

Presentation

U.S Department of Energy

Solar Decathlon 2023

Build Competition



University of Colorado Boulder Team

03/28/2023

Our Story

Following in the footsteps of the previous 2020 Build Challenge winning team, we were fortunate to have some pre-established connections within the industry. Through active networking we have been working to share our project and our story to both educate the greater public as well as spark curiosity and interest.

To prove that sustainability and cost- efficiency can combine to create net zero homes for low-income communities, we knew we had to connect multiple people from different fields. Our team created a well-defined outreach plan to raise awareness of our project and get folks on board. This outreach plan consisted of a clear and concise team narrative combined with connections to both organizations and individual community members.



To promote the project, our team developed a simple logo to represent The Canopy. This design includes images of the sun, a plant, and an outline of the house to symbolize the combination of energy, building construction, and environmental sustainability.

Organization Connections

Throughout the course of the project, the CU Solar Decathlon team has worked and partnered with several different organizations in the local community. The largest partnership we formed was a dual partnership with the City of Boulder (COB) and Habitat for Humanity (H4H). As the owners of the project, the COB connected us with the contractor they hired to manage the development; H4H, a nonprofit that uses the help of volunteers to build homes for low-income families. This partnership has allowed the team to connect with local design firms, sub-contractors, and local volunteers who want to learn more about residential building design and construction. In addition, the team has had the opportunity to teach Habitat for Humanity about green building practices with the hope that the organization will use some of the same strategies applied to The Canopy on future Habitat for Humanity homes.

Our affiliation with The University of Colorado allowed us to leverage resources that played a crucial role in connecting our team with the Boulder community. The university

provided the bridge that we needed to execute and integrate the communications that allowed the word of our project to spread. By correlating our approach with the college of engineering and student fundraising, we were able to get our message out to various departments and hundreds of alumni that would have otherwise never heard about us. Having the support of great advisors and student leaders made this more efficient and easier to execute.

The CU Solar Decathlon Team has also developed a partnership with an organization called Mission Zero, which supports student projects at CU that play a role in mitigating the effects of climate change. Through Mission Zero, the team has gained financial support and has been able to connect with others who share similar goals. Mission Zero was even kind enough to professionally film and produce a promotional video highlighting our team's work.

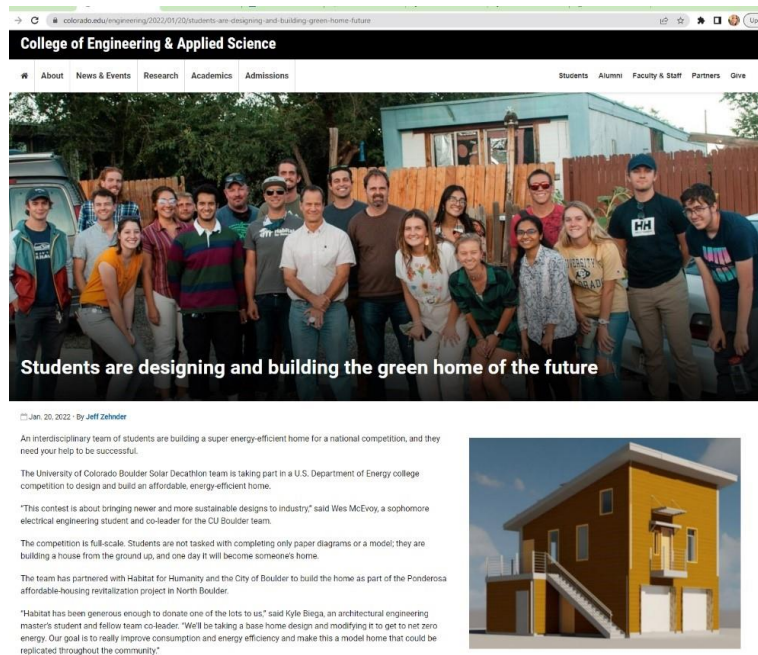
In addition to Habitat for Humanity and Mission Zero, there were several other sponsors that helped the team. Most donated their time acting as advisors to our team during the design phase while others contributed materials or equipment at reduced rates.

CU community

The team has worked hard to form connections with the University of Colorado community. The clean building project has reached the ears of both students and professors at the university through several different outlets. Some of the major communities our team has mentioned earlier played a big component for our team to achieve our goals. Our team started focusing on marketing way back in August of 2021. This was one of our main focuses since we knew we needed to raise money and spread the word to students around the college.

With dozens of team members from several different colleges and degree programs, the project has given opportunities for many students to get an in-depth understanding of green construction. With a variety of undergraduate and graduate students, we got where we are today by recruiting students that are excited and want to help change the way we build.

To spread project awareness within the university, an article was published in the CU Engineering newspaper. This article promoted the project to university students and faculty and allowed members in the engineering community to learn about the importance of sustainable buildings.



Additionally, in the spring of 2022, the Solar Decathlon Team participated in the SS22 Climate Action Expo. This showcase summit, which was run by Mission Zero, is held annually to show off student projects at the University of Colorado that take climate action. The showcase allows university student groups to display climate solution projects. This showcase enabled our team to make connections with other students in our school that were eager to cooperate with us. In addition to our team’s participation, we also received a cash prize for our presentation, bringing further attention to the project.

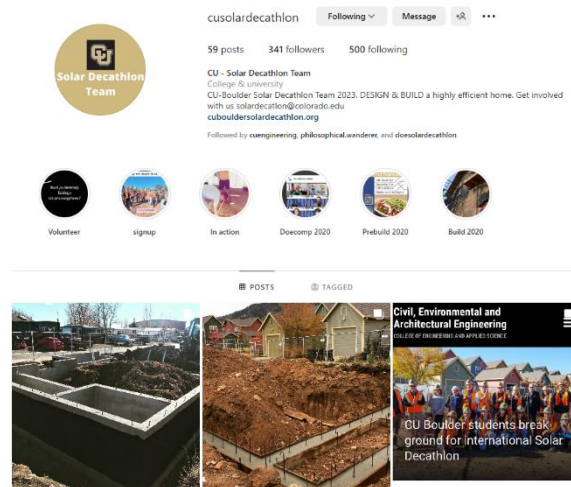


Boulder Community

In addition to the university community, our team has made impacts on the entire Boulder community. Through the partnership with Habitat for Humanity, local volunteers will learn about the process of building a net zero home. These volunteers span many different age groups and represent a wide variety of people in the Boulder area. In addition to volunteers, members of the Ponderosa community will participate in the construction of The Canopy.

In July of 2022, our team held an informational barbeque in the Ponderosa Mobile Home Park to introduce ourselves to the community and answer questions about the project. This event was a smashing success and allowed us to meet who we were actually designing for and the construction team.

Beyond Boulder



in the modern world, social media plays a major role in project marketing. Many people use social media to connect with their communities and to update themselves on local events. We decided to use Instagram due to its accessibility and ability to reach a wide audience. The separate posts share updates on the house construction, team meetings, and outreach events. In addition, the account shares ways to get involved with the team and information about the Solar Decathlon teams from previous years.

In addition to an Instagram account, the team decided to create a LinkedIn account. This allowed the team to showcase the project in a more professional setting that would have a higher chance of reaching professionals in the residential building design industry. It also provided a way for members of the team to network and share team updates.



About us

Project Overview

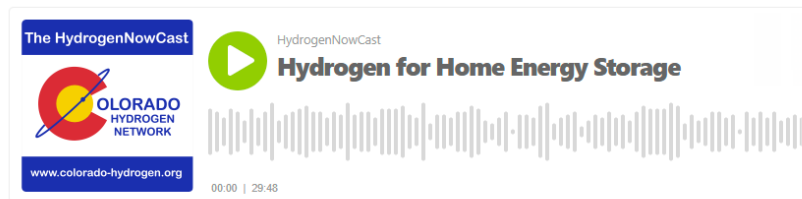
The U.S. Department of Energy Solar Decathlon® is a collegiate competition that prepares the next generation of building professionals to design and build high-performance, low-carbon buildings powered by renewables. The Build Challenge is a two-year design-build competition that challenges students to build net-zero energy building contests that assess the home's performance, resilience, and occupant comfort.

Apart from the social media accounts, we were also featured on a hydrogen energy focused podcast produced by the Colorado Hydrogen Network. This podcast provided a way for the team to thoroughly explain the house's hydrogen energy storage system to those interested in the applications of hydrogen energy.

HydrogenNowCast

Hydrogen for Home Energy Storage

FEBRUARY 18, 2022 BRIAN DEBRUINE SEASON 2 EPISODE 46



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SHARE EPISODE



SHOW NOTES

All about home hydrogen storage from ElektrikGreen, the Solar Decathlon, Habitat for Humanity and the University of Colorado

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Video Produced by Mission Zero

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And the second phase of the competition is the construction component.

Through a partnership with [Flatirons Habitat for Humanity](#), the CU Solar Decathlon team is designing and building an ultra-efficient, net-zero energy home to be incorporated into the [Ponderosa Stabilization Program](#). This team is redefining the next generation of affordable housing on the Front Range by focusing on a robust envelope, carbon-conscious materials, and improved indoor air quality. Not only will this home be net-zero energy, but it will also incorporate a fully automated residential green hydrogen generation and storage system. This system reduces reliance on the grid, allowing the home to be run on renewable energy 24/7 with zero carbon emissions.

The goal is to build a model single-family house that can be replicated in affordable housing markets. Further, they aim to prove the feasibility of the hydrogen economy as an alternative clean energy solution.

The 2023 team's mission is three-fold:

- Raise awareness in the community on sustainable building solutions
- Train the next generation of building professionals entering the workforce
- Create a higher standard of affordable housing focused on energy efficiency, occupant health, and long-term resilience

Redefining Affordable Housing On The Front Range



The Action

Our number one goal is to set an affordable housing precedent for future generations. In order to take small steps to achieve our larger goal, we created a calendar to outline our objectives. To build a solid marketing strategy, we needed to communicate our school's success in past contests and the quality of our hydrogen system.

Setting priorities:

- 1.- Build a team – that works together to build a green building that breaks convention.
- 2.- Spread the word – We created a document that we can share with anyone to find out what we are doing, how we are doing, and most importantly, why it is significant.
- 3.- Raise money – Working with the CU Boulder College of Engineering & applied science communications team and the senior communication specialist from the mentioned department, our team worked to raise money for the Canopy. The marketing plan was well thought out and designed to build widespread momentum. This plan consists of reaching out to department heads, faculty, and alumni. We generated an email to send to alums, faculty, and our own family and friends to spread the word that 25 students are building the home of the future. The email stated that the home will not only be one of a kind but will also introduce a plan for affordable housing that can be replicated.
- 4.- Complete fundraising- . To focus more on the construction phase of this project. Help from many donors allowed our team to raise the most money in the history of our team. By the summer of 2022, our team had raised about \$410k, allowing us to build the house.
- 5.- Spread the word, again! - Share and give the sponsors, the university, and the community updates on what we are doing, how the project is going, and most importantly, how we are working alongside the community while we are under construction. We let folks know that any person can come and volunteer and help build the house. Using our social media, website, and school communications newsletter platforms, we continue to present what our project looks like and how we are progressing.



6.-

Create bonds with the Ponderosa community – As

mentioned before, this affordable house is set in the north Boulder community. Our team wanted to make sure to create positive relationships with this community. We wanted to promote how this house is going to change the way that we live, with minimal negative impact on our climate. This is a different house because it is raising the standard of living for a low-income neighborhood with sustainable practices.



Our team is happy with the marketing results, amount of support, and, most importantly, that the message will be heard beyond our community in this competition. Our team is pleased to have learned what we have through educating others on how climate change is affecting us and how we need to take responsibility.