify the net zero performance, we researched the current net zero energy and net zero carbon certification programs. There are significant differences between the certifications, including how onsite and offsite renewables can be used to meet net zero, whether natural gas use is allowed, and whether the design meets mandatory requirements. We looked in depth at LEED Zero, International Living Futures Institute Zero Energy and Zero Carbon, and Phius Zero Revive certifications.

